

The extent of knowledge of oral and pharyngeal cancer among Arabic speaker population in UK: Observational study and Cross-sectional Study

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Abstract

Introduction: Oral and pharyngeal cancers pose a significant threat to human health, with approximately 12,000 cases reported each year in the United Kingdom. The development of these cancers is influenced by several risk factors, including human papillomaviruses (HPV types 16 and 32), tobacco use, alcohol consumption and in some cases vaping. Although earlier studies have shown an increasing incidence of oral cancer, there are still gaps in public knowledge about its symptoms and risk factors.

Method: This study aimed to assess the knowledge of Arabic speaking population in the UK concerning oral and pharyngeal cancer. A structured questionnaire in Arabic was distributed via Google E.forms to 300 randomly selected participants. Data collection and analysis were conducted using SAS and Excel, following the ethical guidelines set forth by the Helsinki Commission (2013)

Results: The findings obtained from the questionnaire show that a total of 300 participants contributed opinions regarding various risk factors that cause unhealthy habits. Among them, 60% admitted having smoked, while 18% confirmed consuming chewing tobacco and/or qat. Furthermore, 53% talked of smoking hookah, showing the rising tendency for taking on these behaviors that may correlate to the development of different Oral and pharyngeal cancer

The data show that smoking poses the highest risk potential for Oral and pharyngeal cancer, irrespective of the type, tobacco, or hookah. Awareness campaigns targeting the symptoms and risks of these habits have indeed started to increase understanding and education in Arabic-speaking communities

Conclusion: The incidence of oral and pharyngeal cancer is found to be possibly related to people's ignorance about oral and pharyngeal cancer in general. Information among participating people, though different, may be limited and differ from one community to another.

Keywords: HPV, Tobacco, Tumors HBV, BIV.

Introduction

Oral and pharyngeal cancer is a serious ailment that undermines the impact, with 2,000 cases being reported every year in the United Kingdom. There were 3,744 cases from the various regions of the United Kingdom in 2016, and according to the Cancer Research Centre in the United Kingdom, the incidence of oral cancer alone stands at 12,000 cases in light of the ongoing functional distribution of work in Northern Ireland and witnesses in varying degrees of infection and spread, combined with Scotland.

Numerous factors are associated with oral and pharyngeal cancers. The most notable causes include human papillomaviruses HPV16 and 32. Additionally, tobacco use, alcohol consumption, chewing tobacco, certain habits like the chewing of fragrant

tobacco, smoking, and vaping also contribute to the development of oral and pharyngeal cancer.

Statistics seem to show that men are about twice as more likely to get cancer than women Two-thirds (66%) of them with Cancer-disease are in the weed. Cancer scientists have not yet provided an explanation for cancer growth as a quite common cancer in the UK. Cancer is now the fifth most common type of cancer in terms of incidence.

There is a sufficient real correlation between age and cancer frequency over four-fifth (85.3%) of cancer cases in people Hematuria were diagnosed after the age of 55.

The survival and mortality rates of oral and pharyngeal cancer depend on how far it has spread, what locations are involved, and the stage of cancer. Radical cure can be expected for stage I, where the cure rate is more than 75%, while for advanced stage IV, the same is a mere 10%.

Other factors have also been reported to be associated with the development of oral cavities and pharyngeal cancers, but the available research method had limited data that could be considered as a real difference contributor, mainly due to the problems encountered in such studies. Bacteria and viruses that have been associated with blood diseases and diseases of the digestive system, such as ulcerative colitis and Crohn's disease, have been said to be related to tumorigenesis of oral and pharyngeal cancer in some way.

Fortunately, oropharyngeal cancers are those tumors whose diagnosis is based on abnormal signs of oropharyngeal cancer in the oral mucosa and lymph node metastases and can greatly benefit premalignant lesion stages of oropharyngeal cancer with remarkable results as such findings can make a difference in survival rates especially in early diagnosis.

Methodology

This study aims to assess the level of knowledge of Arabic speakers about the signs and symptoms of oral and pharyngeal cancer. A series of direct questions were compiled and transformed into a questionnaire in Arabic to reach Arabic speakers. The questions were posted via Google Form to a random sample of 300 participants. Data was collected and processed using SAS and Microsoft Excel 2023-word processing program on a Windows 11 software. Keeping in mind the creative laws of Helsinki Commission 2013: related to protection and participation in a survey with full rights of withdrawal; their being provided with relevant information regarding goal orientation, perils relative to benefit, and assured full understanding of practice guidelines; also acknowledging a survey uniformly just to the people participating, while preserving the data and information secured from possible disclosure; and these studies work on sufficient condition without any electronics or unmanageable consequence.

In addition, it was decided that an ethics committee existed. The questionnaire was divided into seven groups, each with its own purpose, the first of which completed the graphic information.

The first group of questions, the comprehensive demographic characteristics of the respondents are profiled here in the tabular (1) form.

The number of respondents is represented in a bar chart. A pie chart illustrates the distribution of the qualification levels among participants. It also shows the percentage of distribution per regions in the United Kingdom (England, Wales, Scotland, and Northern Ireland) as well as the other details on level of educational and professional backgrounds in graphical data.

As the research shows, the knowledge about oral cancer differs from one person to another. Thus, there are also age groups that are highly susceptible to oral and pharyngeal cancers. Since HPV can be spread through sexual contact, the research

team was interested in knowing about the kind of social status and sexual orientation of research participants.

Table (1): Demographic Information (Biographical Data)

The first group of questions	Number of participants	Number of answers
What is your age group	300	300
How Would you classify your orientation	300	300
Do you live in the UK and where	300	300
What is you Level of education	300	300
What is your social status	300	300

The second group of questions is about habits related to cancer of the mouth and pharynx, such as smoking, drinking alcohol, using electronic cigarettes, smoking hookah, and chewing tobacco, qat, and betel Table (2).

Table (2)

Second group of questions	Number of participants	Number of answers
Weekly alcohol units	300	300
Do you chew tobacco	300	300
Do you chew betel	300	300
Do you chew khat	300	300
Are smoking electronic cigarettes vaping	300	300
Do you smoke cigarettes	300	300
Is smoking hookah (shisha)*	300	300

The third group of questions is about viruses that are related to causing oral and pharyngeal cancer Table (3).

Table (3)

Have you ever been infected with the following viruses?	Yes.	NO	prefer not to answer	Total number of people taking part in the survey
Human Papillomavirus (HPV)	4	290	6	300
Epstein-Barr Virus (EBV)	0	300	0	300
Human Immunodeficiency Virus (HIV)	1	295	5	300
Herpes Simplex Virus Type 1 (HSV-1)	10	289	1	300
Hepatitis B Virus (HBV)	7	278	15	300
Hepatitis C Virus (HCV)	0	300	0	300

The fourth group of questions explains vitamin deficiencies that are associated with oropharyngeal cancer Table (4).

Table (4)

vitamin deficiencies that are associated with oropharyngeal cancer	People suffering from vitamin deficiencies out of 300 participants in the questionnaire
vitamin A	20
vitamin B12	55
vitamin C	62
vitamin D	100
vitamin K	3
vitamin E	1

*There are 59 people who responded that they do not suffer from a deficiency of the vitamins mentioned in the table

The fifth group of questions includes blood diseases related to oral and pharyngeal cancer Table (5).

Table (5)

Blood Disorder	Answer is YES	Answer is NO
Leukemia	0	300
Lymphoma (Hodgkin's & Non-Hodgkin's)	0	300
Anemia (Iron Deficiency Anemia, Pernicious Anemia)	17	283
Thrombocytopenia	0	300
Polycythemia Vera	0	300

The sixth group of questions is about chronic digestive system diseases related to oral and pharyngeal cancer, such as Crohn's disease and ulcerative colitis Table (6).

Table (6-a)

Diseases of the digestive system	Number of yes answers out of 300
Gastroesophageal reflux disease (GERD)	18
Crohn's Disease	7
Celiac Disease	3
Helicobacter pylori (H. pylori)	13
Ulcerative Colitis	1

The seventh group of questions describes the purpose of the study and lists the signs and symptoms of oral and pharyngeal cancer. This group was selected for emphasis, as it is considered particularly important in raising awareness among the questionnaire participants and giving them an idea of the symptoms and signs that may be due to oropharyngeal cancer.

Table (6-b): Questions about signs of oral and pharyngeal cancer

Oral signs and symptoms associated with oral and pharyngeal cancer	yes	No
Do you have difficulty swallowing or persistent sore throat?	1	399
Do you notice white or red patches inside your mouth?	1	399
Do you feel a lump or thickening inside your mouth or neck?	0	300
Do you have persistent ear pain or jaw stiffness?	0	300
Do you experience numbness or tingling in the tongue or lips?	0	300
Has your voice changed or become hoarse?	0	300
Do you have unexplained weight loss	0	300
Have you noticed a red or white spot that does not go away for more than three weeks	1	399
Does a sore heal in three weeks	0	300

Results

Table (7): Shows the sexual identity of the survey participants *Sociodemographic characteristics of participants (n=903)*

Age Group	No.	Gender
18 to 20	10	Male: 100
20 to 30	50	femail :100
30 to 35	100	Othar:50
35 to 40	80	perfer not say :50
40 to 45	50	
45 to 50	5	
50 to 60	4	
60 to 65	1	

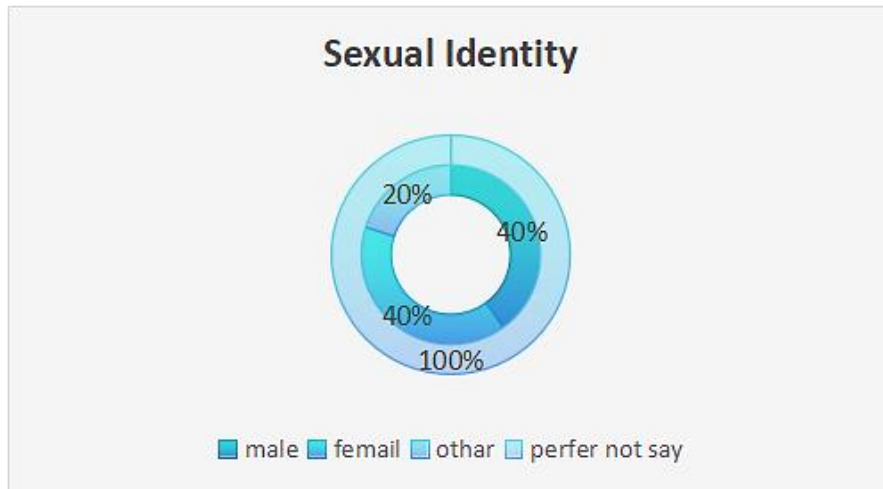


Figure (1): bar chart representing sexual identity

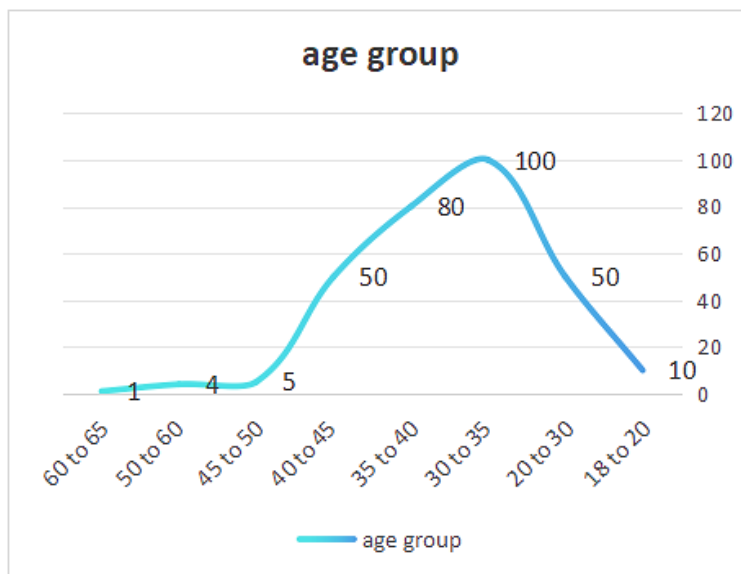


Figure (2): Shows the sexual identity of the survey participants.

Table (8): shows the countries in the United Kingdom showing the number of people participating.

Region of current residency	England	Northern Ireland	Scotland	Wales
Numbers	130	70	80	20

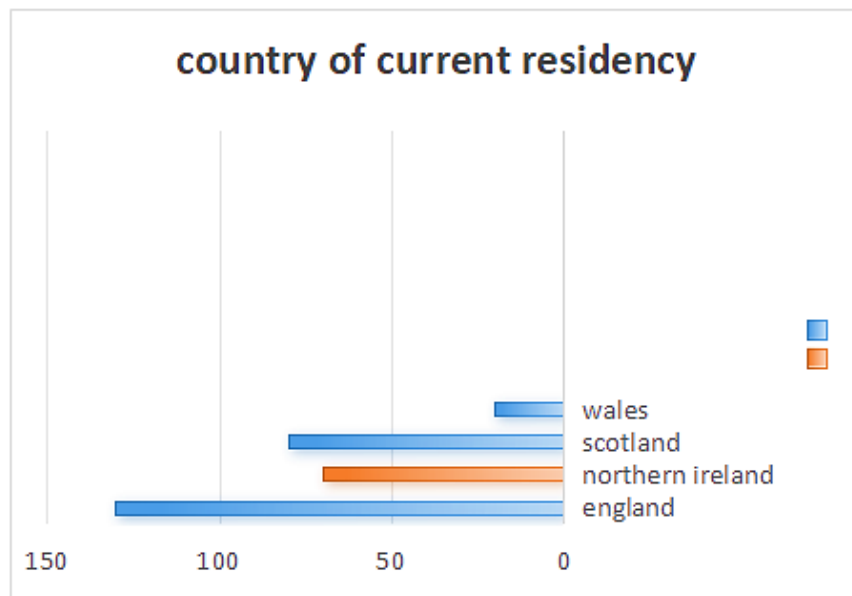


Figure (3): Shows the countries participating in the survey.

Table (9): Number of people according to social status

Marital Status	Number
Married	100
Single	140
Divorced	60
Civil Partnership	0
Prefer not say	0

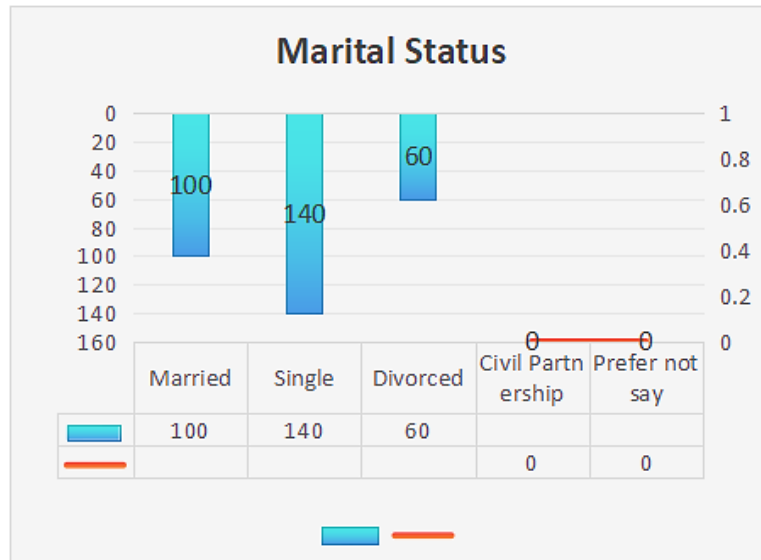


Figure (4): bar chart according to social status

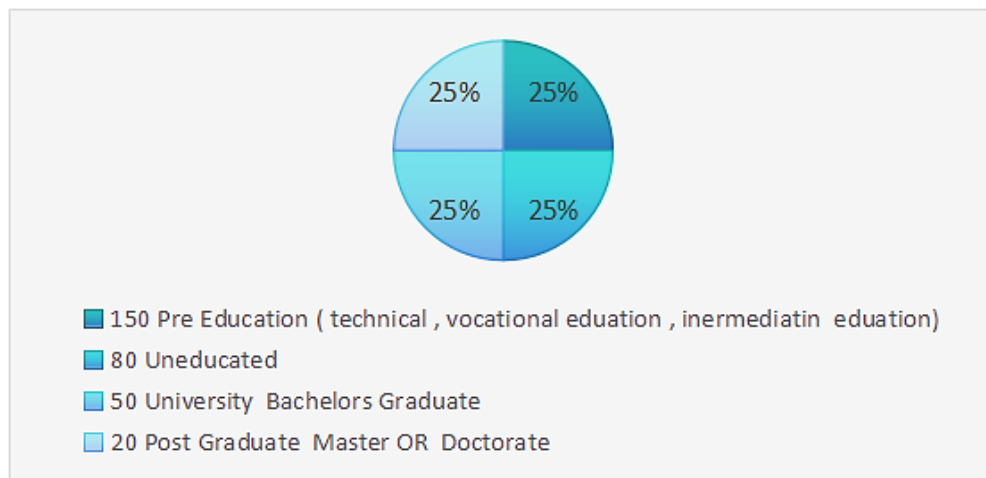


Figure (5): The figure shows the educational level of the participants in filling out the questionnaire.

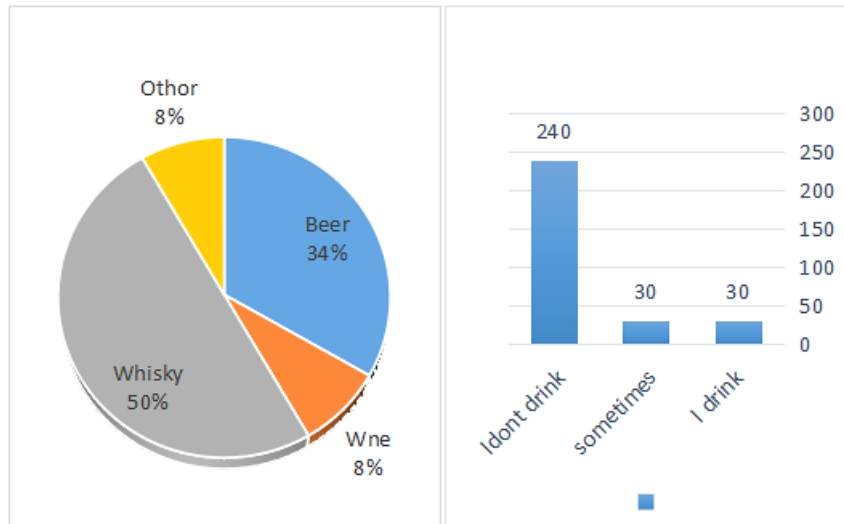


Figure (6): Amount of alcohol intake per week

Table (10): Number of people according to Smoking habit Chewing tomakacco.

Smoking related habits	Number of new people who yes	Number of new people who NO
Chewing tobacco	55	245

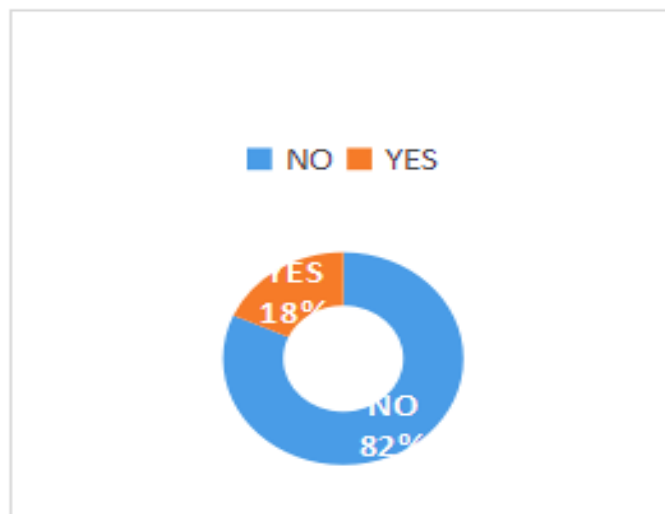


Figure (7): bar chart format representing Smoking habit Chewing tobacco

Table (11): Number of people according to Khat Chewing

Smoking related habits	Number of new people who yes	Number of new people who NO
Chewing Khat*	56	244

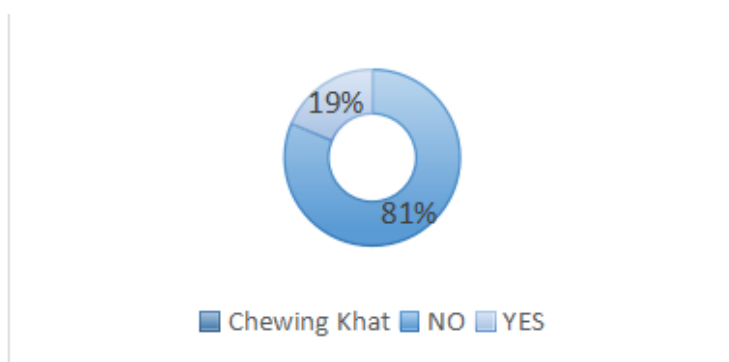


Figure (8): bar chart format for Khat Chewing

Table (12-a): Number of people according to Chewing Betel*

Smoking related habits	Number of new people who yes	Number of new people who NO
Chewing Betel*	1	229

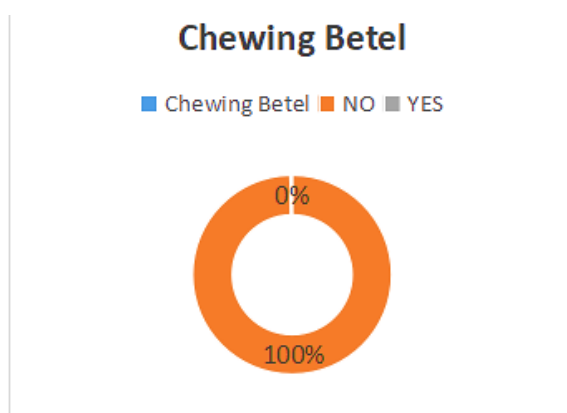


Figure (9): bar chart format representing Betel Quid (Areca Nut) Chewing

Table (12-b): Number of people according to smoking cigarettes

Smoking related habits	Number of new people who yes	Number of new people who NO
Smoking cigarette	180	120

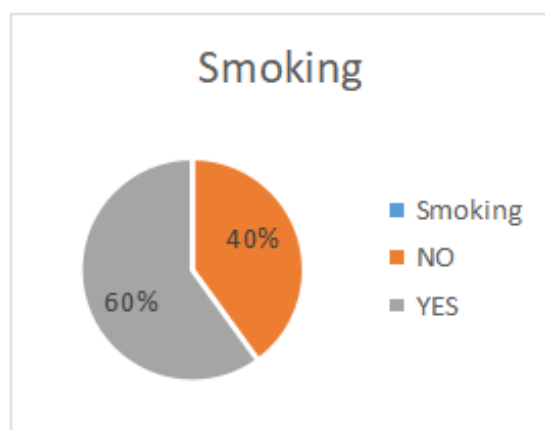


Figure (10): bar chart format standing for Smoking cigarette

Table (13): Average Cigarette Consumption Per Day World Health Organization (WHO), 2021 – Global Report on Tobacco Use

Category	Cigarettes Per Day	Description
Light Smoker	1–10	Occasional to low daily use
Moderate Smoker	11–20	Regular daily smoker (about a pack)
Heavy Smoker	20+	More than a pack per day

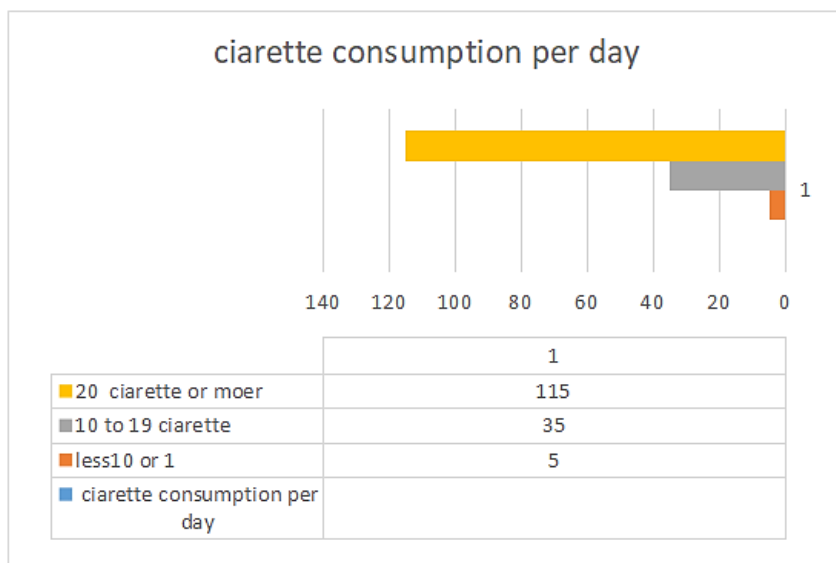


Figure (11): bar chart format representing Smoking cigarette smoking per day

Table (14): Number of people smoking or vaping

Smoking related habits	Number of new people who yes	Number of new people who NO	The answer is sometimes
smoking electronic cigarettes or vaping?	156	70	74

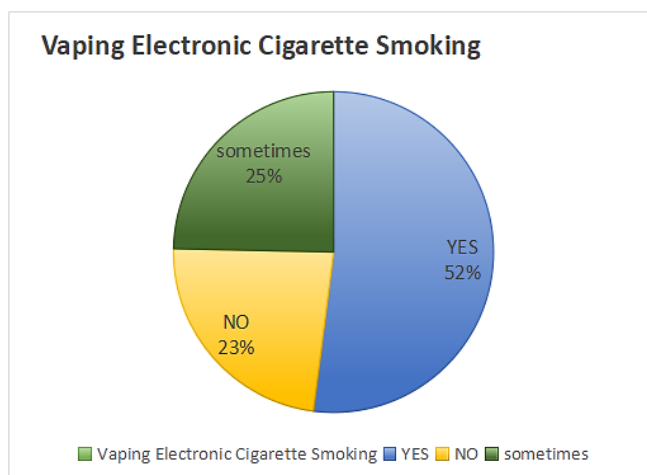


Figure (12): bar chart format representative Percentage of electronic smoking or vaping.

Table (15): Smoking related habits smoking hookah (shisha)*

Smoking related habits	Number of new people who yes	Number of new people who NO
Is smoking hookah (shisha)*	160	140

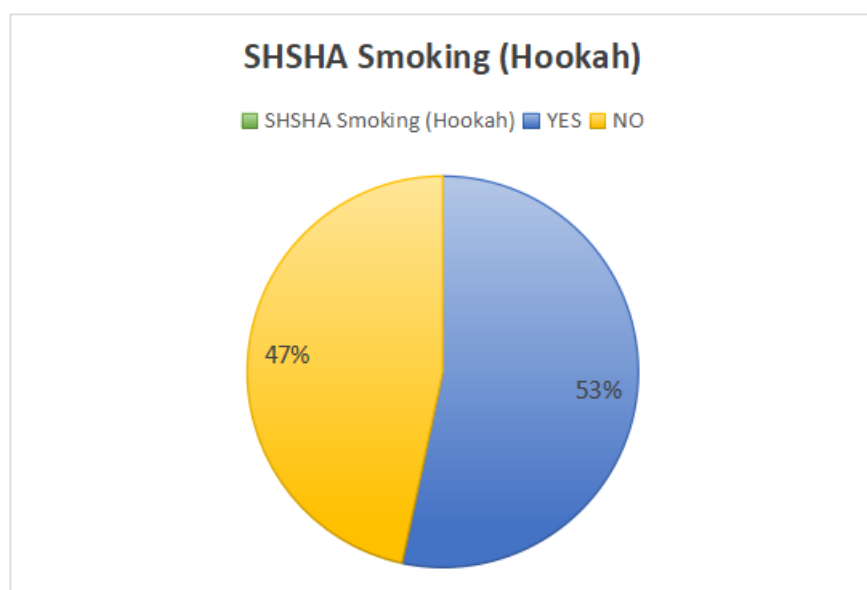


Figure (13): Smoking related habits smoking hookah (shisha)

Results of the third group of questions include simple diagrams answering the viruses that are associated with oral and pharyngeal.

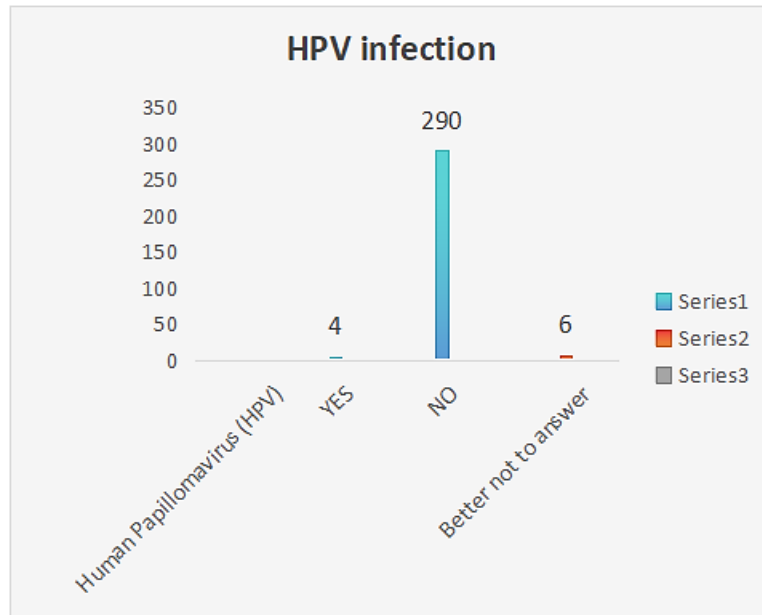


Figure (14): Participants' responses to the statement show that they have been infected with the virus.HPV

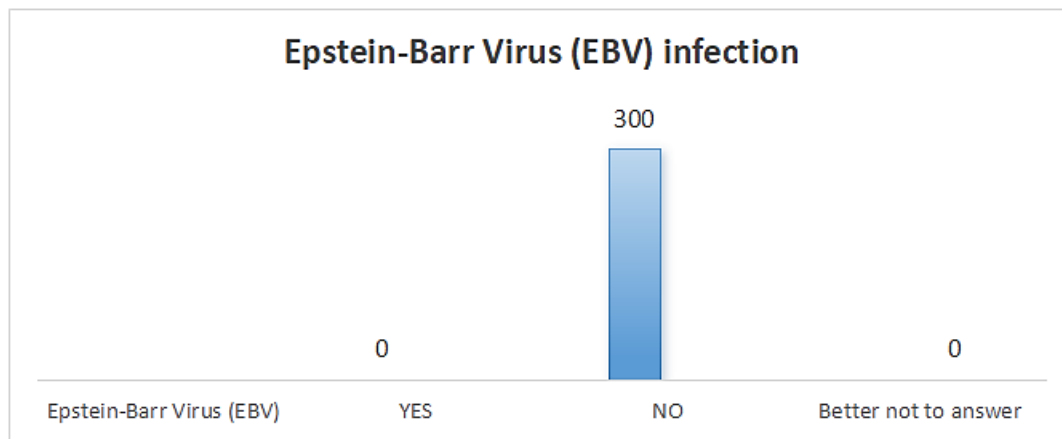


Figure (15): Participants' responses to the statement show that they have been infected with the virus EBV

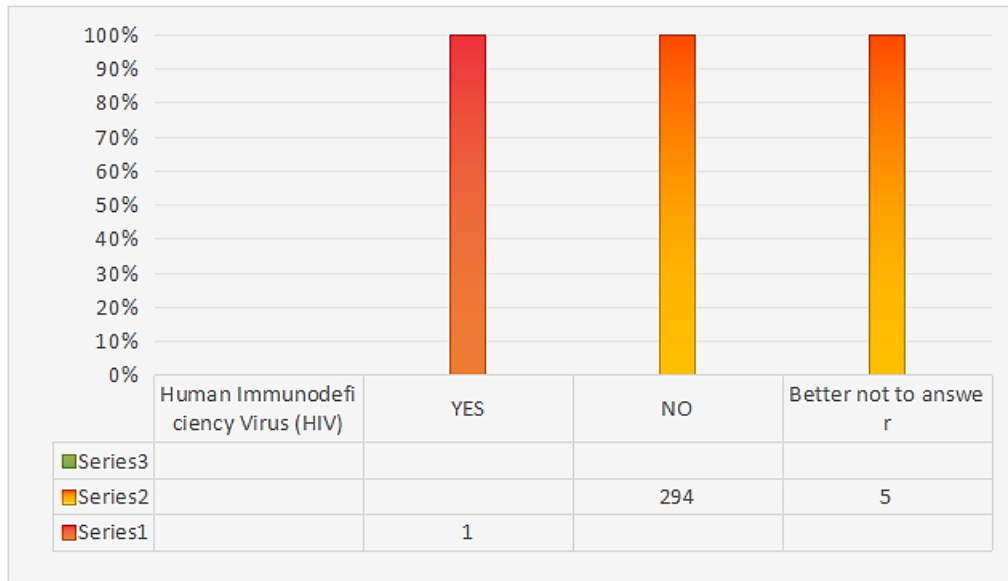


Figure (16): Participants' responses to the statement show that they have been infected with the virus HIV

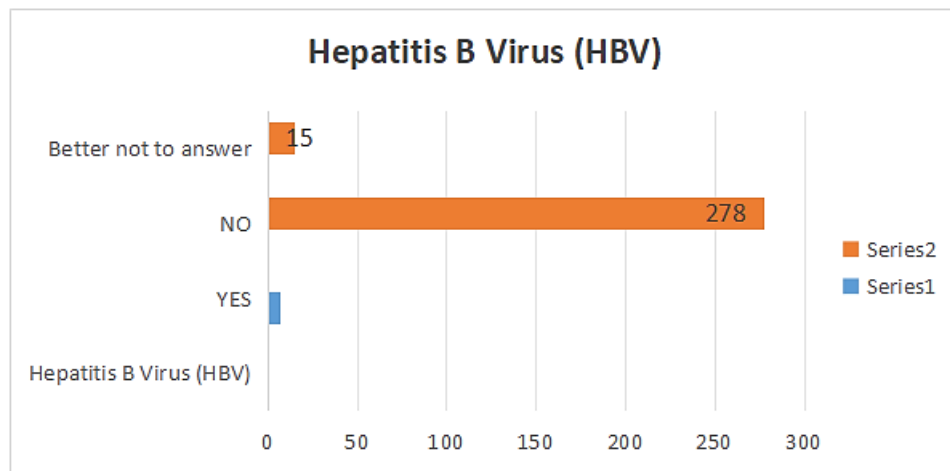


Figure (17): Participants' responses to the statement show that they have been infected with the virus .HBV

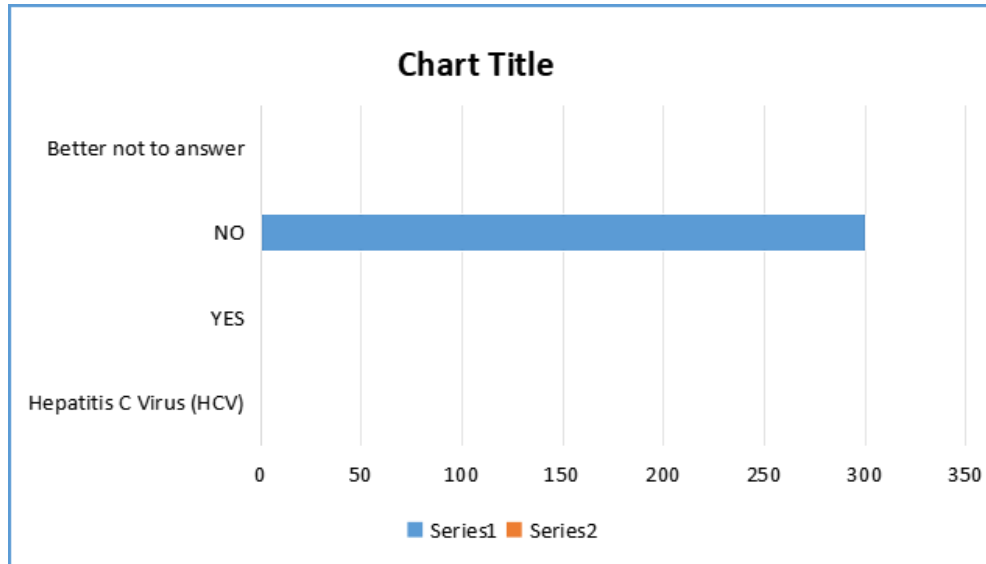


Figure (18): The fourth group of questions explains vitamin deficiencies that are associated with oropharyngeal cancer.

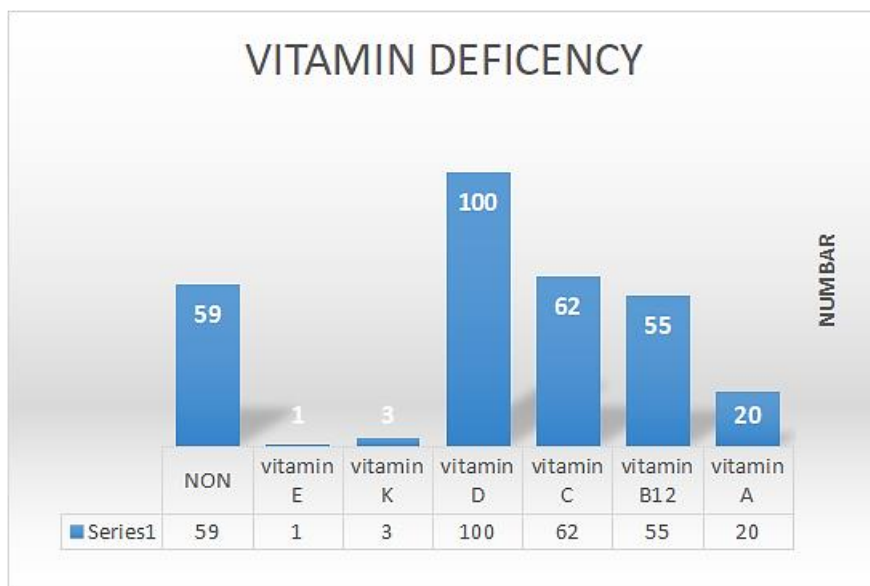


Figure (19)

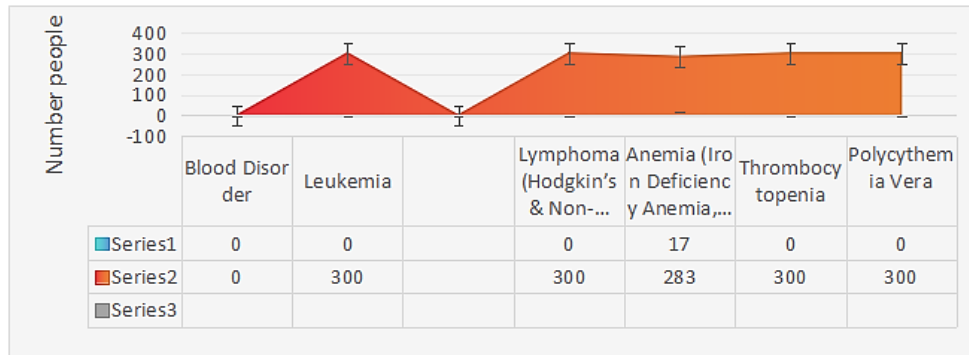


Figure (20)

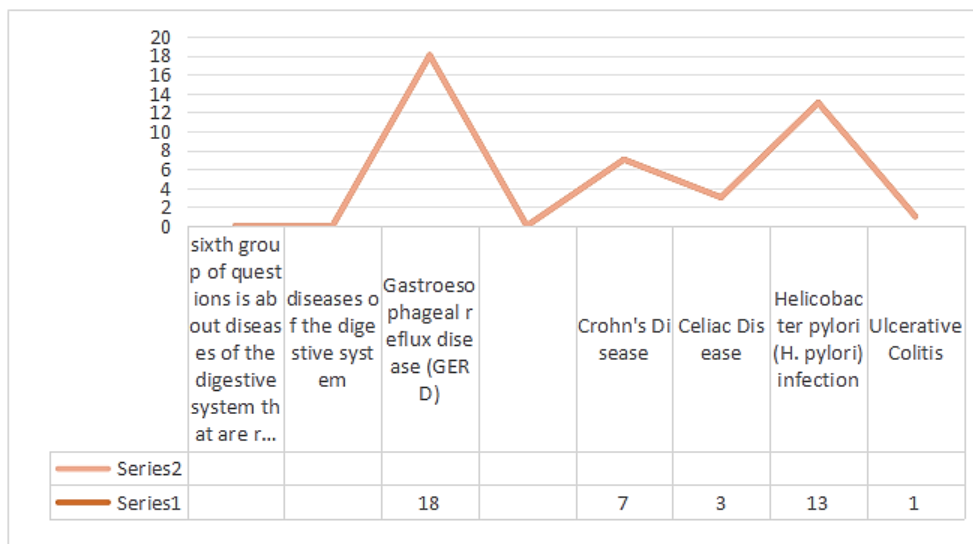


Figure (21)

The curve and graph show the proportion of dental questionnaire participants who responded about the incidence of gastrointestinal diseases and hematological diseases associated with oropharyngeal cancer.

The findings obtained from the questionnaire show that a total of 300 participants contributed opinions regarding various risk factors that cause unhealthy habits. Among them, 60% admitted to having smoked, while 18% confirmed consuming

chewing tobacco and/or qat. Furthermore, 53% talked about smoking hookah, showing tobacco. The rising tendency for taking on these behaviors that may correlate to the development of different Oral and pharyngeal cancers.

The data show that smoking poses the highest risk potential for Oral and pharyngeal cancer, irrespective of the type, tobacco, or hookah. Awareness campaigns targeting the symptoms and risks of these habits have indeed started to increase understanding and education in Arabic-speaking communities.

Discussion

Previous studies and scientific discoveries reveal the ignorance regarding oral and pharyngeal cancers. Some studies carried out by the British Cancer Research Center show a marked rise in the percentage of people with such disease of the oral cavity and pharynx cancer, according to UK Research 2023, *Head and Neck Cancer Statistics*.

Previous studies conducted, though would put that the US, some European countries, and the British NHS have shown that the rates of oral and oropharyngeal cancer vary because of their earlier detection rate in women for HPV ages 25 to 64. This test is done every 3 years until age 49, then every 5 years until age 64, Although HPV-a leading cause of oral and pharyngeal cancer is reducing, there is still a serious risk of people not understanding the symptoms of oral and pharyngeal cancer and the risk factors of smoking and excessive alcohol consumption. National Health Service (NHS). (n.d.). *Cervical screening: Overview*. Retrieved

According to the research study following a similar method in examining awareness, there is limited information about oral and pharyngeal cancer. This is despite variations in earlier studies about sample selection and the level of understanding of symptoms.

Halawany, H. S., Jacob, V., Abraham, N. B., & Al-Maflehi, N. (2013). Have discussed the Awareness of oral cancer and feelings about tobacco use cessation

counseling among dental students in four Asian countries. *Asian Pacific Journal of Cancer Prevention*, 14(6).

Presently, although the study clearly analyzed the understanding of oral and pharyngeal cancer, it provides few limitations regarding its secondary data, and perhaps clinical, geographical, and environmental limitations might set a conflicting point for measuring the level of awareness and knowledge about oral and pharyngeal cancer. Known as precancerous lesions, these are noticeable skin changes or growths in the mouth that may become cancerous if not treated promptly. These abnormalities are considered potential causes of cancer, so prompt detection is essential to prevent their occurrence. The most prominent of these signs and the most important information about them are.

Table (16): Oral Potentially Malignant Disorders (OPMDs)

Condition	Description	Causes	Risk of Malignancy
Leukoplakia	White, non-scrapable patches that do not disappear upon stretching; not linked to a known cause.	Smoking, alcohol consumption, chronic oral irritation.	5-10% may transform into oral cancer.
Erythroplakia	Red, smooth or inflamed patches, sometimes with ulcers or discoloration.	Often linked to smoking or chronic inflammation.	20-60% may progress to cancer, more aggressive than leukoplakia.
Erythroleukoplakia	Mixed red and white patches with variable tissue changes.	Smoking, alcohol consumption.	High potential for malignant transformation.
Atrophic Oral Lichen Planus	White patches with mucosal atrophy or ulceration.	Autoimmune disorder; atrophic types may have an increased cancer risk.	Potentially malignant, requires monitoring.
Submucous Fibrosis	Tissue hardening due to fibrosis, often from betel nut chewing.	Chronic irritation from chewing tobacco or betel nut.	Progressive condition with potential for cancer development.
Chronic Candidiasis	Persistent fungal infection, often seen in immunocompromised individuals.	Candida fungal overgrowth, common in HIV patients.	May increase the risk of leukoplakia and malignancy.
Actinic Cheilitis	Changes in the lower lip due to chronic sun exposure (dryness, ulceration).	Ultraviolet (UV) radiation exposure.	May progress to squamous cell carcinoma.

These lesions are what show the possibility of the appearance of oral cancer, and people who have these problems and lesions should see a dentist for medical intervention. This is done for early detection of dental cancer, although the research and scientific paper depend on the extent of education of the research participants about these lesions, pre-malignant lesions of oral and pharynx cancer. Therefore, it is always recommended to avoid habits that lead to pre-malignant habits, and we must also educate the patient about these diseases, and there are several methods that are followed.

However, these pre-malignant habits, which indicate a change in the tissues and cells in the mucous membranes and in the lymph nodes, whether outside the mouth or in the head and depth area, in addition to the risk factors, are what adopt the story of the development of oral and pharyngeal cancer. However, the participants in the research and the readers of the research give them the impression that these are the lesions that have a full role in the vital and biological change in the environment of oral and pharyngeal cancer. Therefore, it is necessary to focus on the occurrence of any change in the environment of the head, neck, mouth and pharynx in the mucous membranes and surrounding tissues and avoid their occurrence. However, early detection shows you many examination methods and taking a medical history, family history, and the lifestyle and life of the person, whether he is of an Arabic-speaking ethnicity or other multiple ethnicities, with different degrees of awareness, determines the risk factor for you, and it plays a full role in the development of diseases and cancers.

Sudanese tombac, also known as "saffa," is a smokeless tobacco product commonly used in Sudan and some neighboring countries. It is prepared by mixing ground tobacco with sodium carbonate (natron), wood ash, and sometimes flavorings. This mixture is placed in the mouth, usually between the gums and cheeks, and left for a period ranging from a few minutes to hours.

Ingredients of Sudanese tobac:

- Tobacco: This is the main ingredient and contains nicotine, a highly addictive substance.
- Sodium carbonate (natron): Added to increase the alkalinity of the mixture, which increases nicotine absorption in the mouth.
- Wood ash: Sometimes added.
- Other ingredients: Flavorings or other substances may be added depending on the type of tobac.

Harms of Sudanese tobac:

- Oral cancer: Sudanese tobac is considered a significant risk factor for oral and gum cancer. Studies indicate that users of Sudanese tobac have a 50 to 100 times increased risk of developing oral cancer compared to nonsmokers.
- Gum and Dental Diseases: Tobacco causes irritation and inflammation of the gums, and may lead to gum erosion and tooth loss. It also increases the risk of tooth decay.
- Cardiovascular Diseases: Tobacco increases the risk of cardiovascular diseases, such as high blood pressure, heart attacks, and strokes.
- Digestive Problems: Tobacco may cause digestive problems, such as stomach ulcers and colitis.
- Oral Changes: Tobacco causes changes in the mouth, such as white or red patches, discoloration of the gums, and ulcers.
- Addiction: The nicotine in tobacco is highly addictive, making it difficult to quit.
- Other Effects: Tobacco may negatively affect reproductive health and increase the risk of certain other types of cancer.

Oral Cancer Risk:

The risk of oral cancer among Sudanese tobacco users is very high. Studies indicate that the risk of oral cancer increases significantly with the duration and quantity of tobacco use.

Awareness should be raised about the harmful effects of Sudanese tobacco, especially among young people and adolescents. Measures must be taken to reduce tobacco consumption, such as awareness campaigns and the enforcement of laws prohibiting the sale of tobacco to minors. Sudanese tobacco users should quit as soon as possible.

The focus is also very large again on the risk factors and there are many risks and the focus was on the types of tobacco used by Arabic speakers and since most of the participants are Arabic speakers and for this reason the focus was on the types of habits they use and there are also types of tobacco that they smoke such as Sudanese tobacco, Swedish tobacco and qat but these substances play a great role in the mucosal tissues and increase the possibility of changing the mucosal tissues by increasing the liking and also changing the hyperkeratosis and Leukoplakia within the mucosal membranes and it was very important to warn that the long-term use of these substances causes clear changes in the mucosal tissues and awareness about them must be raised in previous studies as previous studies mentioned that there are real cases of oral and pharyngeal cancer as a result of using these substances for long periods

Conclusion

The incidence of oral and pharyngeal cancer is found to be possibly related to people's ignorance about oral and pharyngeal cancer in general. Information among participating people, though different, may be limited and differ from one community to another. We also call for increased and encouraged awareness of oral

and pharyngeal cancer and early detection, which has shown a clear positive impact when using all possible means from governmental and non-governmental organizations and increasing the awareness of British society with its different groups. They call for the collaboration of all concerned parties in creating awareness and enlightenment of oral and pharyngeal cancer while working together, but the danger lies in the risk factors, papillomavirus and smoking, that personifies low awareness. An increase in such awareness is expected to enhance the chances of early detection and significantly improve the survival rate.

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