

# Oral Cancer Awareness and Knowledge in Patients Visiting Tertiary Medical Center

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## ARTICLE INFO

## Article history:

Received: 20 September 2022

Revised: 23 November 2022

Accepted: 24 December 2022

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## Citation:

Roy S, Raj P, Yadav K. Oral Cancer Awareness and Knowledge in Patients Visiting Tertiary Medical Center. MedS. J. Med. Sci. 2022;2(4):15-20



## ABSTRACT

**INTRODUCTION:** Oral and pharyngeal cancer, grouped together, is the sixth most common cancer in the world. Oral cancer also has a significant impact on individual patient quality of life and substantial patient treatment costs, often due to late presentation when the disease is at an advanced stage. Primary prevention to increase awareness of risk factors and the early signs and symptoms for oral cancer is proposed. There is clear lack of awareness and attribution of oral malignancies and risk factors in general public. So, the study aims to assess public awareness in patients visiting a Tertiary Medical Center. **MATERIALS AND METHODS:** This descriptive cross sectional study was conducted in Outpatient department of Dental department at Nobel Medical College Teaching Hospital in Biratnagar, Nepal. A total of 120 participants both male and female above 18 years of age were participants in the study, consisting of smokers, non-smokers and former smokers. Data were analysed by descriptive statistics like mean and percentage. **RESULTS:** Out of total 120 participants, 60% belonged to age group of 18-29 years whereas 30% belonged to age group 30-40 years. 75% of the participants were married. 15% of the participants were uneducated and 40% had education upto high school. 70% of the participants had heard of oral cancer and the main source of information on oral cancer was television 45(45%) as compared to other sources of information. Out of total study subjects 75% were tobacco chewers, 55% were alcohol consumers while 75% of the study population had knowledge of early signs of oral cancer. **CONCLUSIONS:** This study highlights the inadequacy of knowledge about oral cancer in general population. It is highly recommended that mass media campaigns with government funded programs and private medical institutions should run oral cancer programs in timely intervals. **Keywords:** Oral Cancer, Potentially Malignant Disorders, Pharyngeal Cancers.



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<https://doi.org/10.3126/mjmms.v2i4.53521>

## INTRODUCTION

Oral cancer is a serious and growing problem in many parts of the globe. Oral and pharyngeal cancer, grouped together, is the sixth most common cancer in the world. The most commonly diagnosed cancers are lung cancer (1.35 million), breast cancer (1.15 million), and colorectal cancer (1 million) while the most common causes of cancer death are lung cancer (1.18 million deaths), stomach cancer (700,000 deaths), and liver cancer (598,000 deaths). For the last 30 years, the International agency for research on cancer has prepared estimates of the global cancer burden. Beginning in 1975 with broad estimates of numbers of new cases for 12 common types of cancer in different areas of the world [1]. Oral cancer also has a significant impact on individual patient quality of life and substantial patient treatment costs, often due to late presentation when the disease is at an advanced stage

[2]. Primary prevention to increase awareness of risk factors and the early signs and symptoms for oral cancer is proposed. The former might lead to a reduction in incidence while the latter might lead to earlier presentation and improved survival rates [3]. The likelihood of developing oral cancer increases with age, with only 6% of oral cancers arising in people under the age of 45 [4]. Oral cancer leaflets have been shown to raise long-term knowledge and awareness of oral cancer among the general public. Given that most people do not meet medical professionals regularly, the media becomes a valuable means of raising public awareness and knowledge about cancer and disseminating health information in general [5,6]. Studies reveal that while people with symptoms had spoken to their partner, family or friends, many did not seek medical help until much later [7].

Tobacco chewing as a cause for oral cancer was suggested as early as the beginning of the last century. Oral cancer is a disease of multifactorial origin and risk factors vary and operate differently for different population groups. However, the established risk factors are: tobacco in its numerous forms - smoking as well as smokeless/chewing tobacco; areca nut; heavy consumption of alcohol; infection with human papillomavirus; and presence of oral potentially malignant disorders, all of the above frequently having their effects in a background of diets deficient in antioxidant vitamins and mineral [8]. A US Surgeon General report in 1986 concluded that “the use of snuff can cause cancer in humans” and “the excess risk of cancer of the cheek and gum may reach nearly 50-fold among long term snuff users [9].

Successful initial treatment with loco-regional control of oral cancer has led to the emergence of second primary tumours (SPT). The relative risk for multiple primary cancer is higher in younger subjects, those who continue to smoke and drink alcohol after therapy, those treated with radiotherapy alone and those treated post 1990 compared with those treated in earlier decade [10]. Early detection of oral cancer is one of the most efficient ways to reduce high mortality from this disease. Early detection can minimize the morbidity of the disease and its treatment, which is associated with a severe loss of function, disfigurement, depression and poor quality of life. Early detection therefore necessitates raising awareness in the general public and improving access to oral health services for all segments of the population [11].

Oral cancers are mostly squamous cell carcinoma, and some oral carcinomas are preceded by precursor lesions that can present as leukoplakia, erythroplakia, or erythroleukoplakia [12]. Microscopically, these lesions may exhibit oral epithelial dysplasias (OED), a histological diagnosis characterized by cellular changes and maturation disturbances indicative of developing malignancy [13]. OED is an important risk factor in predicting subsequent development of invasive carcinoma [14]. Apart from smoke form, ‘smokeless’ tobacco is also popular. Smokeless form typically involves chewing, sniffing or quid placement. Both smoke and smokeless forms of tobacco have similar adversities [15,16]. Oral mucosal screening is most beneficial for improving 5 year survival rate among patients who are considered most at risk from their tobacco and alcohol consumption habits [17,18].

There is clear lack of awareness and attribution of oral malignancies and risk factors in general public. So, the current study was conducted to assess public awareness in patients visiting Tertiary Medical Center.

## MATERIALS AND METHODS

### Study design and setting

Descriptive cross sectional study was conducted at Outpatient department of Dental department of Nobel Medical College Teaching Hospital, located in Biratnagar and affiliated to Kathmandu University. It is one of the key academic centers in Koshi region of Nepal and runs medical, dental and paramedical sciences with various super-specialty departments with 764 beds capacity. Institution serves patients of a variety of ethnic groups in Nepal, India’s Bihar and West Bengal State. The study was conducted in the time period of December 2020 to June 2021.

### Participants, sample size and sampling technique

A total Number of 120 subjects participated in the study. They were examined by single examiner to control the examiner variability. A simple random sampling technique was used for sampling. Written consent was obtained from the participants (n=120) before the interview. The sample size was calculated by the formula  $N = Z^2 pq / d^2$  where Z is the standard normal deviation, d= degree of accuracy required, p= proportion in the targeted population estimated to have a particular characteristics and q= 1-p.

### Data collection procedure and study variables

Data was collected from the patients visiting outpatient department (OPD) of dental OPD. Only cooperative subjects willing to participate were incorporated in the study. A structured questionnaire comprising of socio- demographic details, information on oral cancer and potentially malignant disorders, with knowledge about risk factors such as alcohol consumption, smoke and smokeless form of tobacco (chewing forms) and source of information on oral cancers, was used as an instrument for data collection. Also participants above 18 years of age were included in the study. Patients who had undergone a session of oral health education and those who had features suggestive of malignancy were excluded from the study.

### Statistical analysis and data management

The data was entered into MS excel and transferred to SPSS version 21.0 for analysis. Descriptive statistics like mean and percentage were employed to summarize the data. Chi-square test was performed to

find association between different variables. A p-value less than 0.05 was considered statistically significant.

#### Ethical considerations

Ethical approval was obtained from the Institutional Review Committee of Nobel Medical College Teaching Hospital, Biratnagar, Nepal (Reference No. 400/20).

## RESULTS

Table 1 demonstrates the demographic details of the total 120 participants. Female were more compared to males. According to the marital status, married 75(62.5%) were more as compare to singles.

Table 2 illustrates the awareness and source of information about oral cancer. 58.3% of the participants had heard of oral cancer while the main source of information was television (37.5%). Table 3 describes about oral cancer related health practices among the participants.

Table 4 demonstrates that 70% of the participants in age range of 41-50 were aware of oral cancer, while 50% of the subjects were unaware with oral cancer ( $p=0.860$ ). 43.6 % of the male population and 40% of female population were aware of oral cancer ( $p=0.687$ ). 80% of the graduate subjects were aware of oral cancer while uneducated group consisted of 80% of subjects were unaware of oral cancer with  $p < 0.001$  (significant).

Age Group	Frequency	Percentage
18-29	60	50.0
30-40	30	25.0
41-50	10	8.3
51-60	20	16.7
<b>Gender</b>		
Male	55	45.8
Female	65	54.2
<b>Marital status</b>		
Single	45	37.5
Married	75	62.5
<b>Educational status</b>		
Uneducated	15	12.5
Primary	30	25.0
High school	40	33.3
Senior secondary	15	12.5
Graduation	20	16.7

## DISCUSSION

The present study examined the level of awareness and knowledge about oral cancer in patients visiting dental department of Nobel Medical College Teaching

**Table 2| Awareness and source of information about oral cancer**

Variables	Frequency	Percentage
<b>Heard of oral cancer</b>		
Yes	70	58.3
No	50	41.7
<b>Source of Information</b>		
Television	45	37.5
Radio	15	12.5
Internet	25	20.8
Friends	13	10.8
Dentist	7	5.8
Community Leaders	15	12.5

**Table 3| Oral cancer related health practices**

Variables	Frequency	Percentage
<b>Cigarette smoking</b>		
Yes	65	54.2
No	55	45.8
<b>Use of smokeless tobacco, chewing tobacco</b>		
Yes	75	62.5
No	45	37.5
<b>Alcohol consumption</b>		
Yes	55	45.8
No	65	54.2
<b>Spending too much time in the sun</b>		
Yes	15	12.5
No	105	87.5
<b>Poor oral hygiene</b>		
Yes	35	29.1
No	85	70.9
<b>Eating hot spicy food</b>		
Yes	10	8.3
No	110	91.7
<b>Knowledge of early signs of oral cancer</b>		
Yes	75	62.5
No	45	37.5

Hospital. Majority of the subjects were female, between 18–29 years of age, and had a high school education, possibly indicating a higher level of health seeking behaviour among females. The level of participant's awareness about oral cancer was average, with only about 58.3% of them knowing about oral cancer, which is similar to the results reported by Ghani et al. [19] and Oyapero et al. [20]. Researches have demonstrated a high prevalence of oral cancer, in South East Asian countries [20].

**Table 4 | Association of oral cancer awareness with sociodemographic characteristics among study subjects**

Characteristics	Heard about Oral Cancer				p -Value for Chi-square
	YES (n=70)		NO (n=50)		
	Frequency	Percentage (%)	Frequency	Percentage (%)	
<b>Age Group(Years)</b>					0.860
18-29	36	60.0	24	40.0	
30-40	15	50.0	15	50.0	
41-50	7	70.0	3	30.0	
51-60	12	60.0	8	40.0	
<b>Gender</b>					0.687
Male	31	56.4	24	43.6	
Female	39	60.0	26	40.0	
<b>Marital status</b>					0.774
Single	27	60.0	18	40.0	
Married	43	57.3	32	42.7	
<b>Educational status</b>					<0.001
Uneducated	3	20.0	12	80.0	
Primary	12	40.0	18	60.0	
High school	27	67.5	13	32.5	
Senior secondary	12	73.3	3	26.7	
Graduation	16	80.0	4	20.0	

Main source of information regarding oral cancer was television and internet services which is similar to the reports of Bajracharya et al. [21], highlighting the power of social media and electronic communication in today's world. In the present study young subjects had more knowledge and awareness about oral cancer than older age group, which is comparable to the study done by Maweri et al. [22]. Though most of the participants were of high school level, their knowledge regarding the oral cancer was low, emphasizing the need for awareness campaigns through social and mass media campaigns targeting younger generations which will ensure proper awareness about malignant disorders, as this age groups individuals are at very high risk of developing deleterious habits that are life threatening. There are, however, quite a few other cultural and habitual risk factors that are restricted to particular areas or populations of the world. In this era of global travel, these habits have crossed borders and their detrimental effects are now being seen throughout the world. These habits include the use of smokeless tobacco in the United States and Northern Europe, the drinking of Mate in South America, chewing of the betel-quid or areca nut in India, Nepal and large parts of Southeast Asia, and South Africa, and the chewing of Khat in Yemen and parts of the

African continent demonstrates regional variations in the prevalence of head and neck cancers [23]. Tobacco consumption is the most important modifiable cancer risk factor and about 30% of all cancers in developed countries are tobacco related [12]. In spite of improvements in treatment modalities over past decades, a significant change in the prognosis of oral cancer has not been achieved. This is possibly due to the failure to identify small and potentially malignant lesions early, which precludes successful treatment. Therefore, early detection is the key to improve survival rate in oral cancer patients [20,21]. Smoking and chewing tobacco were the most identified risk factors, the association of alcohol consumption with oral cancer was low which was comparable to studies done by Ghani et al. [19]. Study subjects lacked knowledge regarding the early signs and symptoms of oral cancer [15,17]. The present study revealed lack of knowledge and awareness towards oral cancer in general public indicating that, more structured teaching programs should be introduced right from the school level, and also TV and other social media platforms should contain advertisements depicting risk factors of tobacco related products [20, 21]. Dental surgeons have an important role of offering counselling on the prevention of oral cancer. Many

medical professionals utilize social media as a platform for raising awareness with prevalent medical ailment in the society and using socialites to endorse their health messages. Appropriate scientific literature is needed to determine the impact of modern technology as compared to the traditional methods of educating population. Similarly, patients attending the dental clinic for treatments unrelated to oral cancer can be incorporated into a preventive recall schedule if they are observed to be in the high risk category [19].

Tobacco use cessation should be encouraged in dental clinics to reduce the effect of this major risk factor for oral and systematic diseases. Treatment of precancerous lesions and cancers is more effective if they are detected at early stages when they are small. In developing countries, more than 50% of oral cancers are detected only after they have become advanced. Cancers in the advanced stage are more painful, disfiguring and the treatment necessary is radical and expensive with a low survival rate [23]. Therefore, early detection is the key to improve survival rate in oral cancer patients [12]. Mortality associated with oral cancer can be reduced by clinical examination. One study described a 32% decline in mortality in high risk individuals, thus implying that about 40000 deaths can be prevented by oral examination worldwide [24]. High-risk groups, such as male subjects, smokers, alcohol drinkers, with poor oral hygiene and participants >40 years of age, had much less

knowledge about the risk factors and signs of oral cancer. Improving knowledge of these high-risk groups about oral cancer is therefore particularly important [19]. Well organized low-cost educational programmes should be designed and launched to reach less privileged groups in our society. People should be motivated for a regular oral examination and should be done by Government funded agencies and private hospitals in collaboration with international agencies, such as WHO so that the premalignant changes can be identified and diagnosed at earliest possible, which will reduce the morbidity and mortality associated with the cancerous lesions.

## CONCLUSIONS

This study highlights the inadequacy of knowledge about oral cancer in general population. Primary preventive measures should similarly be initiated to reduce exposure to the risk factors, while every dental visit should be incorporated as an opportunity to provide information regarding oral malignancies and to do a thorough oral examination. It is highly recommended that mass media campaigns with government funded programs and private medical institutions should run oral cancer programs in timely intervals, since oral and pharyngeal cancers are the most prevalent form of malignancies in this part of the world.

## ADDITIONAL INFORMATION AND DECLARATIONS

**Acknowledgements:** The authors are grateful to the managing director and Institutional review committee of Nobel Medical College in Biratnagar for allowing them to conduct their research.

**Competing Interests:** The authors declare no competing interests.

**Funding:** Self-funded

**Author Contributions:** All authors have contributed equally for the concept and design, statistical analysis, writing of the manuscript, data collection, revision and editing. All authors have read and agreed with the contents of the final manuscript towards publication.

**Data Availability:** Data will be available upon request to corresponding authors after valid reason.

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