

## Oral Cancer Knowledge and Awareness in Patients Visiting Kantipur Dental College

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### ABSTRACT

**Background:** Lack of knowledge and awareness about oral cancer, its risk factors and negligence of the early warning signs play crucial role in raising the incidence of the disease. The present study was carried out to evaluate the awareness of oral cancer among patients visiting Kantipur Dental College, Kathmandu, Nepal.

**Methods:** The cross-sectional study was done in 471 patients from 15-85 years. Self administered questionnaire was prepared which comprised of knowledge of oral cancer, source of information, its early signs and symptoms along with the awareness of its risk factors.

**Results:** Most of the participants (41.80%) had not heard of oral cancer. 31.60% recognized tobacco smoking and tobacco chewing as the chief risk factor with 15.50% and 10.80% of participants who identified white patch and red patch as early sign of oral cancer respectively. Pearson's chi square test was used which showed statistically significant association of total mean knowledge score and awareness score with age, education level and occupation ( $p < 0.05$ ).

**Conclusions:** This study done in dental patients showed lack of knowledge and awareness in general public about oral cancer. There seem to be a need for more planned awareness programs through newspapers, radio, television and health campaigns regarding the association of habits in the development of oral cancer and benefits of detecting oral cancer at early stage for better prognosis.

**Keywords:** Awareness; knowledge; oral cancer.

### INTRODUCTION

Globally, oral cancer is a serious and life threatening problem. The annual estimated incidence of which is around 275,000 in developing countries with the highest incidence in Southeast Asia.<sup>1</sup> Nepal does not have any well documented data regarding the frequency of oral cancer. However, a multi-institutional hospital based study has shown cancer of oral cavity to be the second most common in males.<sup>2</sup> Oral cancer has a direct relationship with oral habits. Moreover, inadequate knowledge about the disease and lack of awareness about its risk factors play vital role in increasing incidence of oral cancer.<sup>1,3</sup> The aim of this study was to assess the level of knowledge and awareness about oral cancer among the patients visiting Kantipur Dental College.

### METHODS

A cross-sectional study was performed in the outpatient department of Kantipur Dental College and Hospital Kathmandu, Nepal from May 2016 to Feb 2017.

Participants from 15-85 years with their written consent were considered for the study. Institutional Research committee (IRC) approval was taken before carrying on the study.

A structured questionnaire was developed from the previously validated items<sup>4,7</sup> with few modifications to suit the population and 18 closed-ended questions comprised of knowledge of oral cancer, source of information, its early signs and symptoms along with the awareness of its risk factors and the various cancers occurring in other anatomical sites. Out of which, seven were used for knowledge score, 10 for awareness score and one for source of information. The subjects were assessed based upon yes, no or don't know response. The knowledge as well as the awareness score was calculated wherein the correct response was given score of '1' while the "incorrect response" or "don't know" response was given score of '0'.<sup>7</sup> Sociodemographic data comprised of age, sex, education level and occupation. The education level was grouped as Illiterate, Primary (up to grade

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5), Lower secondary (up to grade 8), Higher secondary (up to grade 10) and college/ university. Likewise, the occupation was categorized as Professionals, Service, Skilled workers, Laborers and related, Student, Trades and related, Unemployed and Retired.

Statistical package for social science (SPSS) version 20.0 was used for the data entry and analysis. The data were presented as means and standard deviations and the outcome were analyzed using Pearson's Chi-square test. *p*-value was calculated under the predetermined level of significance of 0.05 at the confidence level of 95 %.

## RESULTS

In the present study, Table 1 represents the sociodemographic characteristics. A total of 471 subjects participated in the study, among which only 182 (38.60%) had heard about oral cancer, whereas approximately half of the subjects had no idea about it 289(41.80%). Among the subjects who had heard of oral cancer, 30.10% had gained information from mass media, 10.80% from Dentists as well as Friends and family, 5.30% from Health camps and 4.70% from Physicians. The study sample comprised of almost equal distribution of Male (49.70%) and Female (50.30%) with no significant gender difference in the knowledge as well as awareness score about the existence of oral cancer (Table 2 and Table 3). The age of participants in the study were ranging from 17 to 83 years with the mean 34.71±13.3 years (Table 1).

**Table 1. Frequency distribution of the Sociodemographic characteristics.**

Characteristics	Categories	Frequency (n)	Percent (%)
Total		471	100
Gender	Male	234	49.7
	Female	237	50.3
Age	≤ 20	63	13.37
	21 - 35	204	43.31
	36 - 50	141	29.93
	51 - 65	52	11.04
	66 - 80	10	2.12
	> 80	1	0.21
Education	No response	4	0.84
	Illiterate	26	5.52
	Primary	32	6.79
	Lower Sec	25	5.30
	Higher Sec	132	28.02
	College/ University	252	53.50
Occupation	No response	97	20.59

Professionals	25	5.30
Service	55	11.67
Skilled workers, laborers & related	39	8.28
Student	129	27.38
Trades & related	68	14.43
Unemployed & Retired	58	12.31

Half of the study population had college/university education with the study participants mostly comprising of students (Table 1). In the present study, only about 29.10% of the subjects believed that oral cancer was preventable while more than half of the participants 63.90% had no idea whether it was preventable or not. Likewise, among the study participants, only 22.30% believed that oral cancer was not contagious with 5.70% (Table 2) who believed it was contagious further indicating the low knowledge among the study subjects regarding oral cancer.

The subjects showed slight awareness about the risk factors of oral cancer with 31.60% who recognized tobacco-smoking and tobacco-chewing as the chief risk factor. Alcohol drinking was believed to be the sole risk factor by 17.80% whereas betel-quid chewing was considered as risk factor by 12.30% with 4.20% participants who thought old age as a risk factor in causing oral cancer (Table 3).

The subjects showed poor knowledge regarding the early signs and symptoms of oral cancer with only 15.50% and 10.80% of the total, who identified white patch and red patch as early sign respectively. Similarly, only about 10% of the participants identified unhealed ulcer as early sign of oral cancer. Around 23.10% and 11.50% of the participants had misconception that recurrent dental abscess and dental caries were the early signs of oral cancer respectively (Table 2). The study showed that more than half of the total subjects were aware about Lung cancer (64.33%) followed by Cervix (50.70%), Breast (45.20%), Oral (36.10%), Gastro-intestinal (GI) (21.90%) and other cancers (4.50%) (Table 3).

The total mean knowledge score was 1.26±1.76 (range 0-7) with significant association (*p*<0.05) with age, education and occupation (Table 2). Likewise, the total mean awareness score was 3.96±2.75 (range 0-10) having significant (*p*<0.05) association with age, education level and occupation (Table 3).

**Table 2. Criteria for Knowledge score about Oral cancer and its early signs.**

Sociodemographic characteristics		Knowledge of oral cancer n (%)	Do you think oral cancer is preventable n (%)	Do you think oral cancer is contagious n (%)	Lump as sign of oral cancer n(%)	White patch as sign of oral cancer n(%)	Red patch as sign of oral cancer n (%)	Non-healing ulcer as sign of oral cancer n (%)
Gender	Male	92 (19.53)	61 (12.95)	13 (2.76)	35 (7.43)	40 (8.49)	26 (5.52)	26 (5.52)
	Female	90 (19.10)	76 (60.13)	14 (2.97)	40 (8.49)	33 (7.00)	25 (5.34)	21 (4.45)
Age	≤ 20	28 (5.94)	20 (4.24)	2 (0.42)	8 (1.69)	9 (1.91)	6 (1.27)	2 (0.42)
	21 - 35	101 (21.44)*	82 (17.40)*	15 (3.18)	49 (10.40)*	44 (9.34)	32 (6.79)	26 (5.52)
	36 - 50	35 (7.43)	24 (5.09)	7 (1.48)	13 (2.76)	13 (2.76)	7 (1.48)	12 (2.54)
	51 - 65	16 (3.39)	10 (2.12)	3 (0.63)	4 (0.84)	7 (1.48)	5 (1.06)	7 (1.48)
	66 - 80	2 (0.42)	1 (0.21)	0 (0)	1 (0.21)	0 (0)	1 (0.21)	0 (0)
	> 80	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Education	No response	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Illiterate	1 (0.21)	1 (0.21)	0 (0)	1 (0.21)	0 (0)	0 (0)	0 (0)
	Primary	3 (0.63)	2 (0.42)	1 (0.21)	1 (0.21)	0 (0)	2 (0.42)	1 (0.21)
	Lower Sec	0 (0)	1 (0.21)	0 (0)	0 (0)	0 (0)	1 (0.21)	0 (0)
	Higher Sec	19 (4.03)	8 (1.69)	6 (1.27)	5 (1.06)	4 (0.84)	2 (0.42)	5 (1.06)
	College/ University	159 (35.88)*	125 (26.53)*	20 (4.24)	68 (14.43)*	69 (14.64)*	46 (9.76)*	41 (8.70)*
Occupation	No response	10 (2.12)	7 (1.48)	1 (0.21)	6 (1.27)	4 (0.84)	3 (0.63)	3 (0.63)
	Professionals	24 (5.09)	22 (4.67)	2 (0.42)	13 (2.76)	12 (2.54)	8 (1.69)	7 (1.48)
	Service	36 (7.64)	26 (5.52)	7 (1.48)	13 (2.76)	19 (4.03)	11 (2.33)	13 (2.76)
	Skilled workers, laborers & related	9 (1.91)	8 (1.69)	2 (0.42)	4 (0.84)	2 (0.42)	2 (0.42)	2 (0.42)
	Student	71 (15.07)*	56 (11.88)*	9 (1.91)	30 (10.61)*	26 (5.52)*	18 (3.82)*	11 (2.33)
	Trades & related	23 (4.88)	14 (2.97)	4 (0.84)	7 (1.48)	10 (2.12)	8 (1.69)	10 (2.12)
	Unemployed & retired	9 (1.91)	4 (0.84)	2 (0.42)	2 (0.42)	0 (0)	1 (0.21)	1 (0.21)

\*:  $p < 0.05$

**Table 3. Criteria for Awareness score of cancer and Oral cancer risk habits.**

Sociodemographic characteristics		Awareness about any cancer n (%)	Tobacco smoking n (%)	Tobacco chewing n (%)	Betel quid chewing n (%)	Alcohol consumption n (%)	Lungs n (%)	GI n (%)	Oral n (%)	Breast n (%)	Cervix n (%)
Gender	Male	214 (45.43)	81 (17.19)	76 (16.13)	28 (5.94)	49 (10.40)	184 (39.06)	67 (14.22)	87 (18.47)	87 (18.47)	87 (18.47)
	Female	210 (44.58)	68 (14.43)	73 (15.49)	30 (6.36)	35 (7.43)	119 (25.26)	36 (7.64)	83 (17.62)	126 (26.75)	152 (32.27)
Age	≤ 20	62 (13.16)	18 (3.82)	22 (4.67)	8 (1.69)	7 (1.48)	39 (8.28)	8 (1.69)	23 (4.88)	35 (7.43)	35 (7.43)
	21 - 35	187 (39.70)	85 (18.04)*	83 (17.62)*	33 (7.01)	46 (9.76)	143 (30.36)	55 (11.67)	96 (20.38)*	110 (23.35)*	116 (24.62)
	36 - 50	121 (25.69)	30 (6.36)	27 (5.73)	9 (1.91)	18 (3.82)	85 (18.04)	20 (4.24)	33 (7.01)	49 (10.40)	59 (12.52)
	51 - 65	46 (9.76)	15 (3.18)	16 (3.39)	8 (1.69)	12 (2.54)	31 (6.58)	17 (3.60)	16 (3.39)	16 (3.39)	25 (5.30)
	66 - 80	7 (1.48)	1 (0.21)	1 (0.21)	0 (0)	1 (0.21)	5 (1.06)	3 (0.63)	2 (0.42)	3 (0.63)	3 (0.63)
	> 80	1 (0.21)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.21)

Education	No response	2 (0.42)	1 (0.21)	0 (0)	0 (0)	0 (0)	2 (0.42)	0 (0)	0 (0)	1 (0.21)	1 (0.21)
	Illiterate	18 (3.82)	0 (0)	1 (0.21)	0 (0)	1 (0.21)	15 (3.18)	2 (0.42)	1 (0.21)	2 (0.42)	3 (0.63)
	Primary	23 (0.49)	2 (0.42)	1 (0.21)	0 (0)	2 (0.42)	17 (3.60)	4 (0.84)	2 (0.42)	9 (1.91)	13 (2.76)
	Lower Sec	19 (4.03)	0 (0)	0 (0)	0 (0)	0 (0)	11 (2.33)	3 (0.63)	0 (0)	5 (1.06)	10 (2.12)
	Higher Sec	122 (25.90)	183.82)	13 (2.76)	4 (0.84)	10 (2.12)	83 (17.62)	11 (2.33)	16 (3.39)	40 (8.49)	65 (13.80)
	College/ University	240 (50.95)*	128 (27.17)*	134 (28.45)*	54 (11.46)*	71 (15.07)*	175 (37.15)	83 (17.62)*	151 (32.05)*	156 (33.12)*	147 (31.21)*
Occupation	No response	71 (15.07)	9 (1.91)	10 (2.12)	4 (0.84)	7 (1.48)	43 (9.12)	10 (2.12)	10 (2.12)	33 (7.01)	40 (8.49)
	Professionals	25 (5.30)	17 (3.60)	24 (5.09)	11 (2.33)	8 (1.69)	24 (5.09)	15 (3.18)	23 (4.88)	22 (4.67)	21 (4.45)
	Service	54 (11.46)	32 (6.79)	28 (5.94)	13 (2.76)	21 (4.45)	48 (10.19)	16 (3.39)	35 (7.43)	30 (6.36)	26 (5.52)
	Skilled workers, laborers & related	34 (7.21)	6 (1.27)	5 (1.06)	1 (0.21)	4 (0.84)	29 (6.15)	6 (1.27)	7 (1.48)	8 (1.69)	14 (2.97)
	Student	120 (25.48)*	57 (12.10)*	55 (11.67)*	20 (4.24)*	26 (5.52)*	87 (18.47)*	33 (7.01)*	64 (13.58)*	72 (15.28)*	71 (15.07)*
	Trades & related	67 (14.22)	20 (4.24)	19 (4.03)	7 (1.48)	14 (2.97)	52 (11.04)	18 (3.82)	23 (4.88)	25 (5.30)	28 (5.94)
	Unemployed & retired	53 (11.25)	8 (1.69)	8 (1.69)	2 (0.42)	4 (0.84)	20 (4.24)	5 (1.06)	8 (1.69)	23 (4.88)	39 (8.28)

## DISCUSSION

In the present study, less than half of the study subjects had not heard of oral cancer which is similar to the results of the study done by Pakfetrat et al. (Iran),<sup>8</sup> Sathyanarayanan et al. (India),<sup>9</sup> Alhazzazi (Saudi Arabia).<sup>10</sup> In a developing country such as Nepal where oral cancer accounts for the second most common cancer in middle-aged male population not having heard of oral cancer by half of the study population is an alarming signal.<sup>2</sup> The main source of information about oral cancer was found to be from mass media than other sources clearly indicating the power of media in today's world.<sup>5,7,11</sup>

We found that 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<sup>7</sup> wherein there was statistically significant difference in knowledge of the participants which was attributed to the education level. The participants in our study mostly comprised of students despite which their knowledge regarding the oral cancer was low, emphasizing the need for awareness campaigns specially targeted towards younger generations.<sup>12</sup>

Subjects also showed low awareness regarding the risk habits. Though 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.<sup>5</sup> in Malaysian population and Dost et al.<sup>13</sup> in Australian population. Since oral cancer has a direct relationship with habits, recognizing the risk factor is very crucial in prevention of the disease. We found that the study subjects lacked knowledge regarding the early signs and symptoms of oral cancer. Very few subjects identified unhealed ulcers as an early sign likewise red patch and white patch were believed to be sign of oral cancer by only little percentage of the subjects which denotes the lack of knowledge about the precancerous lesions in general public. Similarly, Pakfetrat et al.<sup>8</sup> and Reddy et al.<sup>14</sup> had also shown low knowledge regarding the early signs and symptoms of oral cancer by the participants. Less than half of the subjects believed that oral cancer was preventable as well as non contagious stating a misconception regarding oral cancer which may be directly linked to lack of knowledge towards the early changes that oral cancer can present with. In the study when "Patients were asked whether they had heard of any other cancer"? The maximum number of patient had heard about lung cancer followed by cervix and breast denoting the lack of awareness about oral cancer compared to cancer affecting other body organs which is in coherence with study done by Rogers et al.<sup>15</sup>

The present study revealed lack of knowledge and awareness towards oral cancer in general public indicating that a more structured teaching programs should be introduced right from the school level. TV,

radio, newspapers should contain advertisements with detail information on the risk factors, harm caused by tobacco use, betel quid chewing, alcohol use along with the premalignant changes of oral cancer.<sup>16</sup> Also our people should be motivated for a regular oral examination so that the premalignant changes can be identified and diagnosed as earliest as possible.

## CONCLUSIONS

This study highlights the lack of knowledge about oral cancer in general public. Hence, people should be made aware of oral cancer through mass media, health camps and health workers. A systematic awareness programs about the role of habits in the development of oral cancer, its complication and benefits of detecting this disease at early stage needs to be implemented by the policy makers, institutions and hospitals for better patient outcome.

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