Does Knowledge Influence Risk Status of Oral Cancer? A Study among Students at Selected Colleges in Nagaland

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Abstract: *A descriptive survey was undertaken among 210 purposively selected students at in Nagaland with the objectives of assessing the knowledge and determining the risk status of oral cancer. Data regarding socio demographic characteristics were collected using Semi structured questionnaire, knowledge and risk status of oral cancer was collected by two separate questionnaires as well as by biophysical measurement and oral cavity assessment. The findings of the study revealed that maximum of the students (34%) had very good knowledge and the least (12%) of students had poor knowledge regarding oral cancer. The most of the (82%) of the students were at low risk for oral cancer. The most predominant risk factors present among the students were smoking tobacco (f=167) & smokeless tobacco (f=148), underweight (f=143)& intake of hot and spicy food (f=135). The findings concluded that there was a negative relation between knowledge and risk status of oral cancer[r (df =208) = -0.325, p<0.05]. There was a statistically significant association found between knowledge and place of residence [Chi^2 df (1) = 3.84, p<0.05] and risk status with place of residence[Chi^2 df (1) = 3.84 p<0.05] and other demographic factors.*

Keywords: Knowledge, Risk status, Oral Cancer

1. Introduction

According to the World Health Organization (WHO) 10.3 million people might die due to cancer by the year 2020. [1]Globally a low 5-year survival rate of 50% is seen among patients with oral cancer.[2] India continues to report the highest prevalence of oral cancers globally with 75,000 to 80,000 new cases reported every year. India is the oral cancer capital of the world because of rampant habit of tobacco chewing.In 2008, 263,861 new oral cavity cancers were diagnosed globally and about 65% of these cancers occurred in men. This accounts for approximately 2% of all new cancer diagnosed (men, 2.6%; women, 1.5%). Oral cancers cause more than 120,000 deaths each year, with a 5-year survival rate of 60%

Oral cancer ranks among the top three types of cancer in the country where it is a major problem in the Indian subcontinent. Age-adjusted rates of oral cancer In India is high and accounts for over 30% of all cancers in the country that is 20 per 100,000 population. The difference in incidence and pattern of the disease can be attributed to the combined effect of regional differences in the prevalence of disease-specific risk factors and ageing of the population.[3]

A recent report on the status of Cancer in Nagaland depicted that use of tobacco is responsible for 90 per cent oral cancer cases in the State. As per data provided by Indian Council of Medical Research (ICMR), the estimated prevalence rate of cancer in Nagaland was 4264 cases in 2011; 4307 cases in 2012 and 4353 cases in 2013 while the mortality rate (deaths) was 695 cases in 2011; 702 cases in 2012 and 709 cases in 2013. It also noted that consumption of tobacco was

about 67.9 per cent men and 28.1 per cent women in Nagaland. According to State-wise, in 2013 Maharashtra topped the list with 43943 cases of deaths while in the same year, Lakshadweep is the lowest with 27cases. [4]

Nagaland has the highest use of pan masala with tobacco at 21%. The researchers' personal experiences tells that majority of the people in the State of Nagaland chew betel nuts, smokeless tobacco and consume alcohol, which are major risk factors for oral cancer and the high prevalence of tobacco users in Nagaland and the high number of very young people using tobacco products is very alarming. Ironically, where the tobacco consumption is on the rise with an alarming percentage in Nagaland region, reports published earlier in the year say that it has declined across India. Moreover oral cancer can be prevented to a great extent with modification in lifestyle. This alarming scenario has made the investigator take up this research.

1.1 Objectives

The objectives were toassess the knowledge of oral cancer among students; determine the risk status based on risk factors and warning signs of oral cancer; find out the relationship between knowledge, and risk status and find the association between knowledge and risk status with selected demographic variables

2. Literature Review

An extensive review of literature was carried out on knowledge and risk status of oral cancer. A cross-sectional study carried out by Bajracharya D, Gupta S, Sapkota M and

Bhatta S (2018) [5]reported that 41.8% of the participants were not aware of oral cancer. They identified white patch (15.5%) and red patch (10.8%) as early sign of oral cancer and 31.6% recognized tobacco smoking and chewing as the chief risk factor of oral cancer.

Fotedar S, Gupta M, Manchanda K and Sharma M (2015) [6] reported that 66.6% of the medical students disagreed that their knowledge regarding prevention and detection of oral cancer is current and adequate. 94.6% of them strongly agreed that there is need for additional training / information regarding oral cancer.

Muwonge R, Ramdas K,Sankla R et all (2008) [7] presented that the strongest risk factor associated with oral cancer was tobacco smoking. The adjusted odds ratios for chewers were 3.1 (at 95% CI=2.1-4.6) for men and 11.0 (at 95% CI=5.8-20.7) for women. Effects of chewing pan with or without tobacco for both men and women were found increased.

A case- control study was conducted by Morenzo-Lopez et all (2000) [8] in Spain showed that the Odds ratio for oral cancer and consumption of 6-20 cigarettes/ day is 3.1 and 7.96 for more than 20 cogarettes/day. The Odds ratio was computed as 5.3 for the consumption of more than 50 gram alcohol a day.

3. Methodology

A cross-sectional exploratory survey was carried out among 210 purposively selected undergraduate college students of Model Christian College, Kohima, Nagaland who were willing to participate and knew English. The students with diagnosed oral cancer were excluded. The data were obtained using a semi structured questionnaire for demographic variables, structured questionnaire for knowledge regarding oral cancer and structured questionnaire, biophysical measurement and oral cavity examination proforma for determining risk status of oral cancer. Data collection techniques used were paper pencil test, and clinical examination and bio physical measurement.

Ethical Considerations
Ethical clearance was obtained from the IEC, medical College and Hospital, Kolkata. Administrative permission was sought from the principal of the concerned college. Informed consent was collected from participants. Confidentiality and anonymity of information was assured.

4. Findings

Table 1: Sample Characteristics, n=210

Demographic Variables	Frequency	Percentage(%)
Age		
18-20 years	113	54
21-23years	97	46
Gender		
Male	107	51
Female	103	49
Place of Residence		
Urban	189	90
Rural	50	10
Monthly Income		
25000	126	60
>25000	84	40
Year of study		
1st Year	63	30
2nd Year	82	39
3rd Year	65	31

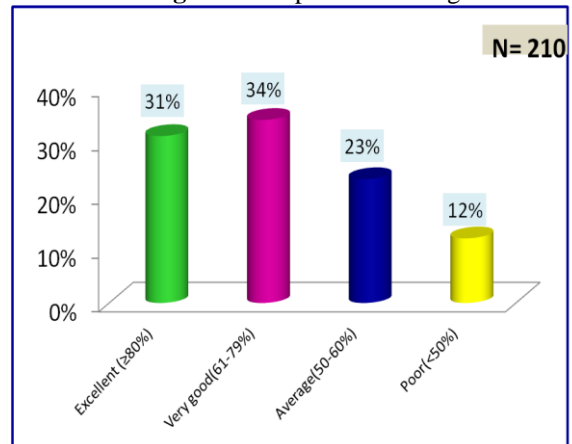**Levels of Knowledge score** is presented in figure 1

Figure 1: Cylinder diagram showing percentage distribution of oral cancer among the subjects according to their levels of knowledge scores.

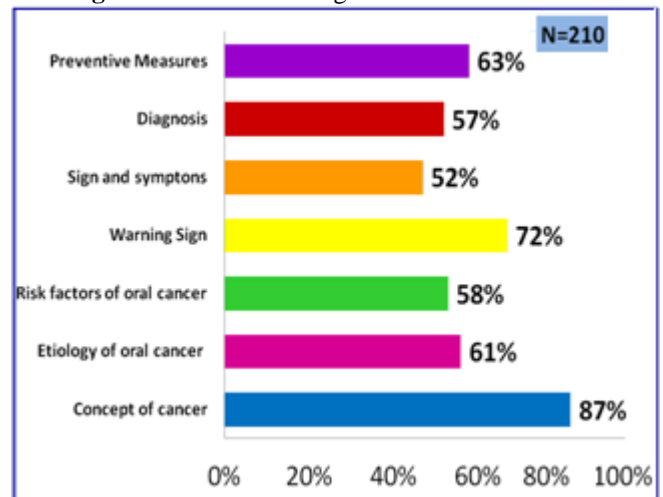**Knowledge score** is shown in figure 2.

Figure 2: Horizontal Bar diagram showing area wise mean percentage distribution of knowledge score regarding oral cancer among the subjects
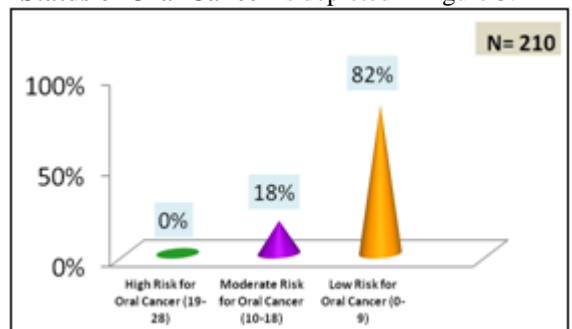
Risk Status of Oral Cancer is depicted in figure 3.

Figure 3: Cylinder (Bar) diagram showing mean percentage distribution of subjects according to risk status of oral cancer

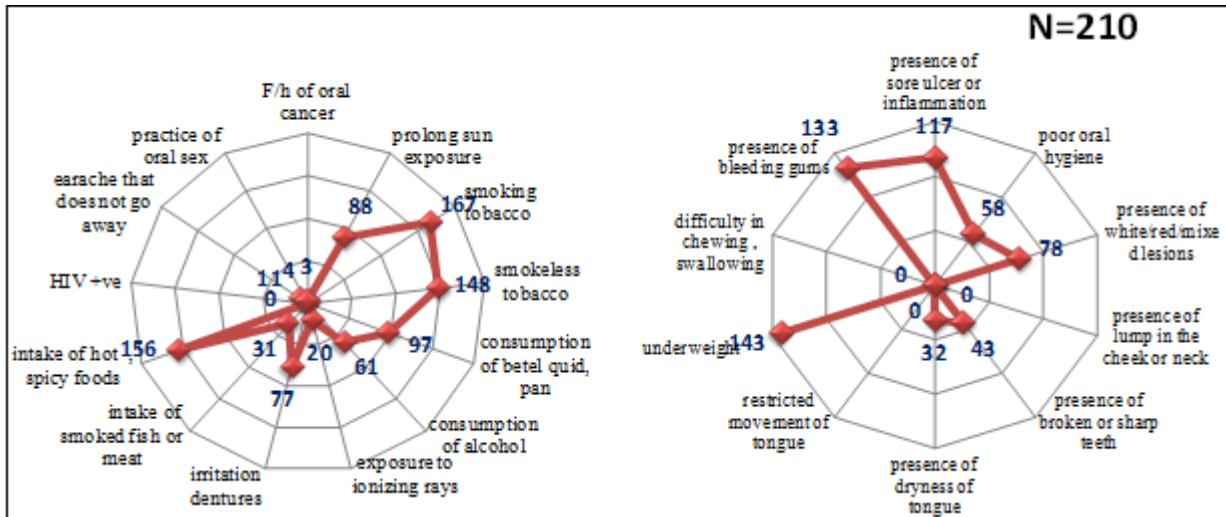**Risk Status** based on presence of risk factors are presented in figure 4.

Figure 4: Radar diagram showing frequency of risk factors for estimating the risk status of oral cancer present among the subjects

Table 2: Association between knowledge score and selected demographic variables, n=210

Selected demographic variables	Knowledge Score		df	χ2
	Below median	Above median		
Age (years)				
18-20	47	63	1	0.3
21-23	39	61		
Gender				
Male	49	63	1	0.016
Female	42	56		
Place of residence				
Urban	73	85	1	7.27*
Rural	13	39		
Monthly family income (rupees)				
<25000	67	91	1	0.98
>25000	18	34		
Year of study				
1st year	22	38	2	0.47
2nd year	35	48		
3rd year	28	39		

Age χ2 df (1)=3.84 p>.05,Gender χ2 df (1) =3.84, p>0.05 , Place of residence χ2 df (1)=3.84 p<.05, Monthly Family Income χ2 df (1) =3.84, p>0.05 *significant Year of Study χ2 df (2)= 5.99 p<.05

Table 3: Association between risk status score with selected demographic variables, n=210

Selected demographic variables	Risk Status Score		df	χ2
	Below median	Above median		
Age(years)				
18-20	49	63	1	1.81
21-23	52	46		
Gender				
Male	49	52	1	0.02
Female	42	56		
Place of residence				
Urban	80	72	1	5.54*
Rural	20	38		
Monthly family income (Rupees)				
<25000	70	82	1	5.92*

>25000	16	42		
Year of Study				
1st year	24	46	2	10.26*
2nd year	18	52		
3rd year	36	34		

Age χ2 df (1)=3.84 p>.05,Gender χ2 df (1) =3.84, p>0.05 , Place of residence χ2 df (1)=3.84 p>.05*, Monthly Family Income χ2 df (1) =3.84, p>0.05 * Year of Study χ2 df (2)= 5.99 p>.05* significant

Correlation between knowledge and risk status for oral cancer: A significant negative correlation established between knowledge and risk status of oral cancer among students (r=-0.325, at df 208, p>0.05).

Hypotheses
The following hypotheses have been developed based on the findings.
H1: There is significant negative correlation between knowledge and risk factor of oral cancer among college students at 0.05 level.
H2: There is a significant association between risk status for oral cancer and place of residence, monthly family income and education levelof the college students at 0.05 level.

Discussion with other studies

On the basis the findings, the discussions can be framed as below:

Bajracharya D, et al [5]reported that most (41.80%) of the subjects have not heard about oral cancer and also showed significant association between total mean knowledge score with age and educational level at 0.05 level of significance.

The present study does not support this as majority (87%) of the subjects had knowledge in the area of concept of oral cancer and also revealed that knowledge of oral cancer did not have association with age and educational status.

The present study findings reveals that there is no significant association found between knowledge and age, gender, education level which is not similar with the study of Maweri SA, Addas A,Tarakji B, Abbas A,et all [9]where it was reported that knowledge of oral cancer had association with age, gender and education level.

5. Conclusion

The present study concludes that majority of the subject had very good knowledge of oral cancer It also highlighted that majority of the respondents (82%) had low risk for oral cancer and only 18% of the respondents were found to have high risk for oral cancer. From the negative correlation it can be concluded that in-spite of increased level of knowledge the students had shown presence of higher risk factors

Limitation: Generalization cannot be possible beyond the study sample.

6. Recommendations

It is further recommended for replication with large samples, in other states/settings, to examine the effect of awareness program on oral cancer, comparison between urban & rural and between male & female.

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