

**Assess the knowledge on oral cancer & its prevention among
higher secondary school students of DRIEMS Science College, Tangi,
Cuttack, Odisha**

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ABSTRACT

A descriptive study with cross sectional survey approach was undertaken to assess the knowledge on oral cancer & its prevention among higher secondary school students at DRIEMS Science College, Tangi, Cuttack. Fifty students were selected by convenient sampling technique & data was collected from the students by using close ended questionnaire. The overall mean percentage scores reveals that the mean score 10.38 ± 5.37 which is 47% of the maximum score revealed average knowledge. However, Area wise distribution of mean, SD and mean percentage of higher secondary school students regarding oral cancer & its prevention shows that out of six areas the highest mean percentage (58%) in the area of “prevention” (4.04 ± 1.29) & “introduction” (1.12 ± 0.72) with mean percentage of 56% reveals average area knowledge. However the lowest mean scores obtained were both clinical manifestations (1.32 ± 0.84) which was 33% of mean percentage and signs & symptoms (1.32 ± 0.95) of mean percentage 40% which shows poor area of knowledge. Further mean percentage score were 50% for “treatment” & , diagnosis 44% were shows again average area of knowledge revealing that they had good knowledge. There is a significant association ($P > 0.05$) between knowledge scores of higher secondary school student with income of parents. But there is no significant association with remaining demographic variable such as age, gender, residential area, occupation of father, occupation of mother, previous source of information & type of family.

Key words: oral cancer, prevention, higher secondary school science students

Introduction

Oral cancer (OC) is a significant worldwide public health problem, with an estimated 377,713 new cases and 177,757 associated deaths in 2020, most common type of OC accounting for over 90% cases. The etiopathogenesis of OC is quite complex, and multiple factors - either individually or synergistically - are involved. Indeed, around 85% of OC cases are preventable as they are attributed to modifiable risk factors including smoking, smokeless tobacco, betel nut, and alcohol, and sun exposure in context of lip and skin cancer.¹

According to the 2016–2017 Global Adult Tobacco Survey (GATS-2), the prevalence of adult smokeless tobacco (SLT) use in India is 21.4% (29.6% in men and 12.8% in women). Due to its cultural acceptability across genders and high prevalence of use, SLT is a predominant risk factor for OPMDs in India, smokeless tobacco (SLT) is a predominant form of tobacco used among people living with HIV (PLHIV). Despite SLT being a risk factor for oral potentially malignant disorders of those enrolled, 61% were men, median age was 36 years, and 33% currently use SLT. PLHIV that are current SLT users are at high risk of OPMDs and potentially oral cancer.²

In 2008, two-thirds of all deaths globally were caused by chronic noncommunicable diseases, mainly cardiovascular diseases (48%) and cancer (21%). Later, in 2016, noncommunicable diseases were responsible for 71% of the 57 million deaths that occurred worldwide, including mainly cardiovascular diseases (44%), cancers (9%), chronic respiratory diseases (9%), and diabetes (4%) [1]. Nevertheless, the evidence shows that cancer mortality decreased by 12% between 2008 and 2016. However, a recurrent observation is the displacement of cancers related to infectious diseases and poverty by cancers linked to lifestyle.³

The prevalence rate of the three major risk factors of HNC among secondary school-going adolescents had been rising over the years. The studies show that at least one out of every ten Nigerian secondary school students engage in tobacco smoking, unprotected oral sex, and/or alcohol drinking habits, thereby increasing their risk of developing HNC, Despite the rising prevalence of HNC risk factors among secondary school students, there exists a very low awareness of HNC among them.⁴

A survey in 2012, 15.8% of Sri Lankans which includes 8.6% of the youth were found to be smokeless tobacco (SLT) users, Committee of the National Authority of Tobacco and Alcohol (NATA), issued a gazette notification banning the production, distribution and sale of SLT products in the year 2016. Further, according to the 2018 WHO factsheet on Sri Lanka, tobacco is responsible for 12,351 deaths and it represents 10% of all deaths. It has estimated that there are 2.1 million current tobacco users in the country.⁵

The Global Adult Tobacco Survey (GATS) in India has estimated that 99.5 million (10.7%) of adults currently smoke Tobacco and 199.4 million (21.4%) of adults use the smokeless form of Tobacco. It is also predicted that there are more than 300 million users of smokeless Tobacco globally . As the name indicates, smokeless Tobacco products (STPs) are consumed without smoking (heating), and some consumers use it as an alternative to smoking cigarettes as there is a misconception that STPs are less harmful, even though there is substantial evidence to support carcinogenicity of STPs. According to the “International Agency for Research on Cancer” (IARC), which assesses the carcinogenic risk.⁶

The potential role of high-risk HPV types, particularly HPV-16 as risk factors for the development of oral cancer has been elucidated for decades. Additionally, the burden of HPV-related oral cancer is increasing worldwide. Various studies from developed countries (e.g. North America, Europe, Japan and Australia) reported that 17–56% of all oral cancers are HPV-related.⁷

Based on GLOBOCAN estimates.2012, about 14.1 million new cancer cases & 8.2 million deaths occurred in 2012 worldwide. Over the year the burden has shifted to less development countries, which currently account for about 57% of all cases & 65% of cancer death worldwide.⁸

Cancer of the oral cavity is one of the most common malignancies,¹ especially in developing countries but also in the developed world. Worldwide, 405,000 new cases of oral cancer are anticipated each year, the countries with the highest rates being Sri Lanka, India, Pakistan, Bangladesh, Hungary, and France, causing 8,650 deaths. Alcohol and tobacco seem to have a synergistic effect in the etiology of oral and oropharyngeal SCC. However, alcohol is linked to an increased risk of cancer even in nonsmokers. Other factors such as poor oral hygiene, wood dust exposure, dietary deficiencies, and consumption of red meat and salted meat^{18,19} have been reported as etiologic factors. Pathologically constitute more than 90% of all oral cancers. Other malignant tumors can arise from the epithelium, connective tissue, minor salivary glands, lymphoid tissue, and melanocytes, or metastasis from a distant tumor.⁹

STATEMENT OF PROBLEM

“A study to assess the knowledge on oral cancer & its prevention among higher secondary school students of DRIEMS Science College ,Tangi, Cuttack , Odisha”

OBJECTIVES OF THE STUDY

- To assess the knowledge of higher secondary school students on oral cancer & its prevention.
- To find out the association between knowledge scores with selected demographic variables

Research Methodology

Research approach: The approach for conducting this study was quantitative research approach.

Research design: Research design for this study was non experimental descriptive research design.

Population: The population of the study is higher secondary school science students who meet inclusion and exclusion criteria.

Setting of the study

The present study was conducted in DRIEMS higher secondary school, Tangi, Cuttack.

Sample Size: The total sample for present study was 50 students.

Sampling technique: convenient sampling technique

Ethical Consideration

For the present study the investigators took into consideration of the ethical issues. The research committee accepted the study. Prior permission was obtained from Principal office, DRIEMS Science College, Tangi, Cuttack.

- Explanation regarding purpose of study was given to Head of the institute.
- Anonymity of the participants was ensured.
- Confidentiality of the data was maintained

Data Collection Procedure

The data was collected from higher secondary school students regarding their knowledge on oral cancer and its prevention in their class room after getting permission from Principal, DRIEMS science College, Tangi, Cuttack. Questionnaire was given to higher secondary school students and were explained about the nature and purpose of the study and their expected participation in the study. Samples of 50 higher secondary school students were selected by convenient sampling (was assured and code no was given to each student) and the data was gathered and analysis was done by descriptive and inferential statistics with the help of SPSS 2.0 statistics package.

RESULTS

Tab.1 Distribution of demographic characteristics according to their age, gender, residence, family type, income and religion

n=50

Age (in yrs.)	Number	Percentage (%)
15-17	46	92
18-20	04	08
Gender		
Male	37	74
Female	13	26

Residence		
Rural	35	70
Urban	15	30
Family type		
Joint	34	68
Nuclear	16	32
Income		
<5000	4	8
50001-10000	16	32
10001-20000	23	46
>20000	7	14
Religion	Number	Percentage (%)
Hindu	47	94
Muslim	03	6

The above table shows that the highest percentage (92%) of +2 students were in the age group of 15-17years, whereas only (8%) were in the age group of 18-20 years. Maximum number of (74%) +2 students was males and only 26% of females were participated in this study, might be because of availability of more male candidates. Majority 70% +2 students were rural and only 30% were living in urban area, 68% belongs to joint family but 32 % are nuclear family, mostly 46% belongs to income of 10001-20000 INR whereas less than 5000 INR is only 8% more over only 14% have more than 20000 INR. Only 36% are earning 5001-1000 INR, 94% were belongs to Hindu religion and only 6% were Muslim.

Table:2. Distribution of demographic according to their no. of children, Father and Mother occupation and sources of information.

n=50

No. of children	Number	Percentage (%)
1	16	32
1-2	18	36
3 and more	16	16
Father Occupation		
Labourer	7	14
Business	21	42
Govt. Employee	14	28
Self-employee	8	16
Mother Occupation		
House wife	49	98
Service	1	2
Sources of information		
Books	20	40
Internet	16	32
Any AV aids	7	14
others	7	14

Participant's family shows that 36% of them are two children in their family but one child family constitutes 32%. Whereas more than three children are accounts the same as 32%, The occupation of father shows that around 42% are indulged in business where as 28% are Govt employees. Only negligible number of 14% belongs to laborer, Mother's occupation shows that 98% includes housewives but only 2% are doing service, Previous source of information says that nearly 48% of the students are using book rather than internet which includes 32%.

Tab 3: Area wise distribution of mean, SD & mean percentage of higher secondary school students on oral cancer & its prevention.

n=50

Area	Maximum score	Mean	SD	Mean (%)
Meaning & definition	2	1.12	0.72	56
Cause & Risk Factor	4	1.32	0.84	33
Sign & Symptom	4	1.58	0.95	40
Diagnosis	3	1.32	0.90	44
Treatment	2	1	0.67	50
Prevention	7	4.04	1.29	58
Over all	22	10.38	5.37	47

Table one shows that area wise distribution of mean, SD and mean percentage of higher secondary school students regarding oral cancer & its prevention shows that out of six areas the highest mean percentage (58%) in the area of “prevention” (4.04±1.29) & “introduction” (1.12±0.72) with mean percentage of 56% reveals average area knowledge. However lowest mean scores obtained were both clinical manifestations (1.32±0.84) which was 33% of mean percentage and signs & symptoms (1.32 ±.95) of mean percentage 40% which shows poor area of knowledge. Further mean percentage score were 50% for “treatment” & diagnosis 44% were shows again average area of knowledge revealing that they had good knowledge.

Tab.4: Association between the knowledge scores of higher secondary school students with their elected demographic variables.

n=50

Sl. No.	Demographic variables	χ^2 value	P value	Level of Significance
1	Age	2.6	0.12	NS
2	Gender	0.40	0.81	NS
3	Residential Area	2.9	0.2	NS
4	Type of family	0.17	0.9	NS
5	Income of parents	10.34	0.3	S
6	Religion	0.60	0.73	NS
7	Number of sibling	3.23	0.51	NS
8	Father's occupation	4.54	0.60	NS
9	Mother's occupation	0.43	0.80	NS
10	Previous source of information	6.94	0.34	NS
11	In family anybody is known case of cancer	2.44	0.2	NS

For P>0.05=not significant

S-Significant

NS-Not Significant

The above table reveals that there is a significant relationship between the level of knowledge with income of the parents and remaining demographic variable does not have any significant relationship with knowledge such as age, sex, occupation, type of family, father's occupation, mother's occupation, religion and previous source of information.

Discussion:

The fifty higher secondary school students were given self administered questionnaire on oral cancer and its prevention which contains 6 areas and 22 items. Each

question was having four response options in which one was correct and three were wrong answers.

There were 70% of higher secondary school students having average knowledge on oral cancer and its prevention but 10% of students having poor knowledge and remaining only 10% having good knowledge.

This finding of the study is supported with similar study conducted on knowledge level among dental students regarding oral cancer. In this study they have above average knowledge for 75% of subjects and only 15% have poor knowledge.

Area wise distribution of mean, SD and mean percentage of higher secondary school students regarding oral cancer & its prevention shows that out of six areas the highest mean percentage (58%) in the area of “prevention” (4.04 ± 1.29) & “introduction” (1.12 ± 0.72) with mean percentage of 56% reveals average area knowledge. However lowest mean scores obtained were both clinical manifestations (1.32 ± 0.84) which was 33% of mean percentage and signs & symptoms (1.32 ± 0.95) of mean percentage 40% which shows poor area of knowledge. Further mean percentage score were 50% for “treatment” & diagnosis 44% were shows again average area of knowledge revealing that they had good knowledge and it reveals that there is a significant relationship between the level of knowledge with income of the parents.

The association between knowledge scores and socio demographic variables was done using chi square formula. There was significant relationship between knowledge scores and income of the parents. However, there were no significant with other socio demographic variables such as age, gender, religion, previous sources of information, father’s occupation, mother’s occupation and type of family

Conclusion:

The findings of the present study suggest that the level of knowledge of higher secondary school students on oral cancer and its prevention. Area wise distribution of mean, SD and mean percentage of higher secondary school students regarding oral cancer & its prevention shows that out of six areas the highest mean percentage (58%) in the area of “prevention” (4.04 ± 1.29) & “introduction” (1.12 ± 0.72) with mean percentage of 56% reveals average area knowledge. However lowest mean scores obtained were both clinical manifestations (1.32 ± 0.84) which was 33% of mean percentage and signs & symptoms (1.32 ± 0.95) of mean percentage 40% which shows poor area of knowledge. Further mean percentage score were 50% for “treatment” & diagnosis 44% were shows again average area of knowledge revealing that they had good knowledge and it reveals that there is a significant relationship between the level of knowledge with income of the parents and remaining demographic variable does not have any significant relationship with knowledge such as age, sex, occupation, type of family, father’s occupation, mother’s occupation, religion and previous source of information. This study gives a rough idea about their knowledge because oral cancer is a serious issue in India.

References

1. Shamala, A., Halboub, E., Al-Maweri, S. A., Al-Sharani, H., Al-Hadi, M., Ali, R., Laradhi, H., Murshed, H., Mohammed, M. M., & Ali, K. (2023). Oral cancer knowledge, attitudes, and practices among senior dental students in Yemen: a multi-institution study. *BMC oral health*, 23(1), 435.
2. Marbaniang, I., Joshi, S., Sangle, S., Khaire, S., Thakur, R., Chavan, A., Gupte, N., Kulkarni, V., Deshpande, P., Nimkar, S., & Mave, V. (2022). Smokeless tobacco use and oral potentially malignant disorders among people living with HIV (PLHIV) in Pune, India: Implications for oral cancer screening in PLHIV. *PloS one*, 17(7), e0270876.
3. Gijón-Soriano, A. L., Argueta-Figueroa, L., Pérez-Cervera, Y., Acevedo-Mascarúa, A. E., González-Arratia-López-Fuentes, N. I., Torres-Muñoz, M. A., Moyaho-Bernal, M. L. A., & Torres-Rosas, R. (2022). Association between sociodemographic characteristics and level of knowledge about oral cancer among Mexican dental health professionals: a cross-sectional online survey. *BMC medical education*, 22(1), 874.

4. Jayasinghe, R. D., Jayasooriya, P. R., Amarasinghe, H., Hettiarachchi, P., Siriwardena, B., Wijerathne, U., Kithalawarachchi, S. K., & Tilakaratne, W. M. (2021). Evaluation of Successfulness of Capacity Building Programmes on Smokeless Tobacco and Areca Nut Cessation. *Asian Pacific journal of cancer prevention : APJCP*, 22(4), 1287–1293.
5. Monika, S., Dineshkumar, T., Priyadharini, S., Niveditha, T., Sk, P., & Rajkumar, K. (2020). Smokeless Tobacco Products (STPs) Harbour Bacterial Populations with Potential for Oral Carcinogenicity. *Asian Pacific journal of cancer prevention: APJCP*, 21(3), 815–824.
6. Sallam, M., Al-Fraihat, E., Dababseh, D., Yaseen, A., Taim, D., Zabadi, S., Hamdan, A. A., Hassona, Y., Mahafzah, A., & Şahin, G. Ö. (2019). Dental students' awareness and attitudes toward HPV-related oral cancer: a cross-sectional study at the University of Jordan. *BMC oral health*, 19(1), 171.
7. Torre, L. A., Bray, F., Siegel, R. L., Ferlay, J., Lortet-Tieulent, J., & Jemal, A. (2015). Global cancer statistics, 2012. *CA: a cancer journal for clinicians*, 65(2), 87–108.
8. Montero, P. H., & Patel, S. G. (2015). Cancer of the oral cavity. *Surgical oncology clinics of North America*, 24(3), 491–508.
9. Kanmodi, K. K., Fagbule, O. F., Ogbeide, M. E., Ogunniyi, K. E., Isola, T. O., Samuel, V. O., Aliemeke, E. O., & Adewuyi, H. O. (2022). Knowledge of senior secondary school students in Nigeria about Head and Neck Cancer: Implications on prevention strategies. *Malawi medical journal : the journal of Medical Association of Malawi*, 34(3), 162–169.
10. Fotedar, S., Bhardwaj, V., Manchanda, K., Fotedar, V., Sarkar, A. D., & Sood, N. (2015). Knowledge, attitude and practices about oral cancers among dental students in H.P Government Dental College, Shimla-Himachal Pradesh. *South Asian journal of cancer*, 4(2), 65–67.

