A study to assess knowledge on oral cancer and the prevalence of tobacco habits among adolescents of age 13 to 16 years in selected government schools of Nalbari district, Assam

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Abstract

Introduction: The reason for high prevalence of oral cancer in India is primarily because tobacco is consumed in the form of gutka, quid, snuff or misri. Rising tobacco use in India, where 40 per cent of the world's smokers live has contributed to this trend. In comparison, in US oral cancer represents approximately 13 percent of all cancers thereby translating into 30,000 new cases every year. Facts about oral cancer in India

Problem statement: A study to assess knowledge on oral cancer and the prevalence of tobacco habits among adolescents of age 13 to 16 years in selected government schools of Nalbari district, Assam.

Materials and Methods: Research Approach: descriptive research approach was used this study.

Research Design was used descriptive survey design

The setting for this study was the selected hospitals in government schools of Nalbari district, Assam. Proportionate number sample was selected from four schools with simple random to select 200 subjects based on predetermined criteria. Results. The finding of the study revealed that out of 200 respondents Majority (56.5%) of respondents were found in the age group between 14-15 years. Majority (60%) of respondents were male. Majority (53.5%) of respondents were from class X. Majority (76%) of respondents were Hinduism. Maximum number (72.5%) belongs to nuclear family. Majority (28%) of the respondent father’s had class X pass. Majority (23.5%) of respondent mother’s had class X pass. Majority (43%) of respondent father’s were cultivator. Majority (89%) of respondent mother’s were housewife. Majority (31.5%) of respondents had monthly income below 3,000.Highest percentage (51.5%) got information from print media. Maximum number (52%) 104 had moderately adequate knowledge on oral cancer. Area wise highest knowledge scores regarding risk factors aspect was 40.98 percent. Maximum number (46.5%) 93 had moderate prevalence of tobacco habits.

Keywords: Knowledge, habits, adolescents, oral cancer

Introduction

Cancer has overtaken heart disease as the world's top killer in 2011. Diagnoses of Cancer around the world have steadily been rising and are expected to hit 12 million this year. Global cancer deaths are expected to reach 7.9 million, according to the new report by the WHO. That means new cancer cases will likely mushroom to 27 million annually by 2030, with deaths hitting 17 million [1].

Cancer of the oral cavity, which may occur in any part of the mouth or throat. Is curable if discovered early [2]. Oral cancer may occur on the lips or anywhere within mouth, like Tongue, Floor of the mouth, buccal mucosa, hard and soft palate, Pharyngeal walls and tonsils [3]. The most common type of oral cancer is squamous cell carcinoma, 60 percent of oral cancer are well advanced by the time they are detected. [4] In smokeless tobacco users of dip, snuff, or chewing tobacco products are 50 times more likely to develop cancers of the cheek, gums and lining of the lips. In excessive consumption of alcohol, oral cancers are about 6 times more common in drinkers than in nondrinkers. The most common symptoms of oral cancer include swelling, lumps, rough spots on the lips, gums, or other areas inside the mouth, unexplained bleeding in the mouth, persistent sores on the face, neck and mouth, difficulty chewing, speaking or moving the jaw or tongue, ear pain, dramatic weight loss.
Annually, over 300,000 new cases of oral cancer are diagnosed all over the world where the majorities are diagnosed in the advanced stages III or IV. Such data make the oral cancer an important public health matter which is responsible for 3 percent to 10 percent of cancer mortality worldwide. Ethnology, socio-economic factors, lifestyle like dietary and bad habits, are considered as important predictor factors for the oral cancer incidence. Oral cancer is the most common cancer in India; as in 10 of all cancers are oral cancers. Annually 130,000 people succumb to oral cancer in India which translates into approximately 14 deaths per hour. The reason for high prevalence of oral cancer in India is primarily because tobacco is consumed in the form of gutka, quid, snuff or misri. Rising tobacco use in India, where 40 percent of the world's smokers live has contributed to this trend. In comparison, in US oral cancer represents 16 years who are in class IX and class X.

Sample

Sample Selection criteria

Inclusion criteria

1. Adolescents who are studying in class IX and X standard of government schools.
2. Adolescents willing to participate.
3. Adolescents who were present at the time of data collection.

Sample Size: In this study, the total sample size consisted of 200 adolescent’s boys and girls of the age group of 13 to 16 years who are in class IX and class X.

Research Approach: Descriptive research approach was used this study.

Research Design: To fulfill the objectives of the study, the descriptive survey design was used for collection and analysis of data

Variables under study

Dependent variable: In this study dependent variable is knowledge of oral cancer and the prevalence of tobacco habits.

Independent variable: In this study independent variable is socio-demographic variables like age, sex, education status, religion, type of family, father’s education, mother’s education, father’s occupation, mother’s occupation, family income and source of information

Research Setting: The setting for this study was the selected hospitals in

Population: The population of the present study conducted in selected four rural government schools namely Janakalyan High School Kendukundi, Natun Dehar Mouza Milan H.S.S. Khukhundi, Janata High School Burinagar and Gohain Kamal H.S. Kathalbari of Nalbari District, Assam, As all selected schools were under same block i.e Madhubpur Block.

In this study, population comprised of 304 adolescents of both class IX and class X standard within the age of 13 to 16 years from four government schools of Nalbari District, Assam

Validity: To ensure the content validity of the structured self-administered questionnaire, objectives of the study, questionnaire along with its blueprint and scoring key and criteria checklist for validation were submitted to five experts – two experts from the field of Medical surgical nursing, two experts from the field of head and neck oncology and one expert from the field of preventive oncology (Appendix-J). They were requested to evaluate and validate the prepared item for their relevancy, adequacy and appropriateness. Minor modifications are made on the basis of recommendations, suggestion of expert with consultation of guide and statistician, and then final draft was prepared.

Sampling technique

The investigator next collects the list of numbers students in selected four schools from the principals of respective schools. As all the schools had varied number of students, a proportionate number of students were randomly selected from list through lottery system to obtained predetermined sample of 200 adolescents

Development of tool

Description of the tool

It includes three sections

Section I: This section was prepared to collect socio-demographic variables of the respondents which include age, sex, education status, and religion, type of family, father’s education, mother’s education, father’s occupation, mother’s occupation, family income and source of information.

Section II: This section was prepared to assess the levels of knowledge of the respondents regarding oral cancer. It consists of total 15 multiple choice questions on risk factors, clinical sign and symptoms, complication, early detection and preventive measures. One mark is given for each response of the respective question and zero mark is given for no comment/ response. The total score of knowledge section is 20. The obtained minimum knowledge score is 3 and maximum score is 16. Out of which knowledge scores was statistically categorized as adequate (above 12), moderately adequate (9-12) and inadequate (below 9) by using the formula, as follows -

Adequate knowledge: > Mean + SD
Moderately adequate knowledge: Between Mean + SD & Mean–SD
Inadequate knowledge: < Mean–SD

Section III: This section was prepared to find out the prevalence of tobacco habits among respondents. It consists of total 24 multiple choice questions on the tobacco habits. One mark is given for each response of the respective question and zero mark is given for no comment/ response. The total score of the tobacco habits section is 54. The obtained minimum tobacco habits score is 0 and maximum score is 27. Out of which the tobacco habits scores was statistically categorized as high prevalence (above 20), moderate prevalence (5-20) and low prevalence (below 5) by using the formula, as follows -

High prevalence: > Mean + SD
Moderate prevalence: Between Mean + SD & Mean–SD
Low prevalence: < Mean–SD
Ethical consideration
- Researcher had taken formal permission from the concerned authorities.
- Only the samples who had signed the consent form are included in the study.
- The subjects were assured of confidentiality of the data obtained.
- Anonymity of the respondents was maintained by using a coded no instead of their name.

Reliability
The reliability of the knowledge section and the tobacco habits section (section II and section III) were calculated separately by using split half method, which measures the coefficient of internal consistency, Cronbach formula was used to find out the reliability of full test. The reliability coefficient of the tool was found to be \( r = 0.992 \) and \( r = 1 \) which were considered to be reliable.

Plan for data collection
- Ethical committee clearance
- Permission from the authorities of the school.
- Consent from student
- The investigator approached the parents of selected samples, informed them regarding the objectives of the study and obtained their informed consent after assuring the confidentiality of the data.
- The duration of the data collection for each sample was 10 to 15 minutes.

Data analysis and interpretation
- Items related to the background variables were be analyzed in terms of frequency and percentages.
- Scores was graded in 3 categories i.e. High prevalence, Moderate prevalence, Low prevalence
- Frequency distribution were plotted to represent the final score.
- Mean, standard deviation of the test was computed.
- The findings were documented in tables, graphs and diagrams.

Pilot study: After doing pilot study investigator found that it is feasible to carry out actual study. In these study data was done among selected samples of student. The majority of the sample (73%) had moderately adequate knowledge and only 27 percent had inadequate knowledge. The majority (63%) had moderate prevalence of tobacco habits followed by 30 percent had low prevalence and only 7 percent had high prevalence of tobacco habits. The chi-square test at 5 percent (.05) level of significance shows there is no relationship between knowledge on oral cancer and the prevalence of tobacco habits. Also chi-square test at 5 percent (.05) level of significance shows there is no relationship between knowledge on oral cancer with some selected socio-demographic variables and between the prevalence of tobacco habits with some selected socio-demographic variables except Age which was found significant.

Result
The major findings of the study were based on the objective of the study
- To assess the knowledge on oral cancer among adolescents.
- To assess the prevalence of tobacco habits among adolescents.
- To determine the relationship between knowledge on oral cancer and their tobacco habits.
- To determine the relationship between knowledge on oral cancer with some selected socio-demographic variables.
- To determine the relationship between the prevalence of tobacco habits with some selected socio-demographic variables.

Section I Demographic characteristics
Socio-Demographic characteristics Majority (56.5%) of respondents were in age group of 14-15 years, 28 percent belongs to 13-14 years and 15.5 percent were in age group of 15-16 years. Majority (60%) of respondents were male and 40 percent of respondents were female. Majority (53.5%) of respondents were from class X and 46.5 percent from class IX. Majority (76%) of respondents were Hinduism followed by 23.5 percent were Islam and only 0.5 percent were Christian, Majority (72.5%) of the respondents belongs to nuclear family and only 27.5 percent belongs to joint family, Majority (28%) of respondent’s father had class X pass, followed by 27 percent class XII pass, 18 percent below class X, 17.5 percent primary school certificate, 6 percent graduate, 2 percent illiterate and 1.5 percent post graduate.
Section II: level of knowledge on oral cancer among adolescents
The knowledge of respondents on oral cancer was assessed through structured self administered questionnaire in section II consisting of 15 items. It has maximum score 20. The content included was information on oral cancer, risk factors of oral cancer, sign and symptoms of oral cancer, prevention, early detection and complication of oral cancer. Data presented in the table 12 and figure 16, shows that, majority 52 percent (104) had moderately adequate knowledge followed by 29 percent (58) had adequate knowledge and only 19 percent (38) had inadequate knowledge.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category and score range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge on Oral Cancer</td>
<td>Adequate knowledge ≥12</td>
<td>58</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Moderately adequate knowledge 9-12</td>
<td>104</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Inadequate knowledge &lt;9</td>
<td>38</td>
<td>19</td>
</tr>
</tbody>
</table>

Section III: prevalence of tobacco habits among adolescents
Majority 46.5 percent (93) had moderate prevalence followed by 32.5 percent (65) had low prevalence and only 21 percent (42) had high prevalence.

Section IV: relationship between knowledge on oral cancer and the prevalence of tobacco habits
Chi-square ($\chi^2$) was computed in order to determine the significant relationship between the knowledge on Oral Cancer and the prevalence of tobacco habits at 0.05 levels and the results are depicted in table 16

<table>
<thead>
<tr>
<th>Calculated Chi-square value</th>
<th>Tabulated Chi-square value</th>
<th>df</th>
<th>P-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.048</td>
<td>9.49</td>
<td>4</td>
<td>0.40</td>
<td>NS</td>
</tr>
</tbody>
</table>

Significance level <0.05 NS –Non significance

Section V: Relationship between knowledge on oral cancer with selected socio-demographic selected variables:
The data presented in the table shows that the relationship of knowledge on oral cancer with Age [$\chi^2$ (4) = 7.71] P<0.05, Sex [$\chi^2$ (2) = 2.68] P<0.05 , Education status [$\chi^2$ (2) = 4.27] P<0.05 , Religion[$\chi^2$ (4) =2.87] P<0.05, Type of family [$\chi^2$ (2) =0.38] P<0.05 , Father’s education [$\chi^2$ (12) =7.50] P<0.05 , Mother’s education [$\chi^2$ (12) =17.12] P<0.05 , Father’s occupation [$\chi^2$ (10) =5.82] P<0.05, Mother’s occupation [$\chi^2$ (8) =7.01] P<0.05 , Family income per month [$\chi^2$ (8) =1.66] P<0.05 and Source of information [$\chi^2$ (6) =9.89] P<0.05 were found not significant. The investigator accepted the null hypotheses. Hence it is interpreted that the knowledge on oral cancer were independent of selected socio-demographic variables

Section VI: relationship between the prevalence of tobacco habits with selected socio-demographic variables
The data presented in the table shows that the relationship of prevalence of tobacco habits with Age [$\chi^2$ (4) = 6.48] P<0.05, Sex [$\chi^2$ (2) =40.45] P<0.05 , Education status [$\chi^2$ (2) =.73] P<0.05 , Religion[$\chi^2$ (4) =8.14] P<0.05, Type of family [$\chi^2$ (2) =.291] P<0.05 , Father’s education [$\chi^2$ (12) =11.99] P<0.05 , Mother’s education [$\chi^2$ (12) =15.06] P<0.05 , Father’s occupation [$\chi^2$ (10) =16.05] P<0.05, Mother’s occupation [$\chi^2$ (8) =4.50] P<0.05 , Family income per month [$\chi^2$ (8) =8.40] P<0.05 and Source of information [$\chi^2$ (6) =9.13] P<0.05 were found not significant except sex of the respondents. The investigator accepted the null hypothesis excluding sex. Hence it is interpreted that the prevalence of tobacco habits were independent of the selected socio-demographic variables except sex which was found significant. Thus, null hypothesis is rejected in case of sex of the respondents thereby research hypothesis is accepted in case of sex.

Conclusion
The findings clearly suggest that majority of the respondents had moderately adequate knowledge on oral cancer and moderate prevalence of tobacco habits. There was no significant relationship between knowledge on oral cancer and the prevalence of tobacco habits. Also there was no significant relationship between knowledge on oral cancer and the prevalence of tobacco habits with some selected socio-demographic variables like age, sex, education status, religion, type of family, father’s education, mother’s education, father’s occupation, mother’s occupation family income and source of information

Discussion
Ravishankar TL, Nagarajappa R. (2009) conducted a study on “Factors attributing to initiation of tobacco use in adolescent students of Moradabad, (UP) India”. Two-stage sampling was used to identify 590 adolescents (boys 454 and girls 136 in number) aged 12-15 years from four senior secondary schools. The response towards tobacco, and its use, was assessed through structured questionnaires. The result showed about 88 (19.4%) of the boys and 14 (10.4%) of the girls have tried to use tobacco once or more before this study i.e. experimental tobacco use. The commonest age group was 14-15 years during which the subjects first tried to use tobacco. Out of 14 girls, 10 (71.4%) and among 88 boys, 50 (65.9%) tried smokeless forms of tobacco like gutka, pan masala, Khaini etc. Four (26.6%) girls and 30 (44.1%) boys had tried smoking which included cigarette/beedi or pipes.

Limitations
The limitations of the present study were:
- The study was limited to only 200 samples.
- The study was conducted to only the selected institutions of Nalbari district, Assam.
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