

A Study to Assess the Factors Associated With Oral Cancer among Cancer Patients Attending at Cancer Units of Selected Hospitals of Bagalkot

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Abstract:-

Aims: The aims of this study are as follows: (1) To assess the factors associated with oral cancer among cancer patients. (2) To find out the association between factors associated with oral cancer with their selected socio-demographic variables.

Materials and Methods: This was descriptive study with 200 subjects, selected through convenient sampling technique. Descriptive case-control design was used. Data was collected by structured questionnaires. Data was analyzed by using descriptive and inferential statistics in terms of mean median range and by distribution, chi-square test for association.

Results: In interview schedule, out of 200 subjects, 100 case group and 100 control group, highest percentage (45%) of oral cancer occurs due to consumption of tobacco, 17% are suffer oral cancer due to consumption of tobacco with smoking, 9% occur to smoking and 4% due to Alcohol consumption. Findings related to factors associated with oral cancer. The overall findings reveal that Percentage wise distribution of oral cancer patients attending in cancer units of selected hospitals of Bagalkot. Scores reveals that out of 200 subjects, (100 case group and 100 control group) highest percentage (45%) of oral cancer patients suffer from tobacco use, 17% of tobacco with smoking, least percentage of alcohol consumption, lack of oral hygiene, consumption of hot beverages, radiation, Betel nuts and some are family history of oral cancer.

Conclusion: The study proved that structured questionnaires on assess the factors associated with oral cancer among cancer patients was scientific, logical and cost effective strategy.

Keywords:- Oral Cancer Case Group, Control Group With Factors Associated With Oral Cancer.

I. INTRODUCTION

Oral cancer appears as a growth or sore in the mouth that does not go away. Oral cancer, which includes cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palate, sinuses, and pharynx (throat), Mouth cancers form when cells on the lips or in the mouth develop changes (mutations) in their DNA.¹ The accumulating abnormal mouth cancer cells can form a tumor. With time they may spread inside the mouth and on to other areas of the head and neck or other parts of the body, Risk factors for the development of oral cancer include, Smoking. Cigarette, cigar, or pipe smokers are six times more likely than nonsmokers to develop oral cancers, Smokeless tobacco users. 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, Excessive consumption of alcohol.² Oral cancers are about six times more common in drinkers than in nondrinkers, Family history of cancer, Excessive sun exposure, especially at a young age, Human papillomavirus (HPV). Certain HPV strains are etiologic risk factors for Oropharyngeal Squamous Cell Carcinoma (OSCC), most treatment may include surgery, radiation or chemotherapy.³ Some may involve hormone therapy, immunotherapy or other types of biologic therapy, or stem cell transplantation.⁴ Cancers are the most common cause of death in adults. Oral cancer (OC) is a broad term that includes various malignant diseases that are present in oral tissues, which are found on the lip, floor of the mouth, buccal mucosa, gingiva, palate, or in the tongue. The majority (84%–97%) of OCs are squamous cell carcinoma (SCC) which arise from pre existing “potentially malignant” lesions or more often from normal appearing epithelium.⁵

Oral cancer affects around 14.1 million people, making it one of the most prevalent cancers in the world. Developing countries, especially those from the South Asian region, have a higher burden of oral cancer compared to developed countries. With an estimated increase of 13,000

new cases each year, oral cancer is the most common cancer among men and second only to breast cancer among women in Pakistan. It also has the second highest cancer related mortality rates in the country (IARC, 2012). Oral cancer thus warrants immediate public health attention and evidence based concerted efforts for its control and prevention in Pakistan. Research into non-communicable oral disease such as oral cancer is high on the agenda of the World Health Organization's (WHO) "Oral health program"⁶

In India Gutkas, bidis and cigarettes, tobacco is consumed in many forms. India ranks second only to China in total number of tobacco users. Unfortunately, India also has the world's highest incidences of oral cancer and contributes to fourth world wide deaths from the disease. While individual of low socioeconomic status generally bear the brunt of the disease, new trends are emerging including increasing incidence rates among younger adults who have traditionally had very low rates of oral cancer. Although overall tobacco use has declined in India, the prevalence remains high for bidi smokeless tobacco such as gutkas, which are more likely to cause oral cancer. Oral cancer affects the people from the lower socioeconomic status of society and people in rural area due to a higher exposure to risk factors such as the use of tobacco habit is 8.4 times higher than that of patients who did not have that habit. Oral cancer incidence depends on both qualitative and quantitative points of view.⁷

The global cancer burden is estimated to have risen to 18.1 million new cases and 9.6 million deaths in 2018. One in 5 men and one in 6 women worldwide develop cancer during their lifetime, and one in 8 men and one in 11 women die from the disease. Worldwide, the total number of people who are alive within 5 years of a cancer diagnosis, called the 5-year prevalence, is estimated to be 43.8 million. The increasing cancer burden is due to several factors, including population growth and ageing as well as the changing prevalence of certain causes of cancer linked to social and economic development. This is particularly true in rapidly growing economies, where a shift is observed from cancers related to poverty and infections to cancers associated with life styles more typical of industrialized countries. Global patterns show that for men and women combined, nearly half of the new cases and more than half of the cancer deaths worldwide in 2018 are estimated to occur in Asia, in part because the region has nearly 60% of the global population. Europe accounts for 23.4% of the global cancer cases and 20.3% of the cancer deaths, although it has only 9.0% of the global population. The Americas have 13.3% of the global population and account for 21.0% of incidence and 14.4% of mortality worldwide. In contrast to other world regions, the proportions of cancer deaths in Asia and in Africa (57.3% and 7.3%, respectively) are higher than the proportions of incident cases (48.4% and 5.8%, respectively), because these regions have a higher frequency of certain.⁸

Hence with the aim to assess the factors associated with oral cancer among cancer patients attending at cancer units of selected hospitals of Bagalkot was planned.

➤ *Aims*

The aims of this study are as follows:

- To assess the factors associated with oral cancer among cancer patients.
- To find out the association between factors associated with oral cancer with their selected socio-demographic variables.

II. MATERIALS AND METHODS

This was descriptive study with 200 subjects, selected through convenient sampling technique. Descriptive case-control design was used. Data was collected by structured questionnaires. Data was analyzed by using descriptive and inferential statistics in terms of mean median range and by distribution, chi-square test for association.

III. RESULTS

➤ *Section 1: Description of socio-demographic variables (Table 1)*

Percentage wise distribution of sample according to age of the clients. In case group, 58% of clients were in age group 46—50 years, 32% clients were in age group 41—45 years, 7% of clients were in age group 51 years and above, 3% of clients were in age group of 31—40 years and none of are 0%. In control group, 61% of clients were in age group 46—50 years, 38% clients were in age group 41—45 years, 1% of clients were in age group 31—40 and 51 and above are none.

Percentage wise distribution of respondents according to gender of the patients. In case group there were 93% male and 7% Female in case group. In control group There were 97% male and 3% Female. percentage wise distribution of respondents according to their Religion. In case group 77% are Hindu's, 15% were muslim's and 8% are Christian's, and others are non (%). In control group 82% are Hindu's, 16% were muslim's and 2% are Christian's, and others were none(%). percentage distribution of respondents according to their family income. In case group 48% had family income is Below 15,000, 25% family income in between 15,001 to 20,000, 19% of family income were in between 20,001 to 25,000, and 85 of family income are between 25,001 to 30,000. In control group 57% had family income is Below 15,000, 19% family income in between 15,001 to 20,000, 12% of family income were in between 20,001 to 25,000, and 6% of family income are between 25,001 to 30,000, and 6% are 30,001 and above. percentage wise distribution of respondents based on their marital status. In case group 100% are married. In control group there also 100% are married percentage wise distribution of respondents according to their family types. In case group there were 88% of families are nuclear family and 12% of families are Joint families. In control group were 93% of families were belongs to nuclear family and 7% of families were belongs to Joint families. percentage wise distribution

of respondents according to their previous knowledge on oral cancer. In case group there are 16% of people have previous knowledge regarding oral cancer and 84% of people don't have previous knowledge. In control group there are also 23% of people have previous knowledge regarding oral cancer and 77% of people don't have previous knowledge. percentage wise distribution of respondents according to their sources of information regarding oral cancer. In case group 11% of people were know about the oral cancer by mass media, 3% of people were know by the Health professional and 2% are Friends/Relative/Neighbors and 84% were not know about oral cancer. In control group 13% of people are know about mass media, 9% by Health professionals, 7% are friends/relatives/neighbors, 71% are don't have any knowledge.

➤ *Section 2: Description of risk factors associated with oral cancer.(Table 2)*

1. *Tobacco:*

Percentage wise distribution of study subjects according to their factors associated with consumption habits. In case group 45(45%) clients consume Tobacco. In control group 37(37%) of clients consuming Tobacco.

2. *Tobacco with smoking:*

Percentage wise distribution of study subjects according to their factors associated with consumption of tobacco with smoking. In case group 17(17%) clients consume Tobacco with Smoking. In control group 24(24%) of clients consuming Tobacco with smoking.

3. *Tobacco with Alcohol:*

Percentage wise distribution of study subjects according to their factors associated with consumption habits. In case group 06(06%) clients consume Tobacco with Alcohol. In control group 04(04%) of clients consuming Tobacco with Alcohol.

4. *Smoking:*

Percentage wise distribution of study subjects according to their factors associated with habits of smoking. In case group 09(09%) clients consume Tobacco. In control group 06(06%) of clients consuming Tobacco.

5. *Smoking with Alcohol:*

Percentage wise distribution of study subjects according to their factors associated with consumption habits. In case group 08(08%) clients consume Smoking with alcohol. In control group 04(04%) of clients consuming smoking with alcohol.

6. *Alcohol:*

Percentage wise distribution of study subjects according to their factors associated with consumption habits. In case group 04(04%) clients consume Alcohol. In control group 03(03%) of clients consuming Alcohol.

7. *Hot Beverages:*

Percentage wise distribution of study subjects according to their factors associated with consumption hot beverages. In case group 01(01%) clients consume Alcohol. In control group 02(02%) of clients consuming Alcohol.

8. *Lack of oral Hygiene:*

Percentage wise distribution of study subjects according to their factors associated with consumption lack of oral hygiene. In case group 02(02%) clients consume Alcohol. In control group 01(01%) of clients consuming Alcohol.

9. *Radiation:*

Percentage wise distribution of study subjects according to their factors associated with exposure to radiation . In case group 01(01%) clients consume Alcohol. In control group 01(01%) of clients consuming Alcohol.

10. *Betel Nuts:*

Percentage wise distribution of study subjects according to their factors associated with consumption of Betel Nuts. In case group 03(03%) clients consume Alcohol. In control group 04(04%) of clients consuming Alcohol.

11. *Family History of Oral cancer:*

Percentage wise distribution of study subjects according to their factors associated with family history of cancer. In case group 04(04%) clients consume Alcohol. In control group 03(03%) of clients consuming Alcohol.

➤ *Section 3: Association of socio demographic variables with factors associated with oral cancer.(Table 3&4)*

➤ *Age in years :*

The calculated value is 26.25 (p value 0.000028) it is more than table value (9.49) which show that, there is a significant association between Age of the oaral cancer clients hence hypothesis is accepted.

➤ *Gender :*

The calculated value is 0.9204 (p value 0.3373), it is less than table value (3.84) which show that, there is no significant association between gender and oaral cancer, hence the hypothesis is rejected.

➤ *Religion :*

The calculated value is 7.49 (p value 0.057) it is less than table value (7.81) which show that there is no significant association between religion and oral cancer, hence the hypothesis is rejected.

➤ *Family income :*

The calculated value is 4.242 (p value is 0.3742) it is less than table value (9.49) which show that there is no significant association between family income and oral cancer, hence the hypothesis is rejected.

➤ *Marital status :*

The calculated value is 0 (p value is 1) it is less than table value (3.84) which show that there is no significant association between Marital status and oral cancer, hence the hypothesis is rejected

➤ *Family type :*

The calculated value is 16.00(p value is 0.000036) it is more than table value (3.84) which shows that there is a significant association between family type and oral cancer, hence the hypothesis is accepted

➤ *Previous knowledge:*

The calculated value is 16.225 (p value is 0.000056) it is more than table value (3.84) which show that there is a significant association of previous knowledge and factors of oral cancer hence the hypothesis is accepted

➤ *Sources of information:*

The calculated value is 17.584 (p value is 0.000537) it is more than table value (7.81) which show that there is a significant association of sources of information and factors of oral cancer, hence hypothesis is accepted.

Sr No.	Socio Demographic Factors	Character	Cases group(n-100)		Control group(n-100)	
			F	%	F	%
1	Age	1) Below 30 years	0	0%	0	0%
		2) 31—40 years	3	3%	1	1%
		3) 41—45 years	32	32%	38	38%
		4) 46—50 years	58	58%	61	61%
		5) 51 years and above	7	7%	00	00%
2	Gender	1) Male	93	93%	97	97%
		2) Female	7	7%	3	3%
3	Religion	1) Hindu	77	77%	82	82%
		2) Muslim	15	15%	16	16%
		3) Christian	8	8%	2	2%
		4) Others	0	0%	0	0%
4	Family Income	1) Below 15,000	48	48%	57	57%
		2) 15,001—20,000	25	25%	19	19%
		3) 20,001—25,000	19	19%	12	12%
		4) 25,001—30,000	8	8%	6	6%
		5) 30,001 and Above	0	0%	6	6%
5	Marrital Status	1) Married	100	100%	100	100%
		2) Unmarried	0	0	0	0%
6	Family Type	1) Nuclear	88	88%	93	93%
		2) Joint	12	12%	7	7%
7	Previous Knowledge	1) Yes	16	16%	23	23%
		2) No	84	84%	77	77%
8	Source of Information	1) Mass Media	11	11%	13	13%
		2) Health professional	3	3%	9	9%
		3) Friends/relatives/Neighbors	2	2%	7	7%
		4) None	84	84%	71	71%

Table 1 frequency and percentage of cancer patients according to their socio-demographic variables. N=200

SI NO	FACTORS	CASE GROUP (n-100)		CONTROL GROUP (n-100)	
		Frequency	%age	Frequency	%age
1	Tobacco	45	45%	37	37%
2	Tobacco with smoking	17	17%	24	24%
3	Tobacco with alcohol	06	06%	04	04%
4	Smoking	09	09%	06	06%
5	Smoking with alcohol	08	08%	04	04%
6	Alcohol	04	4%	03	03%
7	Hot beverages	01	01%	02	02%
8	Lack of oral hygiene	02	02%	01	01%
9	Radiation	01	01%	01	01%
10	Betel nut	03	03%	04	04%
11	Family history	04	04%	03	03%

Table 2: Percentage wise distribution of assess the factors associated with oral cancer among cancer patients and non cancer clients/control group. N=200

SI	Demographical variables	Df	Chi square	Table value	P value	Significance
1	Age in years	4	26.25	9.49	0.000028	S
2	Gender	1	0.9204	3.84	0.3373	NS
3	Religion	3	7.49	7.81	0.057	NS
4	Family income	4	4.242	9.49	0.3742	NS
5	Marital status	1	0	3.84	1	NS
6	Types of family	1	16.00	3.84	0.000036	S
7	Previous Knowledge	1	16.225	3.84	0.000056	S
8	Source of information	3	17.584	7.81	0.000537	S

Table 3: Association between factors associated with oral cancer with their selected socio-demographic variables in case group N=100

SI	Demographic variables	Df	Chi square	Table value	P value	significance
1	Age in years	4	79.144	9.49	0.00001	S
2	Gender	1	8.487	3.84	0.003576	S
3	Religion	3	83.94	7.81	0.00001	S
4	Family income	4	0	9.49	1	S
5	Marital status	1	0	3.84	1	NS
6	Family income	1	15.377	3.84	0.33015	S
7	Previous Knowledge	1	16.89	3.84	0.00001	S
8	Source of information	3	18.148	7.81	0.00001	S

Table 4 Association between factors associated with oral cancer with their selected socio-demographic variables in control group N=100

IV. DISCUSSION

After reviewing many studies related to oral cancer which factors was causing oral cancer, The studies influenced me to conduct this present study as follows.

cases and controls study conducted by AbdoulHossainMadani, MadhurimaDikshit on the self-reported age in years at the time of data collection (interview) matched very well between, ranging from 18–80 years with average age being 52 years ($P = 0.551$ by Students' test). The majority of subjects were above the age 40 years ($P = 0.780$). The gender distribution was also same in cases and controls with sex ratio being 2.5:1 and 2.6:1 respectively ($P = 0.800$ by Chi-Square test). Similarly, the place of residency was found to be same for the groups (cases and controls), 73% vs. 75% for urban and semi-urban and 27% vs. 25% for rural residence respectively. Monthly household income was significantly different between cases and controls. Majority of cases had lower household income <5000/- Rs ($P < 0.001$). In terms of religion, majority (~90%) of subjects (both cases and controls) belonged to Hindu Religion. While marital status has shown that the categories of married and others (widowed, divorced and separated) in both cases and controls was not significant different ($P = 0.198$ and $P = 0.430$ respectively). However, the difference was significant among cases and controls ($P < 0.014$) for unmarried category.⁹

Oliveira J, Andrade M, Souza Teles Santos C A D, Oliveira M C A on A descriptive study conducted to associated factors of oral cancer majority of patients had tobacco as a more associated factor (45 in case group and 37 in control group) and followed by tobacco with smoking (17 in case group and 24 in control group), alcohol, smoking these are moderate causative factors and radiation lack of oral hygiene, betel nut these are the least associated factors of oral cancer. Consumption of more than 20 cigarettes per day [OR = 6.64; 95%CI 2.07 - 21.32; $p \leq 0.001$], an excessive alcohol consumption [OR = 3.25; 95%CI 1.03 - 10.22; $p \leq 0.044$], and the synergistic consumption of tobacco and alcohol [OR = 9.65; 95%CI 1.57 - 59.08; $p \leq 0.014$] are the most important risk factors for oral cancer.¹⁰

V. CONCLUSION

After thorough analysis of the data, it is understood that only 45% people have cancer from tobacco, tobacco with smoking (17%), Smoking is causing (9%), hot beverages (1%), Lack of oral hygiene (2%), Radiation (1%), Betel nuts (3%) and Family history of cancer (4%).

RECOMMENDATIONS

- Chewing of tobacco, smoking and drinking alcohol is a significant risk factor for oral cancer.
- A study can be conducted to find out the oral cancer patients among cancer patients.

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