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A study to assess the risk factors of oral cancer among adult patients

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Abstract
Background: Oral cancer is one of the most common and an important public health problem in India. It has high mortality rate of 9 % throughout the world and it is 4th common cause of death in India In India because of cultural, ethnic, geographic factors and varying life style factors like consumption of tobacco, alcohol, standard of living etc there is high prevalence of premalignant lesions i.e 26.6 % in male and 10.0 % in females. The risk of malignant transformation is about 4 – 6 %. So detecting oral cancer in its premalignant stage becomes very important.
Material and Methods: for the present study a Case Control design with Descriptive approach was used. 78 cases adult patients with oral cancer attending opd at Krishna Hospital, and 78 controls without cancer were selected by Purposive sampling technique. After getting ethical clearance, permission from concern authority, and consent from the sample data was collected. The data obtained were analyzed in terms of objectives of the study using descriptive and inferential statistics.
Result Result reveals that 53.85% are using Misheri once, twice and thrice daily. 42.31% are using cigarette. 14.10% are using bidi. 71.79% has betal chewing habit. 42.31% are using pan masala. 2.56% are having habit of using areca. 1.28% is having habit of using khaini. 34.62% are addicted to ghutka. 21.79% are sleeping with tobacco quid in the mouth. 58.97% are having the habit of using alcohol.
Conclusion: Overall, the findings of this study reflect a significant need of increasing awareness among the population about the risk factors of cancer similar studies with larger sample size and dedicated programs and regular screening camps can be a huge step in improving their lives

Keywords: Risk factors, oral cancer, adult patients.

Introduction
Oral cancer or mouth cancer, a subtype of head and neck cancer, is any cancerous tissue growth located in the oral cavity. It may arise as a primary lesion originating in any of the oral tissues, by metastasis from a distant site of origin, or by extension from a neighbouring anatomic structure, such as the nasal cavity. Alternatively, the oral cancers may originate in any of the tissues of the mouth, and may be of varied histologic types: teratoma, adenocarcinoma derived from a major or minor salivary gland, lymphoma from tonsillar or other lymphoid tissue, or melanoma from the pigment-producing cells of the oral mucosa. There are several types of oral cancers, but around 90% are squamous cell carcinomas, originating in the tissues that line the mouth and lips. Oral or mouth cancer most commonly involves the tongue. It may also occur on the floor of the mouth, cheek lining, gingiva (gums), lips, or palate (roof of the mouth). Most oral cancers look very similar under the microscope and are called squamous cell carcinoma, but less commonly other types of oral cancer occur, such as Kaposi's sarcoma [1].
It is important to note that around 75 percent of oral cancers are linked to modifiable behaviors such as tobacco use and excessive alcohol consumption. Other factors include poor oral hygiene, irritation caused by ill-fitting dentures and other rough surfaces on the teeth, poor nutrition, and some chronic infections caused by bacteria or viruses. Smoking and other tobacco use are associated with about 75 percent of oral cancer cases, caused by irritation of the mucous membranes of the mouth from smoke and heat of cigarettes, cigars, and pipes. Tobacco contains over 60 known carcinogens, and the combustion of it, and by-products from this process, is the primary mode of involvement. Use of chewing tobacco or snuff causes irritation from direct contact with the mucous membranes. Tobacco use in any form

by itself, and even more so in combination with heavy alcohol consumption, continues to be an important risk factor for oral cancer [2].

In India because of cultural, ethnic, geographic factors and varying life style factors like consumption of tobacco, alcohol, standard of living etc there is high prevalence of premalignant lesions i.e 26.6 % in male and 10.0 % in females. The risk of malignant transformation is about 4 – 6 %. So detecting oral cancer in its premalignant stage becomes very important.

Title of the study

"A Study to Assess the Risk Factors of Oral Cancer among Adult Patients Admitted in Krishna Hospital Karad**"**

Objectives of the study

1. To assess the risk factor of oral cancer
2. To determine the association between risk factor and oral cancer

Hypotheses

1. H_0 : There will not be significant association between risk factor and oral cancer
2. H_1 : There will be significant association between risk factor and oral cancer

Material and methods

For the present study case control design with descriptive approach was used. In this study the samples i.e. 78 patients diagnosed with oral cancer cases and 78 samples of same age and sex matched as controls were selected by purposive sampling technique. An instrument is the device used to collect data. Based on the objectives of the study, a structured questionnaire with an interview schedule was prepared in order to assess the risk factors of oral cancer. It consists of two sections.

Section A: Deals with demographic data of subjects It includes age, gender, occupation, residential background, education, housing, type of family and monthly family income.

Section B: Deals with and risk factors of oral cancer which consist of modifiable and non – modifiable risk factors. Prior permission was obtained from the medical director, director of nursing services, HOD's of oncology department of Krishna hospital, Karad to collect information, An informed consent was also obtained from the respondents after proper explanation about the purpose, usefulness and implications of the study and with an assurance about maintaining the confidentiality of their responses and information given. The data was collected from the concerned departments (oncology). The data obtained were analyzed in terms of objectives of the study using descriptive and inferential statistics.

Result

Section 1: description of samples according to demographic characteristics by frequency and percentage

Table 1: Distribution of cases and controls according to demographic variables

N = 156

Sr. no.	Socio demographic variables	Cases		Controls	
		Frequency	Percentage	Frequency	Percentage
1	Age (years)				
	30 – 39	9	11.53	9	11.53
	40 – 49	18	23.07	18	23.07
	50 – 59	19	24.35	19	24.35
	60 – 69	21	26.92	21	26.92
	70 & Above	11	14.1	11	14.1
2	Gender				
	Male	60	76.92	60	76.92
	Female	18	23.07	18	23.07
3	Educational Status				
	No formal education	12	15.38	26	15.38
	Primary school	29	37.17	28	35.89
	High school	30	38.46	19	24.35
	Higher secondary	5	6.41	3	3.84
	Graduate	1	1.28	2	2.56
	Post Graduate and above	1	1.28	0	0
4	Occupation				
	Industrial worker	20	25.64	12	15.38
	Health sector	10	12.82	2	2.56
	IT	0	0	0	0
	Not working	13	16.66	13	16.66
	Others	35	44.87	51	65.38
5	Residential Background				
	Urban	22	28.2	9	11.53
	Rural	56	71.79	69	88.46
6	Housing				
	Kacha	49	62.82	56	71.79
	Pucka	29	37.17	21	26.92
	Villa	0	0	1	1.28
	Flat	0	0	0	0
7	Type of Family				
	Nuclear	42	53.84	49	62.82
	Joint	36	46.15	29	37.17
8	Monthly Family Income				

	< 1600	9	11.53	3	3.84
	1601 – 4809	16	20.51	10	12.82
	4810 – 8009	40	51.28	49	62.82
	8010 – 12019	10	12.82	13	16.66
	12020 – 16019	2	2.56	3	3.84
	16020 – 32049	1	1.28	0	0
	> 32050	0	0	0	0

Majority of the cases (21) 26.92% and controls (21) 26.92% were between in the age group of 60 – 69 years. Majority of cases (60) 76.92% and controls (60) 76.92% were male patients. Majority of cases (30) 38.46% were having high school education and controls (28) 35.89% were having primary school education. Majority of cases (35) 44.87% and controls (51) 65.38% were in other category which includes farmer, painter and driver. Majority of cases (56) 71.79% and controls (69) 88.46% were from the rural area. Majority of cases (49) 62.82% and controls (56) 71.79% were living in kacha house. Majority of cases (42) 53.84% and controls (49) 62.8% are from nuclear family. Majority of cases (40) 51.28% and controls (49) 62.8% had monthly family income of Rs. 4810 – 8009.

Section 2: Analysis of data related to assessment of risk factors of oral cancer

Table 2: Assessment risk factors based on non modifiable risk factors

Sr. No.	Risk factors	Cases		Controls	
		Frequency	Percentage	Frequency	Percentage
1	Family History	2	2.56	3	3.84
2	Past History	0	0	1	1.28

The table depicts that among controls (2) 2.56% and among cases (3) 3.84% are having family history of oral cancer and (1) 1.28% from control are having past history of cancer

Table 3: Assessment risk factors based on modifiable risk factors

Sr. no.	Risk factors	Cases		Controls	
		F	%	F	%
	- Oral Hygiene				
	Using brush to clean teeth	36	46.15	59	75.64
	Cleaning tongue vigorously with tongue cleaner	10	12.82	2	2.56
	Use of mouth wash	4	5.13	22	28.21
	Dental problem	15	19.23	11	14.10
	Self examination of oral cavity	5	6.41	18	23.08
	Repeated throat infection	6	7.69	2	2.56
	Continuous irritation of gum	18	23.08	6	7.69
	Dental check up	7	8.97	10	12.82
	Use of Misheri	42	53.85	25	32.05
2	smoking tobacco				
	Cigarette smoking	33	42.31	4	5.13
	Bidi smoking	11	14.10	2	2.56
	Betal chewing	56	71.79	21	26.92
	Pan masala	33	42.31	12	15.38
	Areca	2	2.56	0	0.00
	Khaini	0	0.00	1	1.28
	Ghutka	27	34.62	3	3.85
	Sleep with tobacco quid	17	21.79	0	0.00
3	Alcohol	46	58.97	17	21.79
	Diet				
	Vegetarian	11	14.10	24	30.77
	Non-vegetarian	67	85.90	54	69.23
	Deep fried food	34	43.59	15	19.23
	Spicy food	62	79.49	49	62.82
	Sunlight	54	69.23	41	52.56

Majority of controls (59) 75.64% are using brush to clean the teeth. Among cases (10) 12.82% and controls (2) 2.56% were cleaning tongue vigorously with tongue cleaner. In controls (22) 28.21% are using mouth wash to clean the teeth. Among the cases (15) 19.23% are having dental problem. Majority of the controls (18) 23.08% do self examination of oral cavity yearly and monthly. Among the controls (6) 7.69% and among case (2) 2.56% used to get repeated throat infection yearly. Majority of controls (18) 23.08% used to get continuous irritation of gum. In controls (10) 12.82% used to do dental check up yearly. Majority of cases (42) 53.85% are using Misheri once, twice and thrice daily.

Among the cases (33) 42.31% and (4) 5.13% are using cigarette. Majority of cases (11) 14.10% and cases (2) 2.56% are using bidi.

Majority 71.79% (56) of the cases and (21) 26.92% of the control group has betal chewing habit. Majority of (33) 42.31% of the cases and (12) 15.38% of the control group are using pan masala. 2.56% (2) of the cases are having habit of using areca. 1.28% (1) of the control is having habit of using khaini. Majority of (27) 34.62% of the cases and (3) 3.85% of the controls are addicted to ghutka. 21.79% (17) of the cases are sleeping with tobacco quid in the mouth.

Majority of cases 30.77% (24) and 30.77% (24) of controls are vegetarians. 85.90% (67) of cases and 69.23% (54) of controls are non-vegetarians. Among the cases 43.59% (34) and 19.23% (15) of controls were eating deep fried food. Majority of cases are 79.49%m(62) and 62.82%(49) controls were taking spicy foods.

Majority of cases is 69.23% (54) and 52.56% (41) are exposed to sunlight

Section 3: Analysis of data related to association between risk factors and oral cancer.

Table 4: Results of Fisher's exact test for association between risk factors and oral

N = 156

Sr. no.	Risk factor	P value	Odds ratio	Level of significance
1	Family History	1.000	0.6579	NS
2	Past History	1.000	0.3291	NS
3	Cleaning tongue vigorously with tongue cleaner	0.0315	5.588	S*
4	Dental problem	0.5199	1.45	NS
5	Repeated throat infection	0.2762	3.167	NS
6	Continuous irritation of gum	0.0134	3.6	S*
7	Dental check up	0.6085	0.6704	NS
8	Use of Misheri	0.0094	2.473	S*
9	Cigarette smoking	<0.0001	13.567	S*
10	Bidi smoking	0.0173	6.239	S*
11	Betal chewing	<0.0001	6.909	S*
12	Pan masala	0.0003	4.033	S*
13	Areca	0.4968	5.131	NS
14	Khaini	1.000	0.3291	NS
15	Ghutka	<0.0001	13.235	S*
16	Sleep with tobacco quid	<0.0001	44.675	S*
17	Alcohol	<0.0001	5.158	S*
18	Non-vegetarian	0.0204	2.707	S*
19	Deep fried food	0.0018	3.245	S*
20	Spicy food	0.0333	2.293	S*
21	Sunlight	0.0486	2.030	S*

The data presented in Table No. 9 depicts the P value for association between risk factors and oral cancer and odds ratio measuring relative risk of developing oral cancer. The findings are as follows:

- Since P value corresponding to family history oral cancer, past history of other cancer, dental problem, repeated throat infection, dental check up, areca, and khaini are greater than 0.05. So there is no significant association between these risk factors and oral cancer.
- The P value corresponding to Cleaning tongue vigorously with tongue cleaner, Continuous irritation of gum, Use of Misheri, Cigarette smoking, Bidi smoking, Betal chewing, Pan masala, Ghutka, Sleep with tobacco quid, Alcohol, Non-vegetarian, Deep fried food, Spicy food, Sunlight are less than 0.05. So there is significant association between the risk factors and oral cancer among cases.

Discussion

In present study assessment risk factors based on modifiable risk factors - oral hygiene result shows that Majority of controls (59) 75.64% are using brush to clean the teeth. Among cases (10)12.82% and controls (2) 2.56% were cleaning tongue vigorously with tongue cleaner. In controls (22) 28.21% are using mouth wash to clean the teeth. Among the cases (15) 19.23% are having dental problem. Majority of the controls (18) 23.08% do self examination of oral cavity yearly and monthly. Among the controls (6) 7.69% and among case (2) 2.56% used to get repeated throat infection yearly. Majority of controls (18) 23.08% used to get continuous irritation of gum. In controls (10) 12.82% used to do dental check up yearly. Majority of cases (42) 53.85% are using Misheri once, twice and thrice daily.

Among the cases (33) 42.31% and (4) 5.13% are using cigarette. Majority of cases (11) 14.10% and cases (2) 2.56% are using bidi. Majority 71.79% (56) of the cases and (21) 26.92% of the control group has betal chewing habit. Majority of (33) 42.31% of the cases and (12) 15.38% of the control group are using pan masala. 2.56% (2) of the cases are having habit of using areca. 1.28% (1) of the control is having habit of using khaini. Majority of (27) 34.62% of the cases and (3) 3.85% of the controls are addicted to ghutka. 21.79% (17) of the cases are sleeping with tobacco quid in the mouth.

Similarly the study conducted by Natasha Azhar [1], Maheen Sohail, on Risk factors of Oral cancer- A hospital based case control study result shows that habits among cases and controls. Among the cases, 42% of the patients consumed smokeless tobacco alone and in combination with other products. 8% smoked cigarettes and 17.7% smoked cigarettes in combination with other products, 12.9% from cases presented without habits. those participants who smoked alone, without any other habit (17% of the respondents) only 23.8% were cases and 76.2% were controls. On the contrary, respondents who used cigarette with other habit(s) (11.3%) encompassed 92.8% cases and mere 7.2% of controls [3].

Conclusion

Overall, the findings of this study reflect a significant need of increasing awareness among the population about the risk factors of cancer. Similar studies with larger sample size and dedicated programs and regular screening camps can be a huge step in improving their lives.

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