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Oral Cancer Awareness among Auxiliary Personnel of Dental College in Bhopal City, India

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Abstract

Background: Oral cancer prevalence is high globally. Dental auxiliary staff who work aside the dentist is the first to come in contact with service seeker. Hence awareness regarding oral cancer in consequences is an essential modality in these personnel's. **Methodology:** This study was conducted to evaluate the awareness among dental auxiliary staff about oral cancer of two dental colleges of Bhopal city. Sampling frame included the dental auxiliary staff from the two dental colleges. A structured questionnaire was used for collection of data. The collected data were coded, and a statistical analysis was carried out by using Statistical Package of Social Science (SPSS 20). **Result:** In this study, it was observed 52% females were aware of examining patients mouth during admission. 50% Females advice to examined tissues of cheek, tongue and palate while assessing oral cancer. 52.1% females opinion of risk factor for oral cancer would be tobacco chewing, tobacco smoking, having alcohol and spicy food. **Conclusion:** The study conducted among dental auxiliary staff to assess the awareness regarding oral cancer which will help in early diagnosis of disease and prevent any further complication.

Keywords: Oral cancer; Dental auxiliaries; Risk factors; Oral cavity; Dental colleges; Knowledge

Introduction

Oral cancer or mouth cancer a type of head &neck cancer is a cancerous tissue growth located in the oral cavity. It may arise as a primary lesion originating in any of the tissue in the mouth, by metastasis from a distant site of origin or by extension from a neighboring anatomic structure, such as the nasal cavity . There are several types of oral cancer, but around 90% are squamous cell carcinoma, originating in the tissue that line the mouth & lips, oral or mouth cancer most commonly involves the tongue. It may also occur on the floor of the mouth, cheek lining, gingiva, lips or palate. The signs and symptoms of oral cancer normally occurring on the tongue, lip or other mouth areas include usually small swellings, most often pale colored, may be dark or discolored. Early sign may be a white patch (leukoplakia) or a red patch (erythroplakia) on the soft tissue of the mouth .Usually painless initially. May develop a burning sensation or pain when the tumor is advanced .Behind the wisdom tooth & even behind the ear. Additionally symptoms that may be associated with this disease include tongue problems .Swallowing difficulty, mouth sores pain and paraesthsia are late symptoms.

Risk factor that predispose a person to oral cancer have been identified in epidemiological studies India being member of international cancer genome consortium is leading efforts to map oral cancer complete genome .It is important to note that around 75% of oral cancer are linked to modifiable behavior such as tobacco use and excessive alcohol consumption Other factors include poor oral hygiene, irritation caused by ill-fitting dentures and other rough surface on the teeth, poor nutrition, some chronic infections caused by bacteria or viruses . If oral cancer is diagnosed in its earliest stages treatment is generally very effective. In India where such practices are common, oral cancer represents up to 40% of all cancers, compared to just 4% in the UK [1]. India continues to reports the highest prevalence of cancer globally with 75,000 to 80,000 new cases of such cancer reported every year. In India, tobacco alone responsible for 1.5 lakhs cancer, 4.2 million heart disease, 3.7million lung disease. The country is the oral cancer capital of the world because of rampant habit of chewing. The health ministry owns statics shows that over 65% of cancer in

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India can be attributed to tobacco use another set of data suggest of annual 5.6 million deaths in India. As many as 2,500 people die every day due to tobacco related disease in India [2].

A dental auxiliary is a person who is given responsibility by a dentist so that he or she can help the dentist render dental care, but who is not himself or herself qualified with a dental degree. The duties undertaken by dental ancillaries range from simple tasks such as sorting instrument to relatively complex procedures which form part of the treatment of patients. So it is necessary to aware dental auxiliary staff about oral cancer and its consequences [3]. Hence the study was conducted to assess the awareness of oral cancer among auxiliaries employed in dental institutes.

Aim

To assess awareness of oral cancer among dental auxiliaries staff.

Methodology

This study was conducted to evaluate the awareness among dental auxiliary staff about oral cancer of Bhopal city.

Source of Data were the two dental college of Bhopal city. Sampling frame included the dental auxiliary staff from the two dental colleges and sample design was convenience sampling.

Ethical clearance was taken from the People's Dental Academy, Bhopal. Permissions for conducting this study was taken from the respective department of each college.

Inclusion criteria

1. Subject including dental auxiliary staff of two dental colleges.
2. Subjects present on the day of the survey were nurses, hygienist, and technicians.

Exclusion criteria:

1. Subjects absent on the day of survey
2. Subjects who were not interested in survey.

A structured questionnaire was used for collection of data which will include the following variables:

(a) Examining a patient mouth on admission

(b) Tissue examining for assessing oral health

(c) Changes within mouth associated with oral cancer

(d) Awareness among risk factor

(e) Diagnosis of oral cancer from clinical appearance

(f) Advice given to suspected patient

(g) Oral health knowledge and attitudes,

(h) Training regarding oral health care

The questionnaires were completed by the subjects themselves. The questionnaire was originally formulated in English.

The collected data were coded, and a statistical analysis was carried out by using Microsoft Excel 2003 and Statistical Package of Social Science (SPSS 20). Description and analysis of the data was carried out by frequency distributions (Table 1).

Result

The frequency distribution of importance of examining patients mouth on admission In this females had a better awareness regarding importance of examining patients mouth during admission (52.1%) females were aware compared to males (39.6%). Among the Females, (50%) advised the examination of tissues of cheek, tongue and palate while assessing oral cancer and (33.3%) males had same opinion. 31.2% females had opinion that changes in the oral cavity like non healing ulcer, white patches and mobility of tooth has association with oral cancer and 21.9% males responded the same way..

On evaluating the opinion regarding risk factor for oral cancer 52.1% females suggested that it could be due to tobacco chewing,

Gender	Awareness regarding Importance of examining patient's mouth during admission			Chi-Square Degree of Freedom	P Value
	Yes n(%)	No n(%)	Total N(%)		
Male	19 [39.6%]	1 [2.1%]	20 [41.7%]	X^2=0.499 Df=1	P=0.480
Female	25 [52.1%]	3 [6.2%]	28 [58.3%]		

Table 1(A): Frequency distribution of the importance of examining patient's mouth on admission according to gender among the study subjects.

Gender	Tissues examined during oral cancer				Chi-square degree of freedom	Pvalue
	Cheek n(%)	Tongue n(%)	All of the above n(%)	Total N(%)		
Male	3 (6.2%)	1 (2.1%)	16 (33.3%)	20 (41.7%)	X^2=0.823 Df=2	P=0.663
Female	2 (4.2%)	2 (4.2%)	24 (50%)	28 (58.3%)		

Table 1(B): Frequency distribution of examining the tissues involved in oral cancer according to gender among study subject.

Gender	Change associate with oral cancer					Chi –square value	P value
	Non healing ulcer n (%)	White patches n(%)	All of the above n(%)	Others n(%)	Total N(%)		
Male	4 (8.3%)	4 (8.3%)	11 (22.9%)	1 (2.1%)	20 (41.7%)	X^2=1.123 Df=3	P value=0.772
Female	8 (16.7%)	3 (6.2%)	15 (31.2%)	2 (4.2%)	28 (58.3%)		

Table 1(C): Frequency distribution of changes within mouth associate with oral cancer according to gender among study subjects.

Gender	Awareness regarding risk factora for oral cancer				Chi –square Degree of freedom	P value
	Tobacco chewing n(%)	Spicy food n(%)	All n(%)	Total N(%)		
Male	4 (8.3%)	0 (0.0%)	16 (33.3%)	20 (41.7%)	X^2=2.375 Df=2	P value=0.305
Female	2 (4.2%)	1 (2.1%)	25 (52.1%)	28 (58.3%)		

Table 1(D): Frequency distribution of risk factors for oral cancer according to gender among study subjects.

Gender	Advice to patient regarding risk factors		Chi–square Degree of freedom	P value
	Yes n(%)	Total N(%)		
Male	20 (41.7%)	20 (41.7%)	X^2=0.487 Df=2	P=0.817
Female	28 (58.3%)	28 (58.3%)		

Table 1(E): Frequency distribution regarding the advice to patient about risk factor for oral cancer according to gender among study subjects.

Gender	Awareness regarding clinical appearance of oral cancer					Chi –square Degree of freedom	P value
	Very confident n(%)	Confident n(%)	Unsure n(%)	Very unsure n(%)	Total N(%)		
Male	1 (2.1%)	8 (16.7%)	10 (20.8%)	1 (2.1%)	20 (41.7%)	X^2=0.547 Df=3	P=0.908
Female	1 (2.1%)	11 (22.9%)	13 (27.1%)	3 (6.2%)	28 (58.3%)		

Table 1(F): Frequency distribution regarding the diagnosing oral cancer from clinical appearance according to gender among study subjects.

Gender	Awareness regarding patient's referral for oral cancer				Chi –square Degree of freedom	P value
	Plastic surgery n(%)	Oral &maxillofacial n(%)	Other n(%)	Total N(%)		
Male	1 (2.1%)	19 (39.6%)	0 (0.0%)	20 (41.7%)	X^2=2.106 df=2	P=0.349
Female	3 (6.2%)	23 (47.9%)	2 (4.2%)	28 (58.3%)		

Table 1(G): Frequency distribution regarding patient referral for oral cancer according to gender among study subjects.

Gender	Awareness regarding knowledge for oral cancer			Chi –square Degree of freedom	P value
	Yes n(%)	No n(%)	Total N(%)		
Male	11 (22.9%)	9 (18.8%)	20 (41.7%)	X^2=1.160 Df=1	P=0.281
Female	11 (22.9%)	17 (35.4%)	28 (58.3%)		

Table 1(H): Frequency distribution of knowledge regarding for oral cancer according to gender among study subjects.

Gender	Training received for oral health care			Chi –square Degree of freedom	P value
	Yes n(%)	No n(%)	Total N(%)		
Male	12 (25%)	8 (16.7%)	20 (41.7%)	X^2=1.371 Df=1	P=0.242
Female	12 (25%)	16 (33.3%)	28 (58.3%)		

Table 1 (I): Frequency distribution of any training received for oral health care according to gender among study subjects.

Gender	Further training for oral cancer				Chi –square Degree of freedom	P value
	None n(%)	Yes n(%)	No n(%)	Total N(%)		
Male	0 (0.0%)	17 (35.4%)	3 (6.2%)	20 (41.7%)	X^2=2.374 Df=2	P=0.305
Female	3 (6.2%)	22 (45.8%)	3 (6.2%)	28 (58.3%)		

Table 1(J): Frequency distribution of further training for oral cancer according to gender among Study subjects.

tobacco smoking, having alcohol and spicy food and 33.3% males had the same response. 58.3% of the females advised to the patient regarding risk factor for oral cancer and 41.7% of the males had the same advice. Among total female participants, 27.1% females were unsure of the diagnoses of oral cancer from clinical appearance while 20.8% males had same view. On evaluating the factors suspected for oral cancer, 47.9% female referred a patient to oral and maxillofacial department for prevention while 39.6% males had same opinion. 35.4% females felt that they had sufficient knowledge about prevention and detection of oral cancer and 22.9% males felt that they had no sufficient knowledge. 33.3% females received training regarding oral health care previously whereas 25% males had not received any training. 45.8% females liked to get further training regarding oral cancer and 35.4% males had same opinion. None of these values will found to be statistically significant.

The frequency distribution of importance of examining patient's mouth on admission was analyses. In this nurses (35.4%), technician (45.8%), hygienist (4.2%), chair side assistant (4.2%), camp coordinator (2.1%) were aware of examining patient's mouth during admission. Nurses (35.4%), technician (37.5%), hygienist (4.2%), and chair side assistant (4.2%), camp coordinator (2.1%) advised to examine tissues of cheek, tongue and palate while assessing oral cancer. On evaluating the association with oral cancer nurses (20.8%), technician (27.1%), hygienist (4.2%), camp coordinator (2.1%) showed that non healing ulcer, white patches, mobility of tooth changes takes place within mouth whereas chair side assistant (4.2%) showed that non healing ulcer is only change that takes place within mouth. In opinion of nurses (37.5%), technician (37.5%), hygienist (4.2%), chair side assistant (4.2%), camp coordinator (2.1%) risk factor for oral cancer were

tobacco chewing, tobacco smoking, having alcohol and spicy food. The Nurses (41.7%), technician (47.9%), hygienist (4.2%), chair side assistant (4.2%), camp coordinator (2.1%) advised to patients regarding risk factor for oral cancer. Nurses (18.8%), hygienist (4.2%), camp coordinator (2.1%), chair side assistant (2.1%) were unsure on diagnosed oral cancer from clinical appearance whereas technician (22.9%) were confident on diagnosed it. Nurses (33.3%), technician (43.8%), hygienist (4.2%), camp coordinator (2.1%), chair side assistant (4.2%) referred a patient to oral and maxillofacial department when there was a uncertainty about Oral cancer. Nurses (27.1%), technician (18.82%), hygienist (4.2%), chair side assistant (4.2%) felt that they had not sufficient knowledge about prevention and detection of oral cancer and camp coordinator (2.1%) felt that they had sufficient knowledge. Nurses (20.8%), hygienist (2.1%), chair side assistant had not received any training regarding oral health care previously whereas technician (25%), camp coordinator (2.1%) had received training previously. The nurse (33.3%), technician (37.5%), hygienist (4.2%), and chair side assistant (4.2%), camp coordinator (2.1%) liked to get further training regarding oral cancer. None of these values will found to be statistically sufficient (Table 2).

Occupation	Awareness regarding Importance of examining patient's mouth during admission			Chi-Square Degree of Freedom	P Value
	Yes n(%)	No n(%)	Total N(%)		
Nurse	17 (35.4%)	3 (6.2%)	20 (41.7%)	X^2=2.096 Df=4	P=0.718
Technician	22 (45.8%)	1 (2.1%)	23 (47.9%)		
Hygienist	2 (4.2%)	0 (0.0%)	2 (4.2%)		
Chair side assistant	2 (4.2%)	0 (0.0%)	2 (4.2%)		
Camp coordinator	1 (2.1%)	0 (0.0%)	1 (2.1%)		

Table 2(A): Frequency distribution of the importance of examining patient's mouth on admission according to occupation among the study subjects.

occupation	Tissues examined during oral cancer				Chi-square degree of freedom	P value
	Cheek n(%)	Tongue n(%)	All of the above n(%)	Total N(%)		
Nurse	1 (2.1%)	2 (4.2%)	17 (35.7%)	20 (41.7%)	X^2=3.298 Df=8	P=0.914
Technician	4 (8.3%)	1 (2.1%)	18 (37.5%)	23 (47.9%)		
Hygienist	0 (0%)	0 (0%)	2 (4.2%)	2 (4.2%)		
Chair side assistant	0 (0%)	0 (0%)	2 (4.2%)	2 (4.2%)		
Camp coordinator	0 (0%)	0 (0%)	1 (2.1%)	1 (2.1%)		

Table 2(B): Frequency distribution of examining the tissues involved in oral cancer according to occupation among study subject.

Occupation	Change associate with oral cancer					Chi-square degree of freedom	P value
	Non healing ulcer n(%)	White patches n(%)	All of the above n(%)	Others n(%)	Total N(%)		
Nurse	5 (10.4%)	3 (6.2%)	10 (20.8%)	2 (4.2%)	20 (41.7%)	X^2=9.434 Df=12	P=0.665
Technician	5 (10.4%)	4 (8.3%)	13 (27.1%)	1 (2.1%)	23 (47.9%)		
Hygienist	0 (0%)	0 (0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Chair side assistant	2 (4.2%)	0 (0%)	0 (0%)	0 (0%)	2 (4.2%)		
Camp coordinator	0 (0%)	0 (0%)	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(C): Frequency distribution of changes within mouthassociate with oral cancer according to occupation among study subjects.

Occupation	Awareness regarding risk factora for oral cancer				Chi-square degree of freedom	P value
	Tobacco chewing n(%)	Spicy food n(%)	All n(%)	Total N(%)		
Nurse	1(2.1%)	1 (2.1%)	18 (37.5%)	20 (41.7%)	X^2=4.807 Df=8	P=0.778
Technician	5 (10.4%)	0 (0%)	18 (37.5%)	23 (47.9%)		
Hygienist	0 (0%)	0 (0%)	2 (4.2%)	2 (4.2%)		
Chair side assistant	0 (0%)	0 (0%)	2 (4.2%)	2 (4.2%)		
Camp coordinator	0 (0%)	0 (0%)	1 (2.1%)	1(2.1%)		

Table 2(D): Frequency distribution of risk factors for oral cancer according to occupation among study subjects.

Occupation	Advice to patient regarding risk factors		Chi-square degree of freedom	P value
	Yes n (%)	Total N (%)		
Nurse	20 (41.7%)	20 (41.7%)	X^2=3.719 Df=8	P=0.558
Technician	23 (47.9%)	23 (47.9%)		
Hygienist	2 (4.2%)	2 (4.2%)		
Chair side assistant	2 (4.2%)	2 (4.2%)		
Camp coordinator	1 (2.1%)	1(2.1%)		

Table 2(E): Frequency distribution regarding the advice to patient about risk factor for oral cancer according to occupation among study subjects.

Occupation	Awareness regarding clinical appearance of oral cancer					Chi-square degree of freedom	Pvalue
	Very confident n(%)	Confident n(%)	Unsure n(%)	Very unsure n(%)	Total N(%)		
Nurse	1 (2.1%)	8 16.7%)	9 (18.8%)	2 (4.2%)	20 (41.7%)	X^2=9.370 Df=12	P=0.671
Technician	1 (2.1%)	11 (22.9%)	10 (20.8%)	1 (2.1%)	23 (47.9%)		
Hygienist	0 (0%)	0 (0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Chair side assistant	0 (0%)	0 (0%)	1 (2.1%)	1 (2.1%)	2 (4.2%)		
Camp coordinator	0 (0%)	0 (0%)	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(F): Frequency distribution regarding the diagnosing oral cancer from clinical appearance according to occupation among study subjects.

Occupation	Awareness regarding patient's referral for oral cancer				Chi-square degree of freedom	Pvalue
	Plastic surgery n(%)	Oral &maxillofacial n(%)	Other n(%)	Total N(%)		
Nurse	2 (4.2%)	16 (33.3%)	2(4.2%)	20 (41.7%)	X^2=3.543 Df=8	P=0.896
Technician	2 (4.2%)	21 (43.8%)	0 (0%)	23 (47.9%)_		
Hygienist	0 0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Chair side assistant	0 (0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Camp coordinator	0 (0%)	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(G): Frequency distribution regarding patient referral for oral cancer according to occupation among study subjects.

Occupation	Awareness regarding knowledge for oral cancer			Chi-square degree of freedom	Pvalue
	Yes n(%)	No n(%)	Total N(%)		
Nurse	7 (14.6%)	13 (27.1%)	20 (41.7%)	X^2=7.606 Df=4	P=0.107
Technician	14 (29.2%)	9 (18.8%)	23 (47.9%)		
Hygienist	0 (0%)	2 (4.2%)	2 (4.2%)		
Chair side assistant	0 (0%)	2 (4.2%)	2 (4.2%)		
Camp coordinator	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(H): Frequency distribution of knowledge regarding for oral cancer according to occupation among study subjects.

Occupation	Training received for oral health care			Chi-square degree of freedom	Pvalue
	Yes n(%)	No n(%)	Total N(%)		
Nurse	10 (20.8%)	10 (20.8%)	20 (41.7%)	X^2=3.043 Df=4	P=0.551
Technician	12 (25%)	11 (22.9%)	23 (47.9%)		
Hygienist	1 (2.1%)	1 (2.1%)	2 (4.2%)		
Chair side assistant	0 (0%)	2 (4.2%)	2 (4.2%)		
Camp coordinator	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(I): Frequency distribution of any training received for oral health care according to occupation among study subjects.

Occupation	Further training for oral cancer				Chi-square degree of freedom	Pvalue
	None n(%)	Yes n(%)	No n (%)	Total N(%)		
Nurse	2 (4.2%)	16 (33.3%)	2 (4.2%)	20 (41.7%)	X^2=2.306 Df=8	P=0.970
Technician	1 (2.1%)	18 (37.5%)	4 (8.3%)	23 (47.9%)		
Hygienist	0 (0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Chair side assistant	0 (0%)	2 (4.2%)	0 (0%)	2 (4.2%)		
Camp coordinator	0 (0%)	1 (2.1%)	0 (0%)	1 (2.1%)		

Table 2(J): Frequency distribution of further training for oral cancer according to occupation among Study subjects.

Discussion

The present study was conducted among the dental auxiliaries associated with a dental college of Bhopal City, India.

In this study, it was observed that 52.1%females had awareness regarding importance of examining patients mouth on admission compared with 39.6% males. This was similar to study conducted by McCaan MF in their study in which 58%of respondents reported examining regularly for oral cancer [4].

50% females examining cheek, tongue, palate involved in oral cancer compared with 33.3% males. This was similar to study conducted by LM Carter in their study 74% of females examining tongue [5].

52.1% females had awareness regarding risk factors for oral cancer compared with 33.3% males. This was similar to study conducted by Chukwu SO in their study 52% of respondents had awareness regarding risk factors for oral cancer [6].

31.2% females said non healing ulcer, white patches, mobility of tooth are changes associate with oral cancer as compared with 22.9%males. This was similar to study conducted by Chukwu SO in their study 78% of study subjects knew changes associated with oral cancer [6].

45.8% female's wants further training regarding oral cancer compared with 35.4% males. This was similar to study conducted by LM Carter in their study 74% requested for further training [7].

35.4% nurses had awareness regarding importance of examining patients mouth on admission .This was similar to study conducted by LM Carter in their study in which 49% performed this task regularly [5].

35.7% nurses examining cheek, tongue, palate involved in oral cancer. This was similar to study conducted by LM Carter in their study 74% of nurses examining tongue [5].

37.5% nurses had awareness regarding risk factors for oral cancer. This was similar to study conducted by S Turner in their study 25.7% of auxiliaries had awareness regarding risk factors for oral cancer [8].

20.8% nurses said non healing ulcer, white patches; mobility of tooth is changes associate with oral cancer. This was similar to study conducted by LM Carter their study 25% nurses identified oral cancer changes [5].

33.3% nurses want further training regarding oral cancer. This was similar to study conducted by LM Carter in their study 74% nurses requested for further training [5].

Conclusion

The study conducted among dental auxiliary staff to assess the awareness regarding oral cancer which will help in early diagnosis of disease and prevent any further complication. The study revealed an appreciable awareness among auxiliary staff of dental college and they had very promising positive attitude towards continuing educational program regarding oral cancer.

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