

Knowledge Awareness and Practice regarding Oral Hygiene and Its Consequences among Dental Patient attending OPD in Tertiary Care Hospital in Delhi

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Abstract: The present study was conducted among 200 adult dental patients attending dental clinic in a tertiary care hospital in Delhi. The Study found high percentage (70%) used both a toothbrush & toothpaste for oral hygiene, About two-fifth (42 %) of the subjects stated 'tooth decay' as a result of not cleaning teeth regularly, followed by bad breath (27%) and gum disease or pyorrhea (23.5%). It was found that highest 42% visited to hospital due to pain followed by bleeding of gums (21.5%), dental cavities (21%) and swelling (6%)., Nearly half (46 %) of the subjects blamed smoking/pan chewing/gutkha/other tobacco products for having deleterious effects on dental health. Majority (28%) were smokers, followed by betel nut chewing (17.5%) and alcohol (13.5%). More than two fifth (42%) of respondents were aware that tobacco causes oral cancers. Significant association of knowledge & practices of oral hygiene, knowledge about oral cancer etc were found.

Key Words: Awareness, Oral hygiene practices, Oral cancer prevention, Quality of dental treatment, Socio-demographic factors

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I. Introduction

Health and disease are related to the socioeconomic setting. Oral diseases such as dental caries, periodontal disease, tooth loss, oral mucosal lesions and orodental trauma, oropharyngeal cancer, HIV-related oral disease are major health problem world wide. Dental caries and periodontal problems are the two most common oral health problems in human being.¹

High relative risk of oral disease relates to socio cultural determinants such as poor living condition; low education; lack of tradition, beliefs and culture in support of oral health. Besides above, oral hygiene practices, sugar conception as well as tobacco use and excessive alcohol consumption affect oral health negatively. Such behavior not only affects oral health status negatively as expressed by clinical measures but also impact on quality of life.¹

Oral cancers, has one of the highest incidences in India constituting around 12% of all cancers in men and 8% of all cancers among women. It has been estimated that 83,000 new oral cancer cases occur here each year. Moreover, in India, oral cancer accounts for approximately 2,00,000 deaths annually worldwide and 46,000 deaths occurring particularly in India².

A cross-section descriptive study to assess and compare knowledge on gingivitis and oral hygiene practices and awareness of oral cancer among rural and urban population attending OPD in a tertiary care hospital in Delhi. Information on knowledge on causes, signs, symptoms, as well as on oral hygiene practices was collected from 200 patients. It was found that the population not having adequate knowledge and practice on oral hygiene.³ According to recent data released by the Global Adult Tobacco Survey-GATS,2010 more than one third (35%) of adults in India use tobacco in some form or the other,163.7 million are users of only smokeless tobacco, 68.9 million only smokers, and 42.3 million users of both smoking and smokeless tobacco⁴.

The popular use of the smokeless tobacco product called gutkha, renders its population and especially its youth to a greater risk of developing oral sub-mucous fibrosis, a pre-malignant disease resulting in increased incidence of oral cancer in younger patients. Risk factors for oral cancers include smoking, alcohol use, smokeless tobacco products, and HPV (human papilloma virus) infections, with smoking and alcohol having synergistic effects. Smokeless tobacco products and betel quid with or without tobacco are the major risk factors for oral cavity cancer in India and other neighboring countries².

Majority of oral cancers have been observed to arise from long-standing pre-malignant lesions especially in high incidence areas. The national and international guidelines stress the importance of early detection of oral cancer. Delayed presentation of oral cancer is mainly due to lack of awareness of the public about oral cancer and its associated risk factors which also results in increased morbidity and reduced survival rates. Early detection, which comprises screening of asymptomatic populations and increasing awareness of public regarding early signs and symptoms, increases the probability of cure ⁵.

The National Oral Health Program (NOHP) affirms that oral health is essential for general health and well-being. The National Oral Health Care Program was launched as a pilot project in 1999, to reduce the increasing morbidity due to oro-dental problems in the country. The main focus of this program is primary prevention through a generation of awareness. Apart from these initiatives; the problem of oral cancers are dealt with under the National Cancer Control Program at the national level. The strategies for the eleventh five-year plan include oral health education, formulation of a Basic Package on Oral Health (BPOC) for the country, and its implementation, manpower and infrastructure development and capacity building, and monitoring of dental public health, as well as research, through the National, State, and District Oral Health Cells ⁶.

The present study was conducted with the objectives of assessing the knowledge, awareness and practices with regard to oral hygiene among patients attending the dental OPD and to find out any association with their socio-demographic profiles relating to oral hygiene practices.

II. Materials And Methods

The data was collected using pre-tested structured interview schedule from 200 randomly selected patients during September 2017 from Dental O.P.D in Tertiary care hospital in Delhi after obtaining permission from the concerned authorities. Patients were informed about the purpose of the study and their voluntary participation. The collected data were first manually edited before entering into SPSS. Univariate and Bivariate tables were generated according to objectives of the study. Chi-square test was applied to find out association with socio-demographic factors with outcome variables.

III. Results

Background of Patients

The age of the 200 studied subjects ranged from 16 to 67 years, with a mean age of 40.75 years . The majority of the study population, that is, 57.89%, belonged to the age group of 20 to 40 years. Males formed 60.5% of the population, 77.68% belonged to the rural areas, 40% were skilled workers for wages, and 14.18% were illiterate. 40% respondents were having income less than Rs 10,000/ per month.

Knowledge and Practice about Oral Hygiene

Most of the study subjects, that is, 70.50% used both a toothbrush & toothpaste and 62.5% only toothpaste, followed by the manual use of toothpaste or tooth powder (20%) as a method of cleaning their teeth. Approximately one-third of the subjects (40%) cleaned their teeth twice daily, while 56% cleaned them once daily. Ash and salt are still used by 18% of respondents. Findings are presented in table 1.

Table no 1: Practice of oral hygiene among patients attending dental OPD in the hospital

S.No	Responses regarding oral hygiene	Frequency (%)
1.	What do you use to clean your teeth? Tooth brush Datun Finger Any other	141(70.5%) 44(22%) 8(4%) 7(3.5%)
2.	What do you use with the toothbrush to clean teeth? Tooth paste Tooth powder Ash, Salt Others	125(62.5%) 40(20%) 8(4%) 27(13.5%) 0 (0%)
3	How many times do you clean your teeth? Once Twice No Reply	112(56%) 80 (40%) 8 (4%)
4.	How many times do you use mouth wash? Once Twice More than twice Not used	88(44%) 20(10%) 4(2%) 88(44%)

Respondents were further asked about importance of good oral hygiene. About two-fifth (42 %) of the subjects stated ‘tooth decay’ as a result of not cleaning teeth regularly, followed by bad breath (27%) and gum disease or pyorrhea (23.5%). Only one third could explain impact of dental decay on general health. Findings are presented in table 2.

Table no 2: Table showing knowledge about good oral hygiene practices among patients

S.No	Knowledge about good oral hygiene practices	Frequency (%)
1.	Regular teeth brushing results in reduction of? Dental cavities Pyorrhea Bad breath Oral cancer	84(42%) 47(23.5%) 54(27.0) 15(7.5%)
2.	What are the possible reasons for foul smell, pyorrhea, paleness, etc.? Smoking Chewing tobacco, pan masala Alcohol Sweets and others	56(28%) 92(46%) 20(10%) 32(16%)
3.	Do you know about the dental caries /decayed teeth? Yes No Don't know	145(72.5%) 54(27%) 1(0.5%)
4.	Knowledge that brushing teeth can prevent dental decay? Yes No Don't know	124(62%) 76(38%) 0(0%)
5.	Awareness about impact of dental decay on general health? Yes No	66(33%) 134(67%)

Moreover, 46 % of the subjects blamed smoking/pan chewing/gutkha/other tobacco products for having deleterious effects on dental health. Excessive sweet, alcohol, and cold drinks were also cited as harmful food items by 32% and 20% of the subjects, respectively.

Nearly 37.6% of participants were of the opinion that lack of proper brushing and flossing can cause bad breath whereas 22% did not know the reason and 40% answered it wrongly. Approximately 86% of the participants agreed that discoloration of tooth is the consequence of tobacco use and the difference was statistically significant when compared between male and female After assessing oral practices and problems, patients were asked about their treatment seeking behavior and findings are presented in table 3.

Table 3: Dental treatment seeking behavior among patients

S. No	Variable	Frequency (%)
1.	How frequently do you visit to dentist? Regularly	30(15%)
2.	Reason for visiting dentist? Due to pain Due to dental cavities Due to swelling Due to bleeding gums Due to mobility of teeth	85(42.5%) 39(12%) 12(6%) 25(12.5%) 9(4.5%)
3.	Did you take any treatment before coming to hospital? Self medication. Applied clove oil. Visited unqualified doctor Visited private dentist	104(52%) 32(16%) 28(14%) 36(18%)
4.	How many times, did you visit dentist during last three months? 0 times 1 times 2 times 3 times More than 3 times	48(24%) 56(28%) 28(14%) 40(20%) 28(14%)
5.	Why did you not visit dentist*? Not required Afraid of instruments High cost of treatment	43(21.5) 46(23) 11(5.5)

* Multiple responses

It was found that highest 42% visited to hospital due to pain followed by bleeding of gums (21.5%), dental cavities (21%) and swelling (6%). Merely 15% visited hospital regularly for check-up. More than two third (68%) patients took self medication before coming to hospital may be because of high cost of dental treatment .Just 18% could visit private dentist. Barring 24% patients, rest visited one or more times to dentists during last three months.

TOBACCO CONSUMPTION AMONG PATIENTS

In our study, it was found that majority (28%) were smokers, followed by betel nut chewing (17.5%) and alcohol (13.5%). The preference of consuming alcohol was lower (13%) than the habit of tobacco both type (45.5%). About 60% took tobacco in any form during last six month. Maximum users were chewing tobacco (36%) followed by smoking (20%). Currently users of tobacco were 36% and majority of them were using paan masala (55%).

Table 4: Consumption of tobacco, alcohol etc among patients attending dental OPD

S.No	Consumptions of tobacco among patients	Frequency (%)
1	Do you have any of the habits below? Smoking habit Betel nut chewing habit Alcohol (drinking Habit) None of the above	56(28%) 35(17.5%) 27(13.5%) 82(41%)
2	Have you used any form of tobacco in the past six months? Yes No	134(67%) 66(33%)
3	If, yes, what form of tobacco do you currently use? Cigarettes Cigar Pipe Chew None	40(20%) 4(2%) 4(2%) 72(36%) 80(40%)
4.	Do you currently use smokeless tobacco products daily? Yes No	72(36%) 128(64%)
5.	Which type smokeless tobacco do you have? Pan masala Gutkha Pan chewing Supari No habit	110(55%) 56(28%) 29(11%) 8(4%) 4(2%)

The table 5 describes the knowledge and awareness about consequences of tobacco consequences. More than two fifth (42%) of respondents were aware that tobacco causes oral cancers. Around two fifth (38%) were also aware that heavy smoking and use of smokeless tobacco can impair oral health and cause cancer.

Table no5: Knowledge about problem associated with tobacco consumption among patients

S.No	Knowledge about consequences of tobacco consumption	Frequency(%)
1	Do you know smokeless form of tobacco can cause mouth cancer? No habit Yes No	84(42%) 80(40%) 36(18%)
2.	Is smokeless or smoking form is linked with any dental problems? No Response Yes No	92(46%) 76(38%) 32(16%)
3.	Can smoking cause heart disease? Yes No	72(36%) 128(64%)
4.	Can smoking cause lung cancer? Yes No	108(54%) 92(46%)
5.	If yes, are you willing to quit the/those habits? No habit Yes No No Response	76(38%) 100(50%) 24(12%)

A very high percentage (64%) population doesn't know about smoking cause heart disease. May be due to the exposure in hospital environment 42% patient were willing to quit tobacco but 12% did not try.

KNOWLEDGE ABOUT ORAL CANCER AND ITS TREATMENT

The knowledge was average (55%) about oral cancer. Around half (24%) patients were able to identify all risk factors like tobacco, alcohol, pan chewing and other poor oral health. Squamous cell carcinoma is the most common type of oral cancer. A high percentage (66%) informed white or red patch in mouth and non healing ulcer was correctly identified as most common manifestation of oral cancer. However, 62% told that oral cancer is curable.

Table no 6: Knowledge about oral cancer and associated risk factors among dental patients

S.No.	Variable	Frequency(%)
1.	Have you heard about oral cancer?	
	Yes	110(55%)
2.	No	90(45%)
	If yes, indicate the causes of oral cancer?	
	Smoking	46(23%)
	Alcohol	8(4%)
	Pan chewing	83(41%)
	Poor oral health	16(8%)
3.	All the above	48(24%)
	Do you know symptoms about oral cancer?	
4.	Yes	116(58%)
	No	84(42%)
6.	If yes, indicate which are those?	
	White or red patch in mouth	60(30%)
	Raised white and red patches in mouth	20(10%)
	Non healing ulcers in mouth	52(26%)
	Don't know	68(34%)
6.	Is oral cancer a curable disease?	
	Yes	124(62%)
	No	76(38%)

After assessing awareness about symptoms of oral cancer, awareness about its diagnosis and treatment were enquired and presented in the table 7. Half of the population knows about diagnosis of cancer done clinically by doctors and 42% know treatment option of oral cancer and 36 % were knowing biopsy as one of the diagnostic technique. 58% of patients were knowing one of the many treatment options.

Table no7: Knowledge toward diagnosis and treatment of oral cancer among dental patients

S.No	Variable	Frequency(%)
1.	Do you know about any diagnostic/screening tests which is done for oral cancer?	
	Yes	100(50%)
2.	No	100(50%)
	If yes, what are the diagnostic tests which is done for oral cancer?	
	Clinical examination	84(42%)
	Dental-Xray	36(18%)
	CT scan and MRI	8(4%)
3.	Biopsy	72(36%)
	If yes, what are the treatment options available for oral cancer?	
	Surgery	80(40%)
	Radiotherapy	8(4%)
	Chemotherapy	20(10%)
	Combination therapy	8(4%)
	Don't know	84(42%)

Table 8 presents awareness about prevention of oral cancer among patients attending dental OPD. It was found that 30% of patients felt that cancer is contagious disease. More than half (52%) expressed that quitting tobacco can save for oral cancer 38% says early detection can save life for years.

Table no 8: Knowledge about prevention of oral cancer among dental patient

S.No	Knowledge regarding prevention of oral cancer	Frequency(%)
1.	Is oral cancer a contagious disease?	
	Yes	60(30%)
2.	No	140(70%)
	How long will the patient survive after being diagnosed and treated for oral cancer?	
	Some weeks	16(8%)
	Some months	

	Some years Many years	48(24%) 76(38%) 60(30%)
3.	Early detection of mouth cancer can improve chances of cure? Yes No	104(52%) 96(48%)
4	Changes in lifestyle like quitting smoking and avoiding tobacco use in any form can reduce the risk of development of cancer? Yes No	104(52%) 96(48%)

ORAL HYGIENE PRACTICES AND TREATMENT SEEKING BEHAVIOUR

Out of the study subjects, 38.39% (86/224) had ‘good oral hygiene practices’ and the rest of the 61.61% had ‘not so good oral hygiene practices’. Moreover, females, literates, urban residents, and higher socioeconomic status (class I) study subjects had more ‘good practices’ compared to males, illiterates, rural residents, and lower socioeconomic status (class V), respectively; and the differences appeared to be statistically significant. People from the upper socioeconomic status (Class I) had 2.03 times better practices than people of other socioeconomic status (Class II, III, IV, and V combined). A majority of the subjects (16.14%) acquired information on oral health from the television, followed by advice from the dentist (35.71%), friends (40.97%), and so on (table not presented). It was found that 24% patient visited quacks may be due to lack of awareness before coming to the tertiary care hospital. Further, 20% visited dental hygienist, 16% to dentist, 20% to doctor/physician and rest 30% did not visit anywhere but managed at own level by home remedies (table not presented).

We also asked opinion about treatment received in the RML Hospital, Delhi. 58% of patients got relieved by treatment in the Dr R M L Hospital and 58% informed to receive advice on oral hygiene and oral cancer. 60% were satisfied with treatment, 20-26% rated hospital from excellent to good and only 10% rated as poor. 66% of patients rated hospital facilities and counselling as good and above, highest (44%) received information on oral hygiene and oral cancer from family members friends but only 36% received information from doctors and health workers etc (table 9).

Table no 9: Opinion about quality of treatment received in the hospital

S.No	Variable	Frequency(%)
1.	Did you got relieved that treatment? Yes No	116(58%) 84(42%)
2.	Are you satisfied with the treatment here in RML hospital? Yes No Somewhat	120(60%) 26(12%) 56(18%)
3.	Did you get any advice on oral hygiene and oral cancer etc.? Yes No	116(58%) 84(42%)
4.	Overall, how would rate the treatment did you receive in hospital? EXCELLENT VERY GOOD GOOD, FAIR POOR	40(20%) 40(20%) 52(26%) 48(24%) 20(10%)
5.	Overall, how would you rate doctors counseling in hospital for quitting your tobacco habit? EXCELLENT VERY GOOD GOOD, FAIR POOR	40(20%) 40(20%) 52(26%) 48(24%) 20(10%)
6,	What are different sources of information on oral hygiene/oral cancer etc Friends and family members TV, Radio, News Paper Doctor, Health Workers, Community Health Workers etc	88(44%) 40(20%) 40(20%) 32(16%)
7	Overall, how would rate facilities in hospital? EXCELLENT VERY GOOD GOOD, FAIR POOR	40(20%) 40(20%) 52(26%) 48(24%) 20(10%)

Total 32% spend for more than 1000 rupees on their teeth before coming to this hospital. It seems to be high economical burden on the population according to their socio economical status. However, 82% of dental patients found the treatment affordable in the hospital.

Table 10: Economic burden on patients due to treatment

S.No	Variable	Frequency(%)
1.	How much money did you spend before coming to RML?	
	Free of cost	64(32%)
	500	36(18%)
	1000	36(18%)
2.	More than 1000	64(32%)
	Do you feel that cost of treatment is affordable in this hospital	
	Yes	164(82%)
	No	36(18%)

ASSOCIATION WITH SOCIO-DEMOGRAPHIC VARIABLES

An attempt is made to find out association of gender and educational level with oral hygiene practices and knowledge and awareness about oral cancer. Findings are presented in tables 11,12 and 13.

Table no 11: Association between gender and knowledge of oral hygiene, oral cancer (n=200)

Sr No	Oral Hygiene	Gender of Respondents		p-value
		Male	Female	
1.	Benefit of regular tooth brushing			0.925
	-Dental cavities	53(43.8%)	31(39.2%)	
	-Pyorrhea	28(23.1%)	19(24.1%)	
	-Bad breath	31(25.6%)	23(29.1%)	
	-Oral cancer	9(7.4%)	79(39.5%)	
2.	Awareness about reasons for foul smell, pyorrhea, paleness etc			0.007
	-smoking	27(22.3%)	29(36.7%)	
	-chewing tobacco, panmasala	53(43.8%)	39(49.4%)	
	.Alcohol	14(11.6%)	6(7.6%)	
	-others	27(22.3%)	5(6.3%)	
3.	Brushing teeth can prevent dental decay			0.0001
	-Yes	92(76%)	32(40.5%)	
	-No	29(24%)	47(59.5%)	
	-Don't know	121(60.5%)	79(39.5%)	
4.	Ever heard about mouth cancer			0.673
	-Yes	68(56.2%)	42(53.2%)	
	-No	53(43.8%)	37(46.8%)	
5.	Knowledge about causes of oral cancer			0.473
	Yes	63(52.1%)	37(46.8%)	
	No	58(47.1%)	42(53.2%)	

Benefit of regular tooth brushing 43% male and 39% female says it prevent dental cavities, 28% male and 24% female says it prevent pyorrhoea, 25% male and 29% female says it prevent bad breath There are a significant association in between gender wise awareness about reasons for foul smell, pyorrhea, paleness and brushing teeth can prevent dental decay. Association between awareness about oral cancer and gender was insignificant.

Table no 12: Association between gender and practice of oral hygiene (n=200)

Sr No	Practice of oral hygiene	Gender of Respondents		p-value
		Male	female	
1	Times you brush teeth			0.072
	Once	61(50.4%)	51(64.5%)	
	Twice	53(43.8%)	27(34.2%)	
	No Reply	7(5.8%)	1(1.3%)	
2	Regular visit to dentist			0.002
	Yes	4(3.3%)	12(15.2%)	
	No	117(96.7%)	67(84.8%)	

3	Any treatment taken before coming to hospital Self- medication Applied clove oil Visit to quack Private doctor	70(57.9%) 12(9.9%) 20(16.5%) 19(15.7%)	34(43.0%) 20(25.3%) 8(10.1%) 17(21.5%)	0.010
4	Any form of tobacco used in past 6 months Yes No	72(59.5%) 49(40.4%)	48(60.8%) 31(39.2%)	0.856
5	Thought of quitting Yes No	60(49.6%) 61(50.4%)	44(55.7%) 35(44.3%)	0.398

Table 12 shows that more males than females do two times brushing but such difference is not significantly associated. More females visit dentist than males and such difference is statistically significant. It is also seen that more male visited quacks but more females visited private doctor and such difference was significantly associated. Same proportion of male and females used tobacco during last six months but higher females responded quitting tobacco than males but such difference was not significantly associated. We have also examined association with education and findings are presented in the table 13.

Table no13: Association between education and prevention of oral cancer (n=200)

The table 13 shows that education has significant association with hygiene practices but not with tobacco

Sr No	Practice of oral hygiene and treatment	Education levels of Respondents			p-value
		No schooling	8th-10 th completed	Graduate or above	
1	Times you brush teeth Once Twice No reply	17(42.55) 22(55%) 19(2.5%)	60(53.6%) 46(41.1%) 6(5.4%)	35(72.6%) 12(25%) 1(2.1%)	0.040
2	Regular visit to dentist Yes No	8(20%) 32(80%)	4(3.6%) 108(96.4%)	4(8.3%) 44(91.7%)	0.004
3	Any treatment taken before coming to hospital Self- medication Applied clove oil Visit to quack private doctor	20(50%) 8(20%) 8(20%) 4(10%)	64(57.1%) 8(7.1%) 8(7.1%) 32(28.6%)	20(41.7%) 16(33.3%) 12(25%) 0(0%)	0.0001
4	Any form of tobacco used in past 6 months Yes No	20(50%) 20(50%)	68(60.7%) 44(39.3%)	32(66.7%) 16(33.3%)	0.275
5	Thought of Quitting Tobacco Yes No	20(50%) 20(50%)	60(53.6%) 52(46.4%)	24(50.0%) 24(50%)	0.882

consumption and quitting tobacco

IV. Discussion

The concept of oral health is multidimensional and is influenced by culture and societal norms across the population groups. There is scarcity of literature on dental health awareness, oral health-related habits, and behaviors among the adult population in the Indian.

The present study found that brushing with toothbrush and toothpaste was the most commonly used method of teeth cleaning (70.20%). Similar findings were also noted by Jain *et al.* at Jodhpur⁷ Sharda *et al.* at Udaipur⁸ Chandra Shekhar *et al.* at Mysore⁹ Bhat *et al.* at Bangalore,¹⁰ and Pandya *et al.* at Gujarat¹¹

Similar to the findings of Dasgupta *et al.*,¹² the present study revealed that 40.71% of the subjects used to brush their teeth twice daily. However studies by Jain *et al.*,⁷ Sharda *et al.*,⁸ Chandra Shekhar *et al.*,⁹ Bhat *et al.*¹⁰ and Pandya *et al.*,¹¹ revealed the findings to be somewhat lower compared to the present study, where only 23.0, 15.4, 22.0, 11.6, and 13.96%, respectively, used to brush twice a day. Only 44.93% of the subjects used mouthwash as an oral hygiene aid in the present study; which was in agreement with Jain *et al.*'s study.⁷ However, Sharda *et al.*⁸ found mouthwash users to be 64.10%.

Regarding a visit to the dentist, the findings of the present study (44.62%) were consistent with the findings of Chandrashekhar *et al.* in Mysore.⁹ Although, it was much lower compared to the findings of Bhat *et al.* in Bangalore¹⁰ (80.1%), this finding was quite high compared to the study by Jain *et al.* at Jodhpur⁷ and Pandya *et al.* at Gujarat,¹¹ where only 10.0 and 3.65%, respectively, would regularly visit a dentist every six months.

Approximately 62% of the subjects stated that oro-dental diseases were a result of not cleaning teeth regularly, consistent with the finding of Chandrasekhar B R *et al.*⁹ The present study revealed that about three-fourth of the subjects were aware of the harmful effects of excess sweet, cold drinks, alcohol consumption, and smoking/pan chewing/gutkha and other tobacco products on oral hygiene. However, Chandrasekhar B R *et al.*⁹ reported awareness among one-third of the participants may be due to different place and time of study..

About two fifth (40.14%) acquired information on oral health from television, consistent with the findings of other studies.^{8,10} However, community-based educational programs by health professionals, in collaboration with print and media would also be effective in spreading the awareness and importance of proper dental care. At the individual and family levels, every opportunity should be utilized by family physicians and primary care physicians for imparting health education for the prevention of common dental diseases.

The present study revealed good oral hygiene practices among 38.39% of the participants, which was much higher compared to the findings of Bhat *et al.*¹⁰ (6.2%). Similar to the present study, literate and higher socioeconomic status subjects were found to have significantly good oral hygiene practices in the studies by Chandra Sekhar BR *et al.*,⁹ and Kawamura M *et al.*¹³.

A case control study was conducted to determine the influence of oral hygiene habits and practices on their risk of developing oral leukoplakia in githongo sublocation in Meru district. 85 cases and 141 controls identified in a house to house screening. Lastly they concluded that failure to brush teeth and none use of toothpaste are significantly associated with the development of oral leukoplakia and they recommended that oral health education and motivation for the improvement of oral hygiene habits and practices and therefore oral hygiene status should be among the strategies used in oral leukoplakia preventive and control program.¹⁴

The prime causative factors associated with oral cancers in India are tobacco and alcohol, which are consumed in several of forms. However, not much studies are available on this aspect. A study was conducted among 500 patients in age group 20-60 years in a dental college in Chennai. The result showed that 47.6% of the respondents were aware of the term called oral cancer and most of the patients related oral cancer occurrence to older age (68.3%). 39.8% of the patients unaware about the signs, symptoms and complications of oral cancer Most of the patients lacked knowledge about the clinical presentation of cancer. About 60.2% of patients had knowledge about the signs, symptoms and complications of oral cancer. 96% of patient responded that they would visit the dentist in case of painless, non-healing ulcer of the oral cavity.¹⁵

A study was done among 2045 dental patients in attending Panineeya Institute of Dental Sciences, Hyderabad. 60.2% of the respondents had heard about oral cancer. Significant differences were seen in gender with female having better knowledge ($p = 0.02$). No significant difference was noted among the age group and varying education levels. However, knowledge about early signs of oral cancer revealed a highly significant difference with the level of education ($p = 0.000$).¹⁶

IV. Conclusion And Recommendation

The results of this study suggest that oral health awareness and practices among the study population are poor and need to be improved. The above-mentioned oral hygiene problems can be prevented by simply providing awareness, which is a more cost-effective alternative than expensive dental procedures. Periodic oral health awareness programs at schools, colleges, universities, and community levels should be undertaken, and at each level, the major role and responsibility lies in the hands of the primary care physicians, whose interactions at the individual and family levels make them more accessible and acceptable. Dental professionals, Dental Marketing Agencies, and media too may join hands with the government to help in the prevention of oral health problems by improving knowledge, attitudes, behaviors, and practices toward oral hygiene among the general population.

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