



A Study of Oral Hygiene Practices and its Co-Relation to the Dental Health Status in South Indian Population

KEYWORDS

oral hygiene status, prevalence, oral hygiene practices

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ABSTRACT

Aim: To find out the association of oral hygiene practices to the existing oral hygiene status in the South Indian population **Objectives:** •To estimate the incidence of dental caries, oral hygiene status in rural and urban populations •To co relate the dental status with the oral hygiene practices **Methodology:**Cross sectional study was carried out on 2000 patients through a questionnaire on the urban and the rural populations. Mouth mirror and explorer under good illumination was used for examination. The results were statistically analyzed.**Results:**Among the population that was studied 1153 individuals were males and 847 were females. Dental caries was seen in 85.6%. Tooth brush was used by 93.8% and 6.2% used other aids. **Conclusion:**A significant relation was established between oral hygiene practices and the oral hygiene status of the South Indian population.

INTRODUCTION:

Oral health can be considered as a state of absence of facial and oral pain, oral sores and infections, oral cancer, periodontal disease, decay and other diseases or conditions that restrict an individual's ability to chew, smile, bite, speak and their psychosocial well being.^[1] Poor oral hygiene practices lead to dental caries and periodontitis.^[2,3,4] Dental caries affects 60-90% of school children and majority of adults and so is a major problem in oral health in developing countries.^[5-8] In India the prevalence of dental caries is about 50-60%.^[9] Cardiovascular disease, respiratory infections, stroke, diabetes and nutritional problems have shown oral manifestations.^[10]

MATERIALS AND METHOD:

The study was conducted on 2000 patients for a period of 4 months in outpatient department of A. B. Shetty Memorial Institute of Dental Sciences, Nitte University, Deralakatte, Mangalore and the rural satellite centres (Bailoor, Nitte, Mundkooor, Farangipete and hejmadykodi) from June to September 2013. Patients consuming analgesic drugs, tranquilizers or mood altering medications were excluded from the study. Patients between the ages of 15-60 years were included in the study. The patients in the study were informed about the study and were asked to sign the consent form. W.H.O. oral health survey format was used as the questionnaire for the patients.^[11] The patients were evaluated for their oral hygiene status with questionnaire under good illumination using mouth mirror, probe, explorer and cotton rolls. Data obtained was statistically analysed.

RESULT:

Among the population that was studied 1153 individuals were males (57.65%) and 847 were females (42.35%). Males comprised majority of the study group. There were four age groups that were analysed 15-30, 30-45, 45-60 and 60 above. The number subjects in each were 88, 462, 994, 456 respectively.

Since the study was carried in both rural and urban population the numbers of individuals taken from each were 1017 in urban (50.85%) and 983 in rural (49.15%). The dietary habits observed among the study population indicated that majority were non vegetarians and mixed diet (79.75%), followed by vegetarians (13.15%) and lastly the pescatarians (7.1%).

Dental caries was a predominant finding observed in the study population. Caries was seen to be present in 85.6% of the study group. Although the number of carious teeth in each individual varied.

The number of filled teeth in the population seen in the group varied between people have one tooth filled (44%), two teeth filled (35.8%) and more than three teeth filled were only seen in 20.2%.

The oral hygiene practices that were observed in the population were analysed. Majority of the study population used tooth brush (93.8%) to clean their teeth. Only 6.2% of the population used other aids to clean their teeth. The frequency of using the toothbrush varied from 78.6% of group brushing only once and 21.4% brushing twice a day. The individuals not only had a difference in frequency of brushing, they also had a difference in the duration of brushing. Individuals brushing their teeth less than or equal to two minutes were 26% whereas those brushing for more than two minutes were 74%.

The number teeth with dental caries varied when compared to different factors. Dental caries was compared to the gender, age group, location and diet (Table 1,2,). Caries activity was maximum in the age group between 45 to 60 years of age. Males had a predominance of caries experience when compared to the females. The number of teeth with dental caries were seen slightly to be on the higher side in the urban population.

Dental caries was also found to be related to oral hy-

giene practices among the study group. Significantly greater decay was found in the individuals having a tooth brushing habit of once a day when compared to those who brushed twice (Table 2).

Frequency of in between snacking also affected the dental caries. Caries was found to be more in people who had the habit when compared to those who didn't have the habit of frequent intake of snacks (Table 2).

The use of other aids to maintain oral hygiene such as dental floss, tooth pick and mouthwash were found to be significantly greater in the urban population (Table 3). Also the history of previous treatments such as oral prophylaxis was more in the urban population.

DISCUSSION:

In the present study there were more male patients than females (57.65% vs. 42.35%).

Dental caries was a predominant finding in the present study. The prevalence of dental caries in the urban study group was more than rural. A similar finding was observed by Patro et al in 2008 and also in study conducted by Shah N and Sundaram K R.^[8,12] This could be due to the fact that other oral hygiene aids were more commonly used in the urban population due to higher awareness as compared to rural population.

Studies have demonstrated that the use of fluoridated toothpastes for brushing have shown a reduction in dental caries,^[13] but the effect of oral hygiene in periodontitis has not been clearly demonstrated.^[14] Study conducted by Abdellatif and Burt in 1987 showed that periodontitis was not observed in 95% of the study population have good oral hygiene, thus confirming oral hygiene as an important predictor for periodontitis among all age groups.^[15]

In present study we observed that use of oral hygiene aids such as toothpick, dental floss and mouthwash was more common in the urban population. Several factors such as socioeconomic factors, lack of awareness in maintenance and dental health contribute to the caries experience in individuals.^[16] In 2012 Ferro et al reported that socioeconomic factors aid in predicting dental caries experience which further leads to loss of tooth in the future.^[17] Poor socioeconomic factors have also shown to have a higher number of decayed, missing, filled teeth as reported by Witt DC.^[18]

With the use of efficient oral hygiene practice, the development of caries can be prevented.^[19] In our study 93.8% of the population used toothbrush and 40.7% used dental floss, whereas the percentage of dental caries is high (85.6%). There has been seen to be an increase in the frequency of flossing and tooth brushing in females, Asians, in educated and in individuals with higher income.^[20]

The risk factor approach in promotion of oral health was given by Peterson WHO 2002.^[5] Several factors affect the oral health which includes health system and oral health services, socio-cultural factors and environmental risk factors. The health system and oral health services affect the use of oral health services. Socio-cultural factors and environmental risk factors influence the oral hygiene practice, diet, tobacco and alcohol consumption which may affect the oral health. This ap-

proach affects the outcome of oral health status and under risk behaviour may cause impairment of the general health and may affect quality of life.

The relative risk of oral diseases is seen to be higher in case of individuals who have poor living conditions, lack of belief in oral health care and in individuals with low education.^[5] The risk factors were assessed in our study. Dental Caries was found to be more commonly associated with males. The age group of the study population that had maximum caries load was between the age group of 45 to 60 years. Urban population showed predominance in comparison to the rural population.

Plaque is known to be responsible for dental caries and periodontal diseases. Studies have shown that the use of proper oral hygiene techniques such as prophylaxis, repeated tooth cleaning instructions and stimulation of oral hygiene habits have led to minimal gingivitis, no periodontal tissue attachment loss and development of no new carious lesions among the study population.^[21] Huber et al, 1985 demonstrated that more plaque is removed when brushing time is increased to four minutes from one. However not only brushing time but also the technique is important for effectiveness and efficiency.

It has also been shown that an increase in dental caries is seen in individuals having a negative lifestyle in every social class, with the lowest being most significant. This demonstrates an association between dental caries and the life style of an individual.^[22]

Tooth brushing and flossing lead to highly efficient removal of plaque preventing dental caries to large extent.^[23] The importance of brushing following meals was first demonstrated by a study in 1950 by Fosdick.^[24] In our study we found that decay was seen to affect individuals who brush once more than the individuals who brush twice a day. Frequency of in between snacking also affected the prevalence of decay. Decay is increased in individuals with the habit of in between snacking.

Studies have shown a strong relationship between presence of anterior caries and age, location geographically, diet, oral hygiene habits and malalignment of teeth.^[25] Study in 2009 concluded that less than one fourth (16.3%) of the population of south canara district had missing anterior tooth due to caries and incidence of lost anterior teeth due to caries was in individuals above 65 years of age.^[26] In the present study we observed that the total number of decayed teeth in pescatarians is less than that of individuals having a vegetarian diet. (table 4). This could be due as fish are a rich source of dietary fluoride.^[27]

CONCLUSION:

The prevalence of dental caries in the South Indian population has been found to be 85.6%. It has been found to be correlated with the oral hygiene status and the oral hygiene practice in the study group. The awareness regarding the oral hygiene practices among the South Indian population is limited. Thus there is need to spread the importance of oral health. Its prevention and early diagnosis can play an important role in the management of these conditions.

TABLES :

1		NUMBER OF DECAYED TEETH					TOTAL
		2	3	4	5 OR MORE		
AGE GROUP	15-30	44	0	0	0	0	44
		100.0%	.0%	.0%	.0%	.0%	100.0%
	30-45	146	88	21	74	33	362
		40.3%	24.3%	5.8%	20.4%	9.1%	100.0%
	45-60	133	298	252	93	89	865
		15.4%	34.5%	29.1%	10.8%	10.3%	100.0%
	>60	85	74	77	40	164	440
		19.3%	16.8%	17.5%	9.1%	37.3%	100.0%
GENDER	MALE	238	239	282	88	134	981
		24.3%	24.4%	28.7%	9.0%	13.7%	100.0%
	FEMALE	170	221	68	119	152	730
		23.3%	30.3%	9.3%	16.3%	20.8%	100.0%
LOCATION	URBAN	146	160	152	1148	265	871
		16.8%	18.4%	17.5%	17.0%	30.4%	100.0%
	RURAL	262	300	198	59	21	840
		31.2%	35.7%	23.6%	7.0%	2.5%	100.0%

Table 1 – number of decayed teeth in relation to AGE GROUP, GENDER and LOCATION

		NUMBER OF DECAYED TEETH					TOTAL
		1	2	3	4	5 OR MORE	
DIET	VEGETARIANS	42	44	85	17	55	243
		17.3%	18.1%	35.0%	7.0%	22.6%	100.0%
	NON VEGETARIANS	288	353	265	190	231	1327
		21.7%	26.6%	20.0%	14.3%	17.4%	100.0%
	PESCATARIANS	78	63	0	0	0	141
		55.3%	44.7%	.0%	.0%	.0%	100%
BRUSH	ONCE	341	380	287	139	77	1224
		27.9%	31.0%	23.4%	11.4%	6.3%	100.0%
	TWICE	67	57	63	68	108	363
		18.5%	15.7%	17.4%	18.7%	29.8%	100.0%
FREQUENCY OF IN BETWEEN SNACKING	PRESENT	220	289	225	44	178	956
		23.0%	30.2%	23.5%	4.6%	18.6%	100.0%
	ABSENT	188	171	125	163	108	755
		24.9%	22.6%	16.6%	21.6%	14.3%	100.0%

Table 2 – number of decayed teeth in relation to DIET, BRUSHING and FREQUENCY OF IN BETWEEN SNACKING

		Location		Total
		Urban	Rural	
Other Aids	dental floss	207	16	223
		38.9%	100.0%	40.7%
	toothpick	105	0	105
		19.7%	.0%	19.2%
	mouthwash	220	0	220
		41.4%	.0%	40.1%
Total		532	16	548
		100.0%	100.0%	100.0%

Table 3 – method of oral hygiene aid used in relation to the location

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