

A Study of Dental Morbidity Among Fishermen Community in Rural Tamilnadu

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ABSTRACT

Background: Very few data are available on the oral health condition among fisherfolk in rural areas of India. The external factors like diet, quality of dental hygiene and environmental factors have an effect on caries occurrence. The aim of the study was to assess the dental morbidity among fishermen community.

Materials and methods: A community based observational study was done among the fishermen community. Descriptive statistics, percentages and Chi square methods were used for analysis. p value <0.05 has been taken as statistically significant.

Results and conclusion: Majority of patients had sought treatment for symptomatic caries and younger age group patients sought treatment more than older age group. Education level and social class also reflected the morbidity status of the community. Findings have implications to develop strategies to increase the public awareness of oral hygiene in rural community.

Keywords: Dental morbidity, Fishermen community, Symptomatic caries.

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INTRODUCTION

Dental or oral diseases are one of the most prevalent disorders in Indian population. Dental caries is a significant yet a preventable public health problem. Dental caries is an infectious localised disease that results in loss of mineral from the affected teeth caused by organic acids that originate from the microbial fermentation of carbohydrate. The external factors like diet, fluoride exposure and quality of dental hygiene have an effect on the caries occurrence(1). The initiation of dental caries depends on the balance between the intensity of the environmental factors affecting the teeth and resistance of enamel surface. Few data are available on the oral health conditions in different states particularly the rural areas of India. However from the available studies it can be estimated that a large range of population from 31.5-89% is affected by

dental caries in different parts of the country (2). In addition to dental caries the other dental conditions for which the patients seek treatment are periodontal problems, replacement of missing teeth and non carious lesions which include attrition, abrasion and erosion of teeth. No systematic assessment of the prevalence of dental caries in India is available. In an attempt to add to the data base, this study was conducted among fisher folk in rural Tamilnadu. The study was conducted with the aim to assess the dental morbidity among fishermen community; with the objectives being to study the socio-demographic profile of respondents, to study the dental morbidity profile of respondents and to organise the Information, Education and Communication activities in the community for improvement of dental hygiene based on the results of this study.

METHODOLOGY

The present study was carried out at the dental clinic in rural health centre Anaichikuppam under the jurisdiction of Community Medicine Department of Pondicherry Institute of Medical Sciences, Pondicherry with the help of a predesigned questionnaire to collect information such as name, age, sex, education, occupation, family size, monthly income, brushing habits and diet.

The study population included the fishermen and their families who lived in the villages in and around the coastal area who had reported for dental treatment and their verbal consent was obtained for collecting the relevant data. A total of 1019 patients ranging in the age group of 1-80 years were

examined. The data was collected during a period of one year from January 2009-December 2009. The patients were grouped into different age groups. All the examinations were carried out by a single qualified examiner (Dentist).

The patients were examined and treated for the dental problems. The cases were classified as carious and non carious cases. Carious conditions were further classified as symptomatic and non symptomatic conditions. The non carious conditions were classified under attrition, abrasion and fracture of teeth. Patients with periodontal problems and those with missing teeth were also analysed separately. The data was compiled and analysed by using SPSS version 16.0 software. Descriptive statistics,

percentages and Chi square methods were used for analysis. Socioeconomic status was determined as per modified B G Prasad Classification July 2009 by using P. Kumar's conversion factor, taking the rural all India consumer price index(CPI) for January 2011 into account as follows (3):

$$\text{Social Class} = \frac{\text{Value of CPI}}{100} \times 4.93$$

RESULTS

Total number of patients examined were 1019 of which 469(46.03%) were males and 550(53.97%) were females. Maximum patients 337 (33.07%) belonged to age group 21-30 years followed by 31-40 years age group, 203(19.93%). However only few cases 39(3.82%) were in the age group of 61-80 years (Table 1).

Majority of the patients 640 (62.80%) had sought treatment for symptomatic caries. Maximum number of symptomatic caries 208(32.50%) were seen in 21-30 years age group followed by 140(21.88%) in the age group of 11-20 years. The least number of symptomatic carious cases 22(3.44%) were seen in 61-80 years age group (Table 2). The total number of cases with asymptomatic carious condition was 144(14.13%). The maximum number of cases were seen in 21-30 years age group, 62(43.06%) followed by 11-20 years, 23(15.97%) (Table 3). The number of patients who sought treatment for symptomatic abrasion were 21 (2.06%). The maximum number of symptomatic abrasion cases were seen in 41-50 years age group 11(52.38%) (Table 4). 253(24.82%) patients out of 1019 attending the dental clinic sought treatment for various non carious conditions (Table 5). Of this the maximum number of patients sought treatment for periodontal problems, 160(15.70%), which included bleeding gums 112(10.99%) and mobile teeth 48(4.71%). This was followed by patients who wanted to replace their missing teeth 36(3.53%). The patients who sought treatment for abrasion, attrition and fracture of teeth were 21(2.06%), 20(1.96%) and 16(1.57%) respectively.

Majority of the patients belonged to mid-

Age ñ Group (Years)	NO. OF PATIENTS		
	MaleN	FemaleN	Total N (%)
<10	35	28	63 (06.18)
11 – 20	100	95	195 (19.14)
21 – 30	151	186	337 (33.07)
31 – 40	83	120	203 (19.93)
41 – 50	49	71	120 (11.78)
51 - 60	28	34	62 (06.08)
61 – 70	17	13	30 (02.94)
71 - 80	6	3	9 (00.88)
Total	469 (46.03)	550 (53.97)	1019 (100.00)

Age ñ Group (Years)	Symptomatic Caries		
	No N (%)	Yes N (%)	Total N (%)
<10	22 (05.80)	41 (06.41)	63 (06.18)
11 – 20	55 (14.51)	140 (21.88)	195 (19.15)
21 – 30	129 (34.04)	208 (32.50)	337 (33.07)
31 – 40	79 (20.84)	124 (19.37)	203 (19.92)
41 – 50	45 (11.87)	75 (11.71)	120 (11.78)
51 - 60	32 (08.44)	30 (04.69)	62 (06.08)
61 – 70	12 (03.18)	18 (02.81)	30 (02.94)
71 - 80	5 (01.32)	4 (00.63)	9 (00.88)
Total	379 (100.00)	640 (100.00)	1019 (100.00)
X ² = 14.235, df = 7, p = 0.047 Significant			

Table 3: Age wise distribution of patients who sought treatment for Asymptomatic caries

Age ñ Group (Years)	Asymptomatic Caries		
	No N (%)	Yes N (%)	Total N (%)
<10	44 (05.03)	19 (13.19)	63 (04.22)
11 – 20	172 (19.66)	23 (15.97)	195 (19.14)
21 – 30	275 (31.43)	62 (43.06)	337 (33.07)
31 – 40	174 (19.89)	29 (20.14)	203 (19.92)
41 – 50	116 (13.26)	4 (02.78)	120 (11.78)
51 - 60	56 (06.40)	6 (04.17)	62 (06.08)
61 – 70	29 (03.31)	1 (0.69)	30 (02.94)
71 - 80	9 (01.02)	0	9 (00.88)
Total	875(100.00)	144 (100.00)	1019 (100.00)
Yates' X ² = 31.399, df = 7, p = 0.00005 Highly Significant			

Table 4: Age wise distribution of number of patients who sought treatment for Symptomatic Abrasion.

Age ñ Group (Years)	Abrasion		
	No N (%)	Yes N (%)	Total N (%)
<10	63 (06.31)	0 (0)	63 (06.19)
11 – 20	195 (19.54)	0 (0)	195 (19.14)
21 – 30	335 (33.57)	1(04.76)	336 (32.97)
31 – 40	200 (20.04)	3(14.29)	203 (19.92)
41 – 50	109 (10.92)	11 (52.38)	120 (11.78)
51 - 60	58 (05.81)	4 (19.05)	62 (06.08)
61 – 70	30 (03.01)	1 (04.76)	31 (03.04)
71 - 80	8 (00.80)	1 (04.76)	9 (00.88)
Total	998 (100.00)	21 (100.00)	1019 (100.00)
Yates' X ² = 39.224, df = 7, p = 0.000001 Very Highly Significant			

Table 5: Distribution of patients who sought treatment for non carious Conditions (N = 1019)

Non carious conditions	Number (%)
Abrasion	21 (2.06)
Attrition	20 (1.96)
Fracture of teeth	16 (1.57)
Mobile teeth	48 (4.71)
Gum bleed	112 (10.99)
Missing teeth	36 (3.53)
Total	253 (24.82)

dle school level of education 313(31.56%) followed by high school 309 (32.15%). Illiterates were 64(6.45%) and graduate and

above were only 4(0.40%) (Table 6). Majority of the patients 554(54.37%) belonged to social class V followed by

442(43.38%) in the social class IV (Table 7). 90% of the patients consumed fish 6-7 times a week and the rest at least 3-4 times a week. 70% of the adult male patients consumed alcohol. The average family size was 4. It was also observed that since many fishermen go to the sea very early in the morning at about 2-4 am most of them do not brush their teeth in the morning.

DISCUSSION

Dental caries is a multifactorial disease and the complex interaction of many aetiological factors result in the occurrence of the disease. Caries affects more than 80%of the population alive in the world today its impact on individuals and communities, as a result of pain, impairment of function and reduced quality of life is considerable. Dental caries is a public health problem in India with a prevalence of 60-80% among children(4).

In the present study only 6.18% of the total patients belonged to <10 years of age of which 69.85% of children had symptomatic carious teeth and 30.15% had asymptomatic caries. Studies done earlier in rural Tamilnadu (5) has shown that 33% have dental caries in under 5 children in rural fishermen community. Caries prevalence in 7-12 years of age in rural child population of Nainital was recorded as 77.7% (3). Studies done among children of fisher folk in coastal areas of Karnataka showed that magnitude of dental caries among child population was as high as 82.2% in children of 5-15 years of age (6) Well conducted national oral health programme should be launched to provide oral health care both in rural and urban areas as 80% of the children and 60% of adults suffer from dental caries (4).

A study done by WHO in Pondicherry has reported the percentage affected by caries in different age groups,5years-83%,12 years-71.5%,15 years-83.4%,35-44 years-73.3%,65-74 years-55.6%(7). In the present study maximum number of cases was seen in 21-40 years of age. The high prevalence of caries in this rural region could be due to poor oral hygiene and low awareness of oral health. Studies have shown that the

Table 6: Distribution of patients as per educational status (N=992)

EDUCATIONAL LEVEL	NUMBER(%)
Illiterate	64(6.45)
Primary school	187(18.85)
Middle school	313(31.56)
High school	309(31.15)
Higher secondary	115(11.59)
Graduate and above	4(0.40)
Total	992(100)

Table 7: Distribution of patients by socioeconomic status

Social Class	Monthly per capital income (Rs)		Number (%)
	Prasadis Classification(1961)	Modified proposed classification for the month of January 2011	
I	100 & above	2871 & above	0
II	50 – 99	1422 – 2870	2(0.19)
III	30 – 49	842 – 1421	21(2.06)
IV	15 – 29	436 – 841	442(43.38)
V	Below 15	Below 435	554(54.37)
Total			1019(100)

low socioeconomic status is associated with increase in caries(7), also caries is found to be more in childhood and adolescent stages and females develop more caries than males (8). In the present study 53.97% of patients were females and it was observed that the treatment was sought only when the conditions become symptomatic which highlights the need to increase the awareness among the patients. It was also observed in the present study that there were general erosion and abrasion teeth of adult male patients though it did not cause any discomfort to the patients. This could be

occupation related due to the chronic exposure of teeth to the salty sea water and breeze.

CONCLUSION

Oral health care is an integral part of general health. The oral health problem in India can be prevented to a large extent by public education and motivation. Since the etiology and prevention of dental caries is very simple, prevention seems to be the most practical approach. This should be initiated at various levels of primary, secondary and tertiary health care dental serv-

ices. Very few studies have been done regarding the dental caries status among fisher folk hence highly valid comparisons are not possible in the present study. Comprehensive strategies have to be developed to prevent or control caries by increasing the public awareness and ways to address the problem, promote healthy oral habits and to ensure access to effective use of regular preventive and restorative dental care in community based set up.

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