

# Dental Caries Status and Treatment Needs of Children of Fisher Folk Communities, Residing in the Costal Areas of Karnataka Region, South India

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## ABSTRACT

**Objective:** To assess the dental caries status and treatment needs of children belonging to the fisher folk communities.

**Method:** Two hundred and sixty-seven children up to the age of 14 years were examined using the World Health Organization (WHO) oral health assessment criteria, 1997.

**Results:** The prevalence of dental caries was found to be high in the study population. The unmet treatment need was also high.

**Conclusion:** Further research is suggested in order to explore and identify the prevailing aetiological factors responsible for the current status.

# El Estatus de las Caries Dentales y Necesidades de Tratamiento de los Niños en las Comunidades de Pescadores, Residentes en las Áreas Costeras de la Región de Karnataka, al sur de la India

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## RESUMEN

**Objetivo:** Evaluar el estatus de las caries dentales y las necesidades de tratamiento de los niños en las comunidades de pescadores.

**Método:** Se examinaron doscientos sesenta y siete niños de hasta 14 años de edad, usando criterios de evaluación de la salud oral establecidos por la Organización Mundial de la Salud (OMS) en 1997.

**Resultados:** Se halló que la prevalencia de las caries dentales era alta en el estudio poblacional. Las necesidades de tratamiento todavía sin satisfacer, fue también elevada.

**Conclusión:** Se sugiere continuar las investigaciones a fin de explorar e identificar los factores etiológicos responsables del estatus actual.

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## INTRODUCTION

Dental caries is a common dental disease during childhood in India. Over 40% of Indian children are found to be afflicted with dental caries and a large percentage of children reside in rural areas and most of them are in need of dental care.

A study was conducted to assess the dental caries status and treatment needs of children belonging to fisher folk communities. The fisher folk communities are mainly the

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Mogaveera, Thandila, Harkantra, Karwis and Japthis. They reside in the coastal areas of Karnataka in India. The fishing community is an underprivileged one and there is sparse information on dental caries in this particular community.

## SUBJECTS AND METHODS

The study was a door to door survey carried out under natural lighting The WHO oral health assessment criteria (1997) (1) was used for the purpose of the survey. Deliberate or purposive sampling was employed for the purpose of the survey as the exact demographic profile of the community was not available from any reliable sources and further the population was unevenly distributed on the rural parts of the coastal areas of Northern Karnataka. Subjects were therefore recruited based on their availability during the door to door survey.

## RESULTS

The total sample consisted of 267 children examined at four different locations of the Uttara Kannada district. The areas were mainly the coastal areas of the Uttara Kannada district. Table 1 shows the distribution of study subjects by deciduous tooth decay.

Table 1: Distribution of dental caries experience in the child population

Age group (years)	Total Number of subjects (n)	Affected by Dental caries	%	Caries free	%
0-4	16	12	75	4	25
5-9	96	83	86.45	13	13.54
10-14	155	125	80.64	30	19.35

Twelve (75%) out of 16 subjects in the 0-4 year-age group had decayed teeth. The percentage of subjects with decayed teeth peaked at 83 (86.45%) out of 96 subjects in the 5-9-year age group. Thereafter, there was a slight decrease in the percentage of decayed teeth *ie* 125 (80.64%) out of 155 subjects in the 10-14-year age group.

Table 2 shows the distribution of the study subjects according to the mean decayed filled teeth (dft). The mean

Table 2 (a): Distribution of study subjects according to the mean decayed filled teeth

Age group (years)	Total Number of subjects (n)	Number of decayed teeth (d)	Number of filled teeth (f)	Total Number of decayed + filled teeth (dft)	Mean dft
0-4	16	75	0	75	4.68
5-9	96	489	0	489	5.09
10-14	155	188	0	188	1.212

Table 2 (b): Mean decayed missing and filled teeth in the permanent dentition of the child population (5-9 years and 10-14 years)

Age group (years)	Total No. of subjects (n)	Decayed teeth (D)	Missing teeth (M)	Filled teeth (F)	Mean D+M+F
5-9	96	0.239	0	0	0.239
10-14	155	1.864	0.019	0.012	1.896

dft score for the 0-4-year age group was found to be 4.68 and was found to increase to 5.09 in the 5-9-year age group. It decreased to 1.212 in the 10-14-year age group. The decrease in the mean dft with age of 10-14-year might be because of not considering the missing teeth and due to natural exfoliation of many deciduous teeth.

Table 3 shows the DMF distribution in the population based on the presence or absence of caries in the permanent dentition of children. In the age groups of 5-9-years, 88.54% were caries free and in the 10-14-year age group, the percentage had decreased to 36.12%.

Table 4 shows the distribution of the study population according to the mean treatment need. When the distribution of the subjects according to the mean treatment need was

Table 3: Decayed missing and filled teeth distribution in the population based on the presence or absence of caries in the permanent dentition of children

Age group (years)	Total No. of subjects (n)	Affected by dental caries (d)	%	Caries free	%
5-9	96	11	11.45	85	88.54
10-14	155	99	63.87	56	36.12

Table 4: Mean distribution of teeth according to the treatment need

Age group (years)	Total No. of subjects (n)	One surface filling	Two surface filling	Pulp care	Extraction
0-4	16	1.06	0.687	1.63	1.3
5-9	96	0.989	1.187	2.06	1.089
10-14	155	0.625	0.464	0.335	0.439

considered, it was found that in the 0-4-year age group, an average of 1.06 teeth needed one surface filling, 0.687 teeth required two surface fillings, 1.63 teeth needed pulp care and 1.3 teeth needed extraction. It was generally observed that several teeth in children could be considered for preventive care and pit and fissure sealant application.

## DISCUSSION

Since very few international studies have been done on rural underprivileged communities in the Western World and other parts of the World, also as the WHO 1997 criteria is relatively new with not many studies using it, highly valid comparisons were not possible in the present study. The wide variations in the reported studies, selected age groups' indices and methodologies employed were limitations to valid comparison. Uniformity in the methodologies employed in future could help us in making valid comparisons with the studies done in developing and developed countries.

In the present study, it was seen that the prevalence of dental caries was high. The unmet treatment need was large with very few children having been treated by a dentist. Bagramian *et al* (2) in their study on Amish children reported very low levels of dental caries; Sgan-Cohen *et al* (3) in their study on dental caries and its determinants among recent immigrants found the prevalence of dental caries to be very low among 5 and 12-year old children. The prevalence of dental caries in the present study is much higher compared to the studies conducted in India (4, 5, 6). These findings were dissimilar to the present study.

The findings of the present study are in conformity with the studies of Rajaratnam *et al* (7) where dental caries was found to increase with age in children.

An important feature seen in the present study was that the children did not have any restorations. These findings are similar to other studies (8). Rao A *et al* found that the caries

prevalence was 76.9% (9). These findings are similar to the present study where about 82.8% of children of age groups 5–14 years had dental caries.

Dental caries is a multifactorial disease and the complex interaction of several aetiological factors result in the occurrence of caries.

Since our study population is different in many respects to that of the above quoted studies and also the methods employed for recording caries are also different, comparisons might be valid.

The treatment need among the child population studied was high with most children requiring pit and fissure sealant, preventive resin restorations, topical fluoride applications, restorations and pulp therapy.

### CONCLUSION

The magnitude of the dental diseases was high in this child population. Diet, availability of sticky carbohydrate rich food, presence of certain trace elements like selenium, relative humidity might have influenced the occurrence of dental caries in this study population. Further research is suggested

in order to explore and identify the prevailing aetiological factors responsible for the current scenario.

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