

A Study on prevalence of early childhood caries among children attending Anganwadi center in Udupi Taluk, Karnataka

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Abstract

Aim: To assess the prevalence of early childhood caries among children attending Anganwadi centers in Udupi district (Karnataka).

Materials and Methods: On 218 children aged 2 to 6 years olds going to Anganwadi centers in Udupi district the study was carried out during the month of September-October 2010. Caries experience was recorded using DMFT index.

Results: A total 214 children was examined. Among the group of 108 boys and 106 girls, the dmft was 1.62±2.306 with 51.5% of the children being early childhood caries lesion free. 48.5% (104) were considered to have early childhood caries.

Conclusions: The prevalence of early childhood caries among 2 to 6 years old children attending Anganwadi center in Udupi Taluk, Karnataka was found to be 48.5% it was 52.8% in boys and 44.3% in girls. Significant increase in prevalence of early childhood caries with age observed.

INTRODUCTION

Early childhood caries is a serious dental problem that affects infants and pre-school children ^[1]. The American Dental Association (ADA) defines ECC as “the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child between birth and 71 months of age”^[2]. ECC is the most prevalent of all diseases of childhood. Generally dental problems in pre-school children are neglected by their parents as the deciduous teeth are going to shed off and considered to be of no importance and an economic burden if attended to them ^[3]. But if ECC is left untreated it can lead to pain, acute infections, nutritional insufficiencies, speech problems affect the growth and maturation of the permanent dentition. In fact, decay in the primary dentition is the best predictor for decay in the secondary dentition. At the most extreme cases, ECC can also lead to rampant decay, infection, pain, abscesses, chewing problems, malnutrition, gastrointestinal disorders, and low self-esteem. Additionally, children with ECC are shown to have an elevated risk for new lesions as they get older, both in the primary and permanent dentitions ^[4].

ECC is a serious public health problem especially in socially disadvantaged groups in both developed and developing countries, with India being no exception. There is a lack of data on prevalence of ECC both national and local levels. Hence this study is

done with the aim of assessing the prevalence of ECC among anganwadi school children of low socioeconomic status in Udupi District. ^[5]

The present study aims to determine the prevalence of ECC among anganwadi school children of rural areas in Udupi District. Anganwadi are government run day care centers, which cater to the needs of children from 0 to 6 years of age of low socioeconomic status. Hence most of the children of preschool age belonging to low socioeconomic status attend Anganwadis. As many studies have shown a high ECC prevalence in low income groups, Anganwadis were chosen for the study. ECC is a syndrome with both disease and behavioral components ^[6]. The colloquial term for ECC is “Baby Bottle Tooth Decay” because it is common in young children; a baby bottle, filled with liquids containing sugars, is used as a pacifier in aiding sleep or quietness. Though this disease can occur in all children, ECC is most prevalent in minority and poorer populations ^[7]. In India very few studies are done so far to know the prevalence of Early Child Caries ^[8, 9, and 10].

OBJECTIVES

- To assess the prevalence of early childhood dental caries among children attending the anganwadi center.

MATERIALS AND METHODS

Inspection, using mouth mirror and explorer with adequate illumination. The examination for dental caries and data collection is carried out as per WHO (1997) criteria.

Study design: A Cross sectional study

A total 218 preschool children were included in the study in which the teacher of the respective Anganwadi centers, were asked to advise parents of children to undergo a free dental checkup. This cross sectional study was conducted among 218 children aged 2 to 6 years old anganwadi children. The study was carried out during the month of September- October 2010 , A sample of 218 children, aged 2 to 6 years(old).who attend 5 day Anganwadi center were clinically examined for caries lesion. In this survey only the presence and absence decayed, extracted (due to caries) and filled teeth were noted according to WHO oral health survey 1997.

Official permission

The list of Anganwadi center was obtained from CDPO office, before starting the study official permission was obtained from all concerned authorities

1. Child Development Project Officer
2. Anganwadi Teacher
3. Parents

Armamentarium

Mouth mirror, explorer , kidney tray, cotton rolls, sterlium, small steel tray with lid disposable mouth mask, gloves, and gauze pad for removing debris around the teeth were carried to examination site.

Inclusion criteria: children who is present on day of examination & Subjects within age group of 2 to 6 years attending Anganwadi center.

Exclusion criteria: mentally challenged children.

STATISTICAL ANALYSIS

Data was analyzed using SPSS software version16.

RESULTS

A total of 214 children were examined. Among the group of 108 boys and 106 girls, the dmft was 1.62+/2.306 with 51.5% of the children being early childhood caries lesion free. 48.5% (104) were considered to have early childhood caries.

The caries prevalence for different age group is summarized in table: 3 the mean dmft were highest at the age of 4-5 years 2.41+/2.878 and lowest in age less than 3 years the mean dmft was .51+/1.168. The caries prevalence among these children increased with age.

Table: 1 Percentage with Early Childhood Caries according to gender

Children with Early Childhood Caries	Males (n=57)	Females (n=47)	Total No. %
104	52.8%	44.3%	48.5%

Table: 2 Percentage with Early Childhood Caries according to age with dmft index

Age Group in Month/years	Percent with Early Childhood caries	Mean dmft (def)	Standard error
1 - 3 years	18.5%	.50 (1.168)	.225
3-4 years	47.5%	1.52(2.075)	.188
4-5 years	66.6%	2.41 (2.878)	.392
5-6 years	45.5%	1.64(2.18)	.798

Table: 3 Distribution of Children Examined by age and gender

Age	Male	%	Female	%
1-3 years	13	6.07%	14	6.5%
3-4 years	59	27.5%	63	29.4%
4-5 years	32	14.9%	22	10.2%
5-6 years	4	1.86%	7	3.27%
Total	108	50.4%	106	49.5%

DISCUSSIONS

The prevalence of ECC in the present study is 48.5% this is comparatively high in India as per some Indian studies. Studies in Udupi and Davangere showed a prevalence of 19.4% and 19.2% respectively.^[11,12] However, a study in Kerala showed caries prevalence of 44% among 8-48 months old children^[13] The prevalence of ECC worldwide is highly variable ranging from 2.1% in Sweden to 85.5% in rural Chinese children according to a systematic review of Ismail and Sohn^[14]

While the prevalence in USA is reported to be 11%-53.1%, the prevalence in UK is 6.8%-12%.^[15] This could be attributed to differences in case definitions and diagnostic criteria of ECC apart from risk factors.

The present study showed a significant increase in prevalence of ECC with increasing age ranging from were highest at the age 4-5 years 2.41+/2.878 and lowest in age less than 3 years the mean dmft was .51+/1.168. A study conducted in Bangalore showed prevalence of 30.8% among 24-35 months old to 45.8% among 48-59 months old children^[1] The present study showed higher prevalence among boys and girls respectively (52.8% and 44.3%). Many studies have shown a higher prevalence of ECC among girls than boys, which has not been significant^[16]

CONCLUSIONS

The prevalence of early childhood caries among 2 to 6 years old children attending Anganwadi center in Udupi Taluk, Karnataka was found to be 48.5% it was 52.8% in boys and 44.3% in girls. Significant increase in prevalence of early childhood caries with age observed.

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