

## PREVALENCE OF DENTAL CARIES AMONG SCHOOL GOING CHILDREN

### PREVALENCE OF DENTAL CARIES AMONG SCHOOL GOING CHILDREN AGE BETWEEN 9 TO 12 YEARS IN PERAMBALUR DISTRICT- A CROSS SECTIONAL STUDY

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#### ABSTRACT

**AIM:** To assess the prevalence of dental caries in school going children of Perambalur district.

**MATERIALS AND METHODS:** A cross-sectional secondary data analysis was done on the data collected by non-probability convenience sampling. DMFT index was taken to address the prevalence of dental caries of school going children.

**RESULTS :** Rural school children showed a higher caries prevalence of 83.69% (3.26±1.67) as compared to urban school children with a prevalence of 60.46% (0.91±0.76). The difference in caries prevalence between the urban and rural groups was highly statistically significant (p = 0.000).

**KEYWORDS:** Dental Caries, Oral Screening, Oral Health Awareness.

## INTRODUCTION

Dental caries is a multi-factorial disease which impacts public health and is the most prevalent oral disease among children and young adults across the world. The prevalence of dental caries is a subject of interest for many epidemiological researches being carried out worldwide.

This study focuses on the prevalence of Dental Caries, which is popularly defined as 'Localized destruction of susceptible dental hard tissues by acidic by-products from bacterial fermentation of dietary carbohydrates'<sup>1</sup>. The prevalence of caries has an irregular spread among various subgroups of our country.

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Dental caries is more prevalent in poor and low socioeconomic groups in India with a higher caries prevalence rate being reported in tribal groups<sup>3</sup>. Dental caries is one of the primary clinical feature of poor oral health and the chief reason for patients to visit dental clinics or hospitals. Unfortunately, patients report at a stage when some amount of loss of tooth structure has already taken place.

Perambalur district is located in the centre of Tamilnadu state. The majority of the people belong to a lower socioeconomic status demonstrating a severe scale in the incidence of Dental caries & fluorosis. No previous study showing prevalence of dental caries in Perambalur district has been carried out so far. The study aims to assess the prevalence of dental caries in school going children of Perambalur district.

### **MATERIALS AND METHODS:**

#### **School oral health program:**

Camp records containing data on Oral Screening and Health Awareness programmes conducted by the Department of Public Health Dentistry and the Department of Pediatric and Preventive Dentistry, of Dhanalakshmi Srinivasan Dental College, Siruvachur in rural and urban school children of Perambalur district between December 2020 and September 2022 were analysed. Children

had been screened for general oral hygiene, carious teeth, fluorosis, malocclusions and oral hygiene instructions were given.

A cross-sectional secondary data analysis was done on the data collected by non-probability convenience sampling. School children in the age group of 9 to 12 years of age were considered for the study. The tooth was chosen as decay (D component) if there was any visible evidence of dental caries. The M component (missing) included teeth with indications for extraction or those previously extracted due to caries. The F component (filling) included teeth with permanent restorations. T component included teeth that had undergone endodontic treatment with crown and also fixed prosthesis. Children who did not fall into the appropriate age category (9-12 years) at the time of sampling were excluded.

### **RESULTS:**

A total of 896 school-going children in the age group of 9 to 12 years were screened for identification of dental caries and evaluation of general oral health. The study population included 430 children (47.9%) belonging to urban school, and the remaining 466 children (52.0%) were from rural school. Rural school children showed a higher caries prevalence of 83.69

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%( 3.26±1.67) as compared to urban school children with a prevalence of 60.46% (0.91±0.76). DMFT score was very high in rural population (3.5±1.91) when compared with the urban group (1.08±0.6). The difference in caries prevalence between the urban and rural groups was highly statistically significant (p = 0.000). The difference in the DMFT scores among the two age groups was similarly highly statistically significant (p = 0.000\*). (Table 1 and Fig. 1). Also, the difference in the prevalence of dental caries between male and female children was statistically significant (p=0.000\*).

### DISCUSSION:

According to the World Health Organization bulletin (2005), Dental Caries prevalence involves close to nearly 100% of the population in majority of countries.<sup>5</sup> The World Health Organization (WHO) estimated the global DMFT index of 188 countries for 12-year-olds in 2004 and also reported that 200,335,280 teeth were affected by one of the features of DMFT among that age group<sup>4</sup>. In this present study, caries prevalence among school children in urban area (60.46%) was lower as compared to school going children in rural area (83.69%) [9-11]. On the other hand, very few studies report a higher prevalence rate in urban areas<sup>6-9</sup>.

The overall caries prevalence was 72.54%. According to National Oral Health Survey, 2002-2003, the caries prevalence rate was found among male school children 82.64%. On the other hand mean decay score was very high (4.07±2.05) among female school children. This variation is probably due to differences in criteria used for caries diagnosis, personal and dietary habits changes and difference in oral hygiene measures which have marked influence on caries prevalence.

The limitation of the study was that it only addressed the prevalence and severity of the disease without looking at sociodemographic variables such as parental education, economic status or family size. Furthermore, the current paper only reports on dental caries status and does not examine oral hygiene practices or other individual factors responsible for high caries prevalence.

### CONCLUSION:

The lack of dental health awareness, poor oral hygiene measures, socioeconomic status, improper dietary habits and minimal utilization of dental health care services in Perambalur district are primary factors resulting in high prevalence of dental caries. Dental health education and caries preventive programs must be implemented to minimize caries incidence

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in the locality. School teachers could play a crucial role in creating oral health awareness by promoting the importance of milk teeth and by implementing preventive strategies which focuses on good dietary and brushing habits.

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**TABLE 1: COMPARISON OF DMFT&E SCORES BETWEEN RURAL AND URBAN AREA SCHOOL CHILDREN.**

COMPONENT	T VAL UE	MEAN differenc e	STANDA RD ERROR	P VALUE
D (Decay)	31.29 8	2.593	.083	.000*
M(Missing)	1.997	.053	.027	.001*
F(Filled)	.500	.010	.020	.172
T(Treated)	.157	.002	.015	.457
E(Exfoliated)	.365	.005	.013	.367
DMFT SCORE	28.51 5	2.623	.092	.000*

**\*Man-Whitney U test, significant level  $P \leq 0.05$ .**

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**TABLE 2: COMPARISON OF DMFT&E SCORES BETWEEN MALE AND FEMALE SCHOOL CHILDREN AMONG RURAL AND URBAN AREA.**

<b>GROUP</b>	<b>GENDER (N)</b>	<b>D</b>	<b>M</b>	<b>F</b>	<b>T</b>	<b>E</b>	<b>DMFT SCORE</b>
Rural	Male (242)	(82.64 %)2.45 ±1.29	0.12±0.3 3	0.6±0.24	0.04±0 .19	0.2±0.1 5	2.70±1.53
	Female (188)	(81.11 %)4.07 ±2.05	0.14±0.3 4	0.5±0.22	0.2±0. 145	0.2±14 5	4.30±2.29
	P VALUE	<b>0.000*</b>	0.662	0.699	0.246	0.811	<b>0.000*</b>
Urban	Male(304)	(57.89 %)0.5± 0.66	0.7±2.4	0.4±0.18	0.2±0. 5	0.1±0.1 1	0.67±0.64
	Female(162)	(74.07 %)1.33 ±0.86	0.07±0.2 0	0.04±0.2 0	0.02±0 .15	0.02±0. 13	1.49±1.04
	P VALUE	<b>0.000*</b>	0.931	0.699	0.246	0.811	<b>0.000*</b>

**\*Man-Whitney U test, significant level P≤0.05.**

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**FIGURE 1 : COMPARISON OF DMFT&E SCORES BETWEEN MALE AND FEMALE SCHOOL CHILDREN AMONG RURAL AND URBAN AREA.**

