

## Original Research

### Prevalence of dental caries among school going children

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#### ABSTRACT:

**Background:** Dental caries is an infectious microbial disease of multifactorial origin in which diet, host, and microbial flora interacts over a period of time in such a way so as to encourage demineralization of the tooth enamel with resultant caries formation. The present study was conducted to assess prevalence of dental caries among school going children. **Materials & Methods:** 480 school-going children of both genders were selected. Clinical examination was carried out using mouth mirror, probe, and explorer. The examination was done under natural daylight using the WHO criteria. **Results:** Out of 480 children, 210 were boys and 270 were girls. Out of 210 boys, 52 had dental caries and out of 270 girls, 60 had dental caries. Age group 5-8 years had 34 children, 8-11 years had 50 and 11-14 years had 28 children. Tooth brushing frequency was <once a day in 76, 1-2 times a day in 20 and 2 times a day in 16 children. Plaque accumulation was seen in 86 and not seen in 26. The difference was significant ( $P < 0.05$ ). **Conclusion:** There was high prevalence of dental caries among age group 8-11 years/ Most of the children had poor oral hygiene.

**Key words:** Caries, School children, Tooth brushing

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#### INTRODUCTION

Oral health is an important component of general health, with dental caries affecting a person's ability to eat, speak or socialize.<sup>1</sup> Dental caries is an infectious microbial disease of multifactorial origin in which diet, host, and microbial flora interacts over a period of time in such a way so as to encourage demineralization of the tooth enamel with resultant caries formation. Dental caries, the product of man's progress toward civilization, has a very high morbidity potential and thus, is coming into focus of the mankind.<sup>2</sup> The caries experience varies greatly among countries and even within small regions of countries. It varies with age, and sex, socioeconomic conditions, ethnicity, diet, medical conditions of the patient, oral hygiene practices, etc., and even within oral cavity all the teeth and surfaces are not equally susceptible to caries.<sup>3</sup>

Historically, the diagnosis of bacterial etiology in caries development can be attributed to W. D. Miller in 1883. Despite centuries of evolution and breakthrough advancements in the medical facilities and armamentarium, a reduction in the occurrence and also in the prevention of dental caries has yet to be

achieved by humankind.<sup>4</sup> An upward drift in the dental caries is witnessed recently in the majority of the developing nation's world over. An increase in sugar intake and decreased fluoride exposure may be largely responsible for this. Thus, there has been a decrease in the emphasis on the fact that caries is youngster's pathology, and we are yet to achieve a significant reduction in the caries disease process.<sup>5</sup> The present study was conducted to assess prevalence of dental caries among school going children.

#### MATERIALS & METHODS

The present study comprised of 480 school-going children of both genders. The study protocol was approved form institutional ethical committee. Parental consent was obtained before starting the study.

Data such name, age, gender etc. was recorded. Clinical examination was carried out using mouth mirror, probe, and explorer. The examination was done under natural daylight using the WHO criteria. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant ( $P < 0.05$ ).

**RESULTS**

**Table I Distribution of patients**

<b>Total- 480</b>		
<b>Gender</b>	<b>Boys</b>	<b>Girls</b>
Number	210	270

Table I shows that out of 480 children, 210 were boys and 270 were girls.

**Table II Prevalence of dental caries**

<b>Total</b>	<b>Number</b>	<b>Prevalence</b>
Boys	210	52
Girls	270	60

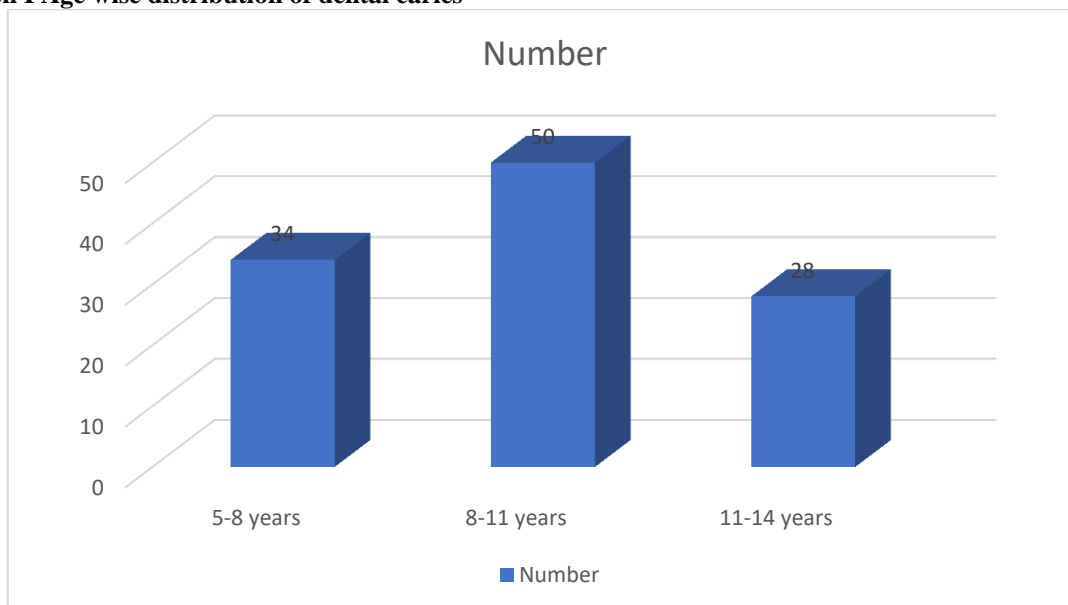
Table II shows that out of 210 boys, 52 had dental caries and out of 270 girls, 60 had dental caries.

**Table III Age wise distribution of dental caries**

<b>Age group (Years)</b>	<b>Number</b>	<b>P value</b>
5-8	34	0.05
8-11	50	
11-14	28	

Table III shows that age group 5-8 years had 34 children, 8-11 years had 50 and 11-14 years had 28 children. The difference was significant ( $P < 0.05$ ).

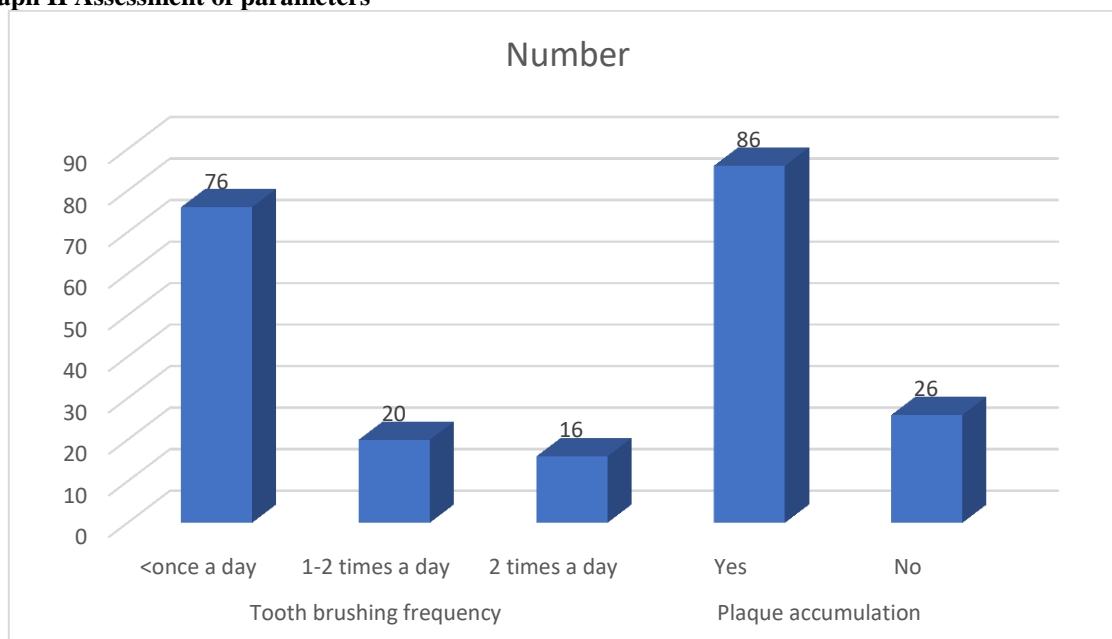
**Graph I Age wise distribution of dental caries**



**Table IV Assessment of parameters**

<b>Parameters</b>	<b>Variables</b>	<b>Number</b>	<b>P value</b>
Tooth brushing frequency	<once a day	76	0.02
	1-2 times a day	20	
	2 times a day	16	
Plaque accumulation	Yes	86	0.01
	No	26	

Table IV, graph II shows that tooth brushing frequency was <once a day in 76, 1-2 times a day in 20 and 2 times a day in 16 children. Plaque accumulation was seen in 86 and not seen in 26. The difference was significant ( $P < 0.05$ ).

**Graph II Assessment of parameters**

## DISCUSSION

The prevention of dental caries has long been considered as an important task for the health professionals. Scientists are continuing their research in identifying the best practices for diagnosis, treatment, and prevention of dental caries.<sup>6</sup> Previous methods for the treatment of dental caries in a surgical manner has been replaced by newer strategies that emphasize disease prevention and conservation of tooth structure.<sup>7</sup> Voluminous literature exists on the status of the dental caries in the Indian population. It has been observed that in 1940 the prevalence of dental caries in India was 55.5%, and in 1960 it was reported to be 68%. Overall, the general impression is that dental caries has increased in prevalence and severity in urban and cosmopolitan population since last two decades.<sup>8</sup> However, there is no definite picture as yet regarding the disease status in rural and backward areas of country in the comparison where 80% of the population inhabits.<sup>9</sup> A very extensive and comprehensive National Health Survey conducted in 2004 throughout India has shown dental caries prevalence as follows: 51.9% in 5-year-old children, 53.8% in 12-year-old children and 63.1% in 15-year-old teenagers. The report concluded that a preventive program, such as water fluoridation, should be started to address this national crisis in dental caries.<sup>10</sup> The present study was conducted to assess prevalence of dental caries among school going children.

In present study, out of 480 children, 210 were boys and 270 were girls. Age group 5-8 years had 34 children, 8-11 years had 50 and 11-14 years had 28 children. Singh et al<sup>11</sup> in their study enrolled six thousand eight hundred and ninety school-going children. General clinical examination was carried out. The prevalence of caries was recorded. The prevalence was 26.02%. Among these children with

dental caries, 50.25% of the children belonged to the age group of 13-15 years, while the remaining 49.75% of the children belonged to the age group of 9-12 years. Prevalence of dental caries was significantly higher in females (71.11%) in comparison to males. Furthermore, dental caries was significantly more prevalent among participants with toothbrushing frequency of less than once a day (51.20%). There is an imperative need for intimidating health check-up camps among school-going children.

We observed that age group 5-8 years had 34 children, 8-11 years had 50 and 11-14 years had 28 children. Ingle et al<sup>12</sup> assessed the prevalence of dental caries among 12-15 years old government and private school children. This was a cross-sectional study carried out on total 1400 school children, of which 700 school children were from government schools and 700 were from private schools. Simple random sampling methodology was used to select the sample. The subjects were examined for dental caries according to WHO 1997 assessment form. Significant Caries Index was also used to assess the prevalence of dental caries. The prevalence of dental caries was found higher among government school children, that is, 53%, when compared to private school children, that is, 47% and this difference was found to be statistically significant. The mean decayed, missing, and filled teeth were found to be higher in government school children ( $7.61 \pm 2.86$ ) as compared to private school children ( $4.76 \pm 2.42$ ).

We observed that tooth brushing frequency was <once a day in 76, 1-2 times a day in 20 and 2 times a day in 16 children. Plaque accumulation was seen in 86 and not seen in 26. Van et al<sup>13</sup> determined the prevalence of dental caries in primary and permanent teeth and identify factors associated with dental caries among secondary school children in rural highland Vietnam.

This was a cross-sectional study that included 1985 secondary schoolchildren. Dental examination was performed at school using World Health Organization criteria. Data collection on demographic characteristics and knowledge, attitude, and practices related to dental caries was conducted by interviewing children. Prevalence of caries in primary and permanent teeth was 41.1 and 68.9%, respectively. Prevalence of caries in primary teeth in the age group 11–12 years old (59.4%) was significantly higher than in children in the age group of 13–14 years (27.8%;  $p < 0.01$ ). Factors associated with dental caries in primary teeth were age group of 11–12 years, belonging to the Jarai ethnic group, and having inadequate knowledge or attitude related to dental caries. Factors associated with dental caries in permanent teeth were having insufficient knowledge, attitude, and practices related to dental caries.

### CONCLUSION

Authors found that there was high prevalence of dental caries among age group 8-11 years/ Most of the children had poor oral hygiene.

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