

Prevalence of dental caries among school going children in North Bengal

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Abstract

Background: This study was done to evaluate the prevalence of dental caries among school going children in Siliguri, North Bengal. **Materials and methods:** This research involved a total of 100 participants. The guardians of each child consented to the study, resulting in the inclusion of all children. Each child underwent a comprehensive oral clinical examination to assess the presence of dental caries. The results were systematically recorded and analyzed utilizing SPSS software. **Results:** This investigation included 35 male and 65 female children. Out of 100 subjects, 72 reported cases of dental caries, and 28 cases showed an absence of the condition. Consequently, the prevalence of dental caries among the school children in this study was calculated to be 72%. **Conclusion:** The results of this study indicate that the prevalence of dental caries in school-aged children was found to be 72%.

Keywords: Dental caries, Prevalence, School children

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Introduction

Dental caries represents the most widespread chronic illness among children, exerting a considerable influence on individuals, families, and society at large. Despite its high preventability, over 530 million children globally are affected by dental caries in their primary teeth, with a significant proportion of these decayed teeth remaining unaddressed.^{1,2}

Recent trends in India reveal an increase in oral health issues, with dental caries being the most significant concern. Over the past fifty years, there has been a consistent rise in both the prevalence and severity of this condition. Dental caries affects children of all ages, necessitating restorative or even pulp therapy. From a child's viewpoint, these treatments can be mentally taxing and demanding, in addition to being economically burdensome. Therefore, the prevention of caries emerges as the most effective and financially sensible strategy. Consequently, gathering data on the prevalence of caries and the associated treatment needs is crucial for developing a preventive approach to this disease.³⁻⁵

This study was done to evaluate the prevalence of dental caries among school going children in Siliguri, North Bengal.

Materials and methods

This research involved a total of 100 participants. The guardians of each child consented to the study, resulting in the inclusion of all children. Each child

underwent a comprehensive oral clinical examination to assess the presence of dental caries. Children who needed treatment were referred to North Bengal Dental College and Hospital. Oral health education and correct tooth brushing method was also demonstrated to all the children. The collected data were entered into Microsoft Excel and analyzed using Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics were used to summarize the data. Categorical variables were expressed as frequencies and percentages. The prevalence of dental caries was calculated as the proportion of children diagnosed with dental caries among the total study population. A p-value of less than 0.05 was considered statistically significant wherever applicable.

Results

Table 1: Gender-wise distribution of subjects

Gender	Number of subjects	Percentage
Males	35	35
Females	65	65
Total	100	100

This investigation included 35 male and 65 female children.

Table 2: Prevalence of dental caries among school children.

Prevalence	Number of subjects	Percentage
Absent	28	28
Present	72	75
Total	100	100

Out of 100 subjects, 72 reported cases of dental caries, and 28 cases showed an absence of the condition. Consequently, the prevalence of dental caries among the school children in this study was calculated to be 72%.

Table 3: Association Between Gender and Prevalence of Dental Caries (Tentative Data)

Gender	Dental Caries Present n (%)	Dental Caries Absent n (%)	Total n (%)	χ^2 value	p-value
Male	22 (62.9%)	13 (37.1%)	35 (100%)	2.05	0.152
Female	50 (76.9%)	15 (23.1%)	65 (100%)		
Total	72 (72.0%)	28 (28.0%)	100 (100%)		

Dental caries was observed in 22 (62.9%) male and 50 (76.9%) female children. Although the prevalence of dental caries was higher among females, the association between gender and the presence of dental caries was not statistically significant ($\chi^2 = 2.05$, $p = 0.152$).

Discussion

Globally, there has been a rise in the incidence of dental caries, particularly in emerging economies. In contrast, developed nations are witnessing a decline in prevalence, attributed to enhanced oral hygiene practices and the establishment of community-level prevention initiatives.⁶

However, the surge in caries cases in developing regions is primarily linked to the inadequacies of the oral health care system, which predominantly emphasizes curative measures without regular implementation of community health prevention and oral health promotion strategies. Dental caries is a prevalent dental condition that manifests during childhood and remains a significant public health concern.⁷ The World Health Organization (WHO) has identified it as the third most critical chronic non-communicable disease necessitating global efforts for its prevention and treatment.⁸ This study was done to evaluate the prevalence of dental caries

among school going children in Siliguri, North Bengal.

This investigation included 35 male and 65 female children. Out of 100 subjects, 72 reported cases of dental caries, and 28 cases showed an absence of the condition. Consequently, the prevalence of dental caries among the school children in this study was calculated to be 72%.

Singh I et al⁹ assessed the prevalence of dental caries among school-going children. Six thousand eight hundred and ninety school-going children was enrolled. General clinical examination was carried out. Mouth mirror, probe, and explorer were used for carrying out the clinical examination. Over a span of 6 months, the entire study was completed. All the examiners who performed clinical examination underwent a single-day training program for detecting dental caries. All the participants were seated on straight wooden chairs and were examined clinically. 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 intimating health check-up camps among school-going children. Mahesh Kumar P et al¹⁰ conducted a study to assess the oral health status of 5 years and 12 years school going children in Chennai city. The study population consisted of 1200 school children of both the sexes (600 private and 600 corporation school children) in 30 schools, which had been selected randomly. The survey is based on WHO, 1999 Oral Health Assessment, which has been modified by including gingival assessment, enamel opacities/hypoplasia for 5 years. Evaluation of the oral health status of these children revealed, dental caries is the most prevalent disease affecting permanent teeth, more than primary teeth and more in corporation than in private schools, thereby, correlating with the socioeconomic status. It may be concluded that the greatest need of dental health education is at an early age including proper instruction of oral hygiene practices and school based preventive programs, which would help in improving preventive dental behaviour and attitude which is beneficial for life time.

Conclusion

The present study demonstrated a high prevalence of dental caries, affecting 72% of the school-going children examined in Siliguri, North Bengal. This finding highlights the substantial burden of dental caries among children and emphasizes the need for early identification and timely preventive measures. Regular school-based oral health screening,

effective oral health education, promotion of proper tooth-brushing practices, and improved access to preventive and restorative dental care may help reduce the burden of dental caries in this population. Strengthening community-based preventive programs is therefore essential for improving the oral health of school-going children.

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