

Original Research

Prevalence of dental caries in school going children

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ABSTRACT:

Background: To evaluate the prevalence of dental caries in school going children. **Materials & methods:** The study was carried out on 100 school going children. Children were of age group 6-8 years. This study was completed in a span of 1 month. Complete screening of children was done. The children were examined individually in the school premises by using plane mouth mirrors and community periodontal index probe. The examination was done under natural day light using WHO criteria. The dmft index values are recorded and mean deviation is calculated. Data was collected and evaluation was done. Results were analysed using SPSS software. **Results:** In this study, a total of 100 school children were enrolled. Out of which 60 were boys and 40 were girls. The prevalence of dental caries was 66.7% among boys and 50% among girls. The girls had lower dmft scores than boys and the overall prevalence was 60%. Restored teeth were only 5.4% and extracted teeth accounted for 3%. The mean dmft score for boys was 2.73 and girls was 2.66. **Conclusion:** The prevalence of dental caries among 6-8 years old children is high.

Keywords: dental caries, children, prevalence.

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INTRODUCTION

Oral health is defined as a state of the mouth and its associated structures, where there is no disease or pain and able to function well to masticate food and state of teeth which are of a socially acceptable appearance.

¹ Oral health is integral to general health and essential for well-being. Dental caries are most common among the spectrum of oral diseases and are still a major public health burden in developing countries, affecting 60%-90% of school children and a number of adults. ²

Dental caries is the most prevalent chronic disease affecting humans irrespective of age, sex, race and socioeconomic status. ³ Various studies report varying levels of caries prevalence in India. In the National Oral Health Survey conducted in 2002, the caries prevalence in the 12-year-old school children was 52.5%. ⁴ Epidemiological surveys are important for monitoring trends in dental caries and for assessing the dental needs. ⁵ According to the World Health Organization (WHO 1997), detection of dental caries in surveys has been performed at cavitation level because examiners frequently cannot reliably assess the non-cavitated lesions. However, the inclusion of

non-cavitated caries lesions is necessary since these can be arrested through certain preventive measures and lowering the cost of restorative treatment. ⁶

Considering that school age is an influential period during which every child extends health related behaviors, beliefs, and attitudes and that the disease is irreversible, efforts should be focused on revealing factors that predispose/resist students to dental caries during this stage. ⁷ An extent spectrum of factors influencing this disease has been documented in the literature. However, because socioeconomic factors have the possibility to influence the prevalence of dental caries in children through their effects on oral health practices and parental oral health knowledge and attitudes as well as health care accessibility, recently, they have concerned the investigators. ^{8,9} Hence, this present study was conducted to show the prevalence of dental caries among school going children.

MATERIALS & METHODS

The study was carried out on 100 school going children. Children were of age group 6-8 years. This study was completed in a span of 1 month. Complete

screening of children was done. The children were examined individually in the school premises by using plane mouth mirrors and community periodontal index probe. The examination was done under natural day light using WHO criteria. The children were examined for the presence of decay, missing and filled teeth (dmft) index was used to record primary dentition status. The dmft index values are recorded and mean deviation is calculated. Data was collected and evaluation was done. Results were analysed using SPSS software.

RESULTS

In this study, a total of 100 school children were enrolled. Out of which 60 were boys and 40 were girls. The prevalence of dental caries was 66.7% among boys and 50% among girls. The girls had lower dmft scores than boys and the overall prevalence was 60%. Restored teeth were only 5.4% and extracted teeth accounted for 3%. The mean dmft score for boys was 2.73 and girls was 2.66. According to residential area, the rural population had 55% and urban had 45% of caries prevalence rate.

Table 1: Prevalence of dental caries

Variables	Number of children examined	Children affected	Percentage %	Score DMFT (mean)
Gender				
Boys	60	40	66.7	2.73
Girls	40	20	50	2.66
Total	100	60	60	2.70

Table 2: according to residence prevalence rate of dental caries

Residence	Number	Percentage %
Rural	55	55
Urban	45	45

DISCUSSION

Dental caries is a common dental disease occurring during childhood and it continues to be a major public health problem.¹⁰ The World Health Organization (WHO) has ranked it as number three among all chronic non-communicable diseases that require worldwide attention for prevention and treatment.¹¹ ICDAS (International Caries Detection and Assessment system) is a universally accepted system to evaluate the prevalence of dental caries, in which estimation of early enamel lesions, helps in planning early treatment and monitoring caries pattern at the population level.¹² In this study, a total of 100 school children were enrolled. Out of which 60 were boys and 40 were girls. The prevalence of dental caries was 66.7% among boys and 50% among girls. The girls had lower dmft scores than boys and the overall prevalence was 60%. Restored teeth were only 5.4% and extracted teeth accounted for 3%.

Dental caries is the most common type of oral health problem globally. It is known to have multifactorial etiology with a number of variables that influence the

prevalence of the condition. One of the study by Goenka P et al was carried out with an aim to determine the prevalence of dental caries in children of 5 to 13 years. It was a descriptive type of epidemiological study and the design adopted for the study was cross-sectional. No active intervention and follow-up examinations were performed. A total of 1,000 children of 5 to 13 year age group were examined for the study. The study population was categorized based on age, sex, location, and socioeconomic status. The examination procedure and criteria were those recommended by the World Health Organization (WHO). The difference in the caries prevalence between the age groups and between the socioeconomic level was very highly significant ($p = 0.001$). There was a statistically significant difference observed in the prevalence of caries between the sexes ($p = 0.016$) as well as between urban and rural ($p = 0.018$). It is expected that the data obtained with the help of this survey will prove to be very useful to the concerned authorities in handling dental caries which is a biosocial disease rooted in the technology and economy of our society.¹³ In the present study, the mean dmft score for boys was 2.73 and girls was 2.66. According to residential area, the rural population had 55% and urban had 45% of caries prevalence rate.

One of the study by Aranganal P et al was conducted in which the prevalence of dental caries was 68.8% in the total surveyed population. The gender-wise prevalence of dental caries shows, females to have slightly higher prevalence than male. The prevalence of dental caries at the age group of 6 years was 57%, seven year 67%, eight year 63%, nine year 74%, 10 year 76%, 11 year 74%, 12 year 69%, 13 year 71%, and 14 year 69%. The distribution of CARS (Caries associated with Sealants and Restorations) in the surveyed population was only 1.4%.¹⁴

Another study by Karunakaran R et al was conducted to determine the prevalence of dental caries in primary teeth among 4-6 years old school going children in the Namakkal District. The age group selected for this study ranged from 4 to 6 years of age. Each child was examined in their respective schools by one of the four calibrated examiners and decay, missing and filled teeth (dmft) index was recorded along with demographic details. Of 850 children examined, 560 (65.88%) children had dental caries. Mean dmft score was 2.86. Prevalence of dental caries was higher in boys (69.6%) than in girls (61.5%). The untreated decay teeth accounted for 92.4%.¹⁵

CONCLUSION

The prevalence of dental caries among 6-8 years old children is high.

REFERENCES

1. Yewe-Dyer M. The definition of oral health. *Br Dent J.* 1993;174(7):224-25.
2. Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks

- to oral health. *Bull World Health Organ.* 2005;83(9):661–69
3. Peterson PE. The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century – the approach of the WHO Global Oral Health programme. *Community Dentistry and Oral Epidemiology.* 2003;31(Supp-1):3–24.
 4. National Oral Health Survey and Fluoride Mapping. Dental Council of India. New Delhi: 2004. An Epidemiological Study of Oral Health Problems and Estimation of Fluoride Levels in Drinking Water.
 5. Bonecker M, Marcenes W, Sheiham A. Caries reductions between 1995, 1997 and 1999 in preschool children in Diadema, Brazil. *Int J Paediatr Dent.* 2002;12(3):183–88.
 6. Pitts N. 'ICDAS' – an international system for caries detection and assessment being developed to facilitate caries epidemiology, research and appropriate clinical management. *Community Dent Health.* 2004;21(3):193–98
 7. Mitrakul K., Asvanund Y., Arunakul M., et al. Assessing associations between caries prevalence and body mass index and nutritional data among children aged 6–12 years. *The Southeast Asian Journal of Tropical Medicine and Public Health.* 2016;47(47):152–159
 8. Joshi N., Sujana S. G., Joshi K., Parekh H., Dave B. Prevalence, severity and related factors of dental caries in school going children of Vadodara city—an epidemiological study. *Journal of International Oral Health.* 2013;5(4):40–48.
 9. Kato H., Tanaka K., Shimizu K., et al. Parental occupations, educational levels, and income and prevalence of dental caries in 3-year-old Japanese children. *Environmental Health and Preventive Medicine.* 2017;22(1):p. 80. doi: 10.1186/s12199-017-0688-6.
 10. Sohi RK, Gambir RS, Veersha KL, Randharva AK, Singh G. Assessment of prevalence of dental caries among 5 and 12 years old school children in Chandigarh (U.T), India. *Arch Oral Res.* 2012;8(1):39–45.
 11. Marrs JA, Trumbley S, Malik G. Early childhood Caries determining the risk factors and assessing the prevention strategies for nursing intervention. *PediatrNurs.* 2011;37(1):9–15.
 12. Honkala E, Runnel R, Honkala S, Olak J, Vahlberg T, Saag M, Makinen KK. Measuring dental caries in the mixed dentition by ICDAS. *International Journal of Dentistry.* 2011;150424:1–6
 13. Goenka P, Dutta S, Marwah N, Sarawgi A, Nirwan M, Mishra P. Prevalence of Dental Caries in Children of Age 5 to 13 Years in District of Vaishali, Bihar, India. *Int J Clin Pediatr Dent.* 2018 Sep-Oct;11(5):359-364. doi: 10.5005/jp-journals-10005-1540. Epub 2018 Oct 1. PMID: 30787546; PMCID: PMC6379529.
 14. Arangannal P, Mahadev SK, Jayaprakash J. Prevalence of Dental Caries among School Children in Chennai, Based on ICDAS II. *J Clin Diagn Res.* 2016 Apr;10(4):ZC09-12. doi: 10.7860/JCDR/2016/14731.7523.
 15. Karunakaran R, Somasundaram S, Gawthaman M, Vinodh S, Manikandan S, Gokulnathan S. Prevalence of dental caries among school-going children in Namakkal district: A cross-sectional study. *J Pharm Bioallied Sci.* 2014 Jul;6(Suppl 1):S160-1. doi: 10.4103/0975-7406.137432. PMID: 25210362; PMCID: PMC4157258