International Journal of Research in Health and Allied Sciences

Journal home page: www.ijrhas.com

Official Publication of "Society for Scientific Research and Studies" [Regd.]

ISSN: 2455-7803

Original Research

Prevalence of Dental caries in school going children

Aashna Singh[1], Jasleen Kaur[2]

[1, 2]Intern, National Dental College and Hospital, Punjab

ABSTRACT:

Background: To evaluate the prevalence of dental caries in school going children. **Materials & methods:** The study was carried out on 200 school going children. Children were of age group 5-8 years. This study was completed in a span of 1 month. 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:** A total of 200 school children were enrolled. Out of which 140 were boys and 60 were girls. The prevalence of dental caries was 64.2% among boys and 46.7% among girls. The girls had lower dmft scores than boys and the overall prevalence was 59%. **Conclusion:** The prevalence of dental caries was high in school going children.

Keywords: Dental caries, Prevalence, Children

Received: 13 August, 2022 Accepted: 25 August, 2022

Corresponding Author: Aashna Singh, Intern, National Dental College and Hospital, Punjab

This article may be cited as: Singh A, Kaur J. Prevalence of Dental caries in school going children. Int J Res Health Allied Sci 2022; 8(5):54- 56

INTRODUCTION

Dental caries is the most prevalent chronic disease affecting humans irrespective of age, sex, race and socioeconomic status. [1] As around 90% of school children and most of the adults have been affected by dental caries, hence it has been considered as the most important global oral health burden. [2] Epidemiological surveys are important for monitoring trends in dental caries and for assessing the dental needs. [3] 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. [4] Hence, especially in a population with low prevalence of dental caries, the introduction of a criterion which include non-cavitated caries with the purpose of improving the sensitivity of caries epidemiology and clinical trial are required. [5]

Oral health care in rural areas are often limited due to shortage of dental manpower, financial constraints, and the lack of perceived need for dental care among rural masses. [6] Among oral diseases, the dental caries is an important dental public problem in India and is predominantly a disease of childhood. [7,8] Pain due to dental caries can affect normal food intake and daily curriculum and sports activities in the children. Dental caries has high prevalence all around the world involving the people of all region and society. [9] In India, only sporadic data regarding dental caries is available. Most of studies have been localized to a smaller area involving a particular community. India is a country known for the difference in culture with the vast diversity in region, religion, language, caste, and race. Studies have shown that in developing countries changing lifestyles and dietary patterns are increasing the incidence of caries. [10] Hence, this study was conducted to evaluate the prevalence of dental caries in school going children.

Materials & methods

The study was carried out on 200 school going children. Children were of age group 5-8 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

A total of 200 school children were enrolled. Out of which 140 were boys and 60 were girls. The prevalence of dental caries was 64.2% among boys and 46.7% among girls. The girls had lower dmft scores than boys and the overall prevalence was 59%. Restored teeth were only 4.9% and extracted teeth accounted for 2.5%. The mean dmft score for boys was 2.65 and girls was 2.50. According to residential area, the rural population had 60% and urban had 40% of caries prevalence rate.

Table 1 : Prevalence of dental caries

Variables	Number of children examined	Children affected	Percentage %	Score dmft (mean)
Gender				
Boys	140	90	64.2	2.65
Girls	60	28	46.7	2.50
Total	200	118	59	2.56

Table 2: according to residence prevalence rate of dental caries

Residence	Number	Percentage %
Rural	120	60
Urban	80	40

Discussion

Dental caries, which develops over certain duration of time leading to tooth demineralization, is basically caused by microbes when multiple factors such as diet, host, and microbial flora interact with each other under optimum conditions. The evolution of dental caries can be linked to progressive human civilizations, and recently, it has come under increased focus due to its high morbidity potential. [11] The experience of dental caries varies from country to country and also among the different regions of the same country. The expression of dental caries not only differs with age, sex, socioeconomic status, dietary habits, ethnic beliefs, general medical condition of individuals, and overall oral hygiene but also has a variable frequency and distribution on different teeth and also their surfaces. [12] Apart from putting a financial stress, it also leads to severe discomfort and pain. Health professionals have long been trying to find out ways to prevent the occurrence of dental caries. Scientists all over the world are carrying out research activities to identify the best possible means to diagnose, treat, and also to prevent the occurrence of dental caries. [13] Of late, the emphasis on the prevention of disease and conservation of tooth structure has replaced the old surgical means for treating dental caries. [14] Hence, this study was conducted to evaluate the prevalence of dental caries in school going children.

In the present study, a total of 200 school children were enrolled. Out of which 140 were boys and 60 were girls. The prevalence of dental caries was 64.2% among boys and 46.7% among girls. The girls had lower dmft scores than boys and the overall prevalence was 59%. A study by Youssefi MA et al, a total of 460 children aged 7–12 years were investigated. The prevalence of dental caries in primary, permanent, and whole dentition among children was 75.3%, 41.1%, and 89.8%, respectively. Among all considered factors, the caries presence in primary teeth was inversely ($p < 0.001$) and in permanent teeth was positively ($p < 0.001$) associated with the children's age. Moreover, the odds of decaying permanent teeth were significantly higher in girls, in rural children, and in children whose fathers were not an employee compared to their counterparts ($p=0.04$, $p < 0.001$, and $p=0.02$, respectively). The prevalence of dental caries among the studied primary schoolchildren in mixed dentition was high and associated with their sociodemographic factors. Providing and implementing preventive, therapeutic, and informative programs for controlling dental caries at individual, family, and school levels are necessary for local health policymakers. [15]

In the present study, restored teeth were only 4.9% and extracted teeth accounted for 2.5%. The mean dmft score for boys was 2.65 and girls was 2.50. According to residential area, the rural population had 60% and urban had 40% of caries prevalence rate. Another study by Singh I et al, 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. [16] Hiremath A et al, the overall caries prevalence was 78.9%, mean dmft was 2.97±2.62 and mean DMFT was 0.17±0.53. The decayed teeth component was the principal component in both dmft and DMFT indices. The mean dmft in boys was higher compared to girls and it was found to be statistically significant ($p<0.05$). They provided us with the baseline data, using which treatment was provided to all the children screened. The children were provided treatment at the camp site/dental hospital/satellite centers and primary health care centers according to the facilities available. [17] Arangannal P et al, 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%. The distribution of non-cavitated/early enamel lesions was higher in the studied population and indicated a requirement of a sustained dental health preventive program targeting specific segments of the population. [18]

Conclusion

The prevalence of dental caries was high in school going children.

References

1. 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.
2. Peterson PE. The global burden of oral diseases and risk to oral health. Bulletin of the World Health Organization. 2005;83(9):661–69.
3. 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.
4. 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.
5. Assaf AV, decastro Meneghim M, Zanin L, Tengan C, Pereira AC. Effect of different diagnostic thresholds on dental caries calibration -a 12 month evaluation. Community Dent Oral Epidemiol. 2006;34(3):213–19.
6. Saravanan S, Kalyani V, Vijayarani MP, Jayakodi P, Felix J, Arunmozhi P, et al. Caries prevalence and treatment needs of rural school children in Chidambaram Taluk, Tamil Nadu, South India. Indian J Dent Res. 2008;19:186–90.
7. Mittal M, Chaudhary P, Chopra R, Khattar V. Oral health status of 5 years and 12 years old school going children in rural Gurgaon, India: An epidemiological study. J Indian Soc Pedod Prev Dent. 2014;32:3–8.
8. Joshi N, Sujan S, Joshi K, Parekh H, Dave B. Prevalence, severity and related factors of dental caries in school going children of Vadodara city-an epidemiological study. J Int Oral Health. 2013;5:35–9.
9. Dhar V, Jain A, Van Dyke TE, Kohli A. Prevalence of dental caries and treatment needs in the school-going children of rural areas in Udaipur district. J Indian Soc Pedod Prev Dent. 2007;25:119–21.
10. Mahesh Kumar P, Joseph T, Varma RB, Jayanthi M. Oral health status of 5 years and 12 years school going children in Chennai city - An epidemiological study. J Indian Soc Pedod Prev Dent. 2005;23:17–22.
11. Bagramian RA, Garcia-Godoy F, Volpe AR. The global increase in dental caries. A pending public health crisis. Am J Dent. 2009;22:3–8.
12. Meyer-Lueckel H, Paris S, Shirkhani B, Hopfenmuller W, Kielbassa AM. Caries and fluorosis in 6- and 9-year-old children residing in three communities in Iran. Community Dent Oral Epidemiol. 2006;34:63–70.
13. Moses J, Rangeeth BN, Gurunathan D. Prevalence of dental caries, socio-economic status and treatment needs among 5-15 year old school going children of Chidambaram. J Clin Diagn Res. 2011;5:146–51.
14. Dash JK, Sahoo PK, Bhuyan SK, Sahoo SK. Prevalence of dental caries and treatment needs among children of Cuttack (Orissa) J Indian Soc Pedod Prev Dent. 2002;20:139–43.
15. Youssefi MA, Afroughi S. Prevalence and Associated Factors of Dental Caries in Primary Schoolchildren: An Iranian Setting. Int J Dent. 2020 Jan 21;2020:8731486.
16. Singh I, Kaur K, Narang S, Yadav S, Kaur S, Singh NV. Assessment of Prevalence of Dental Caries among School-going Children: A Cross-sectional Study. J Pharm Bioallied Sci. 2021 Jun;13(Suppl 1):S333-S335.
17. Hiremath A, Murugaboopathy V, Ankola AV, Hebbal M, Mohandoss S, Pastay P. Prevalence of Dental Caries Among Primary School Children of India - A Cross-Sectional Study. J Clin Diagn Res. 2016 Oct;10(10):ZC47-ZC50.
18. 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