

A Cross-sectional Study to Assess Prevalence of Early Childhood Caries in Mahbubnagar

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Abstract

Background: Early childhood caries (ECC) is a devastating form of caries that may affect the primary dentition as soon as infant's teeth erupt. The present study was conducted to assess prevalence of ECC in Mahbubnagar. **Materials and Methods:** The present study was conducted by the Department of Pedodontics and Preventive Dentistry to assess the prevalence of ECC in children aged between 24 and 71 months. Sample size for the study was 2400 children. The dentition status of the WHO oral health assessment form (2013) was used to record dental caries. The study was conducted over a period of 3 months. Ethical approval was obtained from the Institutional Ethics Committee. The data was statistically analyzed to find the prevalence of ECC and to determine the correlation, if any, between ECC and dietary practices. **Results:** In the present study, the sample size for the study was 2400 children; including 1046 boys (43.58%) and 1354 girls (56.41%) were screened. 26.76% of boys had ECC and 30.11% girls had ECC. Total 24.79% children had ECC. (Table 1). A total number of children who were having sugary diet were 412 out of which 410 (99.51%) children were having caries and mean deft was 4.31. A total number of children who did not have sugary diet were 1988 out of which 185 (9.30%) children were having caries and mean deft was 0.46. (Table 2). **Conclusion:** The present study concluded that 26.76% boys and 30.11% girls had ECC. Total prevalence of ECC was 24.79%. A total number of children who were having sugary diet 99.51% children were having caries and 9.30% children had caries that did not have sugary diet.

Keywords: Caries, Early childhood caries, Prevalence.

INTRODUCTION

Early childhood caries (ECC) is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a preschool-age child between birth and 71 months of age.^[1] ECC is a term proposed by the American Academy of Pediatric Dentistry and Centers for Disease Control and Prevention in 1994. It was used after recommendation by the National Institute of Dental and Craniofacial Research in 1999 and replaced the old names that described its etiology, such as nursing caries and baby bottle tooth decay.^[2] Factors such as malnutrition, genetic predisposition, poor health performance, specific eating habits, the presence of organisms affecting tooth decay such as streptococci, and fluoride and vitamin D deficiency, excessive sugar consumption and prolonged bottle-feeding, and other factors such as age, gender and place of residence of children are effective in causing tooth decay.^[3] The prevalence of ECC worldwide has been shown to be quite variable and ranges from 3% to 85% with strong correlation to economic status and ethnicity.^[4] Untreated

ECC can lead to harsh consequences such as abscesses, pain, malocclusions and lasting psychosocial impediments.^[5] The amount of decay seen is so deleterious that there is a need for deep sedation and general anesthesia as children are unlikely to sit for extensive treatments.^[6] The present study was conducted to assess prevalence of ECC in Mahbubnagar.

MATERIALS AND METHODS

The present study was conducted by the Department of Pedodontics and Preventive Dentistry to assess the prevalence

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Received: 02 Nov, 21; **Accepted:** 13 Dec 21; **Published:** 29 Dec, 21

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How to cite this article: Ahmed SA, Veldanda M, Lakavath KK, Nallagula H, Gudigopuram S, Banothu MN. A Cross-sectional Study to Assess Prevalence of Early Childhood Caries in Mahbubnagar. J Res Adv Dent 2022;13(1):112-114.

Access this article online

Website:
www.jrad.co.in

DOI:
<https://doi.org/10.53064/jrad.2022.13.1.120>

of ECC in children aged between 24 and 71 months. Sample size for the study was 2400 children; including 1046 boys (43.58%) and 1,354 girls (56.41%) were screened after obtaining written consent from parents/caregivers. The dentition status of the WHO oral health assessment form (2013) was used to record dental caries. The study was conducted over a period of 3 months. Ethical approval was obtained from the Institutional Ethics Committee. The children were examined on a chair under broad day light using sterile dental mouth mirrors after drying the teeth with a cotton wool. All the children were examined by the same examiner. A two-part questionnaire, modified according to the Indian conditions, was used in this study.^[7] Data on social factors was recorded by interviewing the parents/caregivers in the first part while information pertaining to the brushing habits, diet intake, and deft score of the child was included in the second part. The data were statistically analyzed to find the prevalence of ECC and to determine the correlation, if any, between ECC and dietary practices. Statistical analysis was done with Statistical Package for the Social Sciences version 17 (Chicago Inc.).

RESULTS

In the present study, the sample size for the study was 2400 children; including 1046 boys (43.58%) and 1,354 girls (56.41%) were screened. 26.76% of boys had ECC and 30.11% girls had ECC. Total 24.79% children had ECC (Table 1). A total number of children who were having sugary diet were 412 out of which 410 (99.51%) children were having caries and mean deft was 4.31. A total number of children who did not have sugary diet were 1988 out of which 185 (9.30%) children were having caries and mean deft was 0.46 (Table 2).

DISCUSSION

The key factors driving the epidemic of tooth decay are the increasing consumption of sugary foods and drinks and the inadequate use of fluoridated toothpaste, water, salt and milk, to prevent tooth decay; inadequate economic resources to meet the need for dental treatment and also the lack of dentists that might be the reason for the escalating prevalence of ECC in developing countries.^[8]

Table 1: Prevalence of Early childhood caries

Gender	No. with ECC (%)	Mean deft $\pm$ SD
Boys (1046)	280 (26.76)	1.54 $\pm$ 2.13
Girls (1354)	315 (30.11)	
Total (2400)	595 (24.79)	

ECC: Early childhood caries

Table 2: Relationship between ECC and diet

Diet	Total no. of children	No. of children having caries (%)	Mean deft $\pm$ SD
Sugary	412	410 (99.51)	4.31 $\pm$ 1.21
Non sugary	1988	185 (9.30)	0.46 $\pm$ 0.67

ECC: Early childhood caries

In the present study, the sample size for the study was 2400 children; including 1046 boys (43.58%) and 1,354 girls (56.41%) were screened. 26.76% of boys had ECC and 30.11% girls had ECC. Total 24.79% children had ECC. A total number of children who were having sugary diet were 412 out of which 410 (99.51%) children were having caries and mean deft was 4.31. A total number of children who did not have sugary diet were 1988 out of which 185 (9.30%) children were having caries and mean deft was 0.46.

A study was conducted to compare the prevalence and pattern of caries in 4–5½-year-old children of urban Bangalore and non-urban Chikballapur within Karnataka state, India. The results showed caries prevalence of 66.3% with a mean deft of 2.9 in Bangalore city whereas in Chikballapur, the prevalence was 58.4% and the mean deft was 2.3.^[9]

In some studies in India where the prevalence of ECC among Anganwadi, children was observed to be 37.3% (Bengaluru, Karnataka)^[10] and 39.9% (Srinagar, Jammu and Kashmir).^[11]

The present study showed high correlation between ECC and the cariogenicity of diet, which was assessed by measuring the sweet score which is in line with several earlier studies.^[12,13]

The indiscriminate use of pediatric medicines and syrups which are mostly cariogenic may also be a contributing factor for ECC.^[14]

CONCLUSION

The present study concluded that 26.76% boys and 30.11% girls had ECC. Total prevalence of ECC was 24.79%. A total number of children who were having sugary diet 99.51% children was having caries and 9.30% children had caries who did not have sugary diet.

REFERENCES

- Koya S, Ravichandra KS, Arunkumar VA, Sahana S, Pushpalatha HM. Prevalence of early childhood caries in children of West Godavari district, Andhra Pradesh, South India: An epidemiological study. *Int J Clin Pediatr Dent* 2016;9:251-5.
- Drury TF, Horowitz AM, Ismail AI, Maertens MP, Rozier RG, Selwitz RH. Diagnosing and reporting early childhood caries for research purposes. A report of a workshop sponsored by the national institute of dental and craniofacial research, the health resources and services administration, and the health care financing administration. *J Public Health Dent* 1999;59:192-7.
- Moynihan P, Petersen PE. Diet, nutrition and the prevention of dental diseases. *Public Health Nutr* 2004;7:201-26.
- McMahon AD, Blair Y, McCall DR, Macpherson LM. Reductions in dental decay in 3-year old children in Greater Glasgow and Clyde: Repeated population inspection studies over four years. *BMC Oral Health* 2011;11:29.
- Livny A, Assali R, Cohen HD. Early childhood caries among a Bedouin community residing in the eastern outskirts of Jerusalem. *BMC Public Health* 2007;7:167.
- Winnier JJ, Parmar A, Mehta S, Bambal K, Bhatia R. Oral hygiene maintenance in children a survey of parental awareness. *Int J Oral Health Med Res* 2015;2:1-5.
- Ismail AI, Tanzer JM, Dingle JL. Current trends of sugar consumption in developing societies. *Community Dent Oral Epidemiol* 1997;25:438-43.

8. Prevention is better than treatment. Bull World Health Organ 2015;93:589-664.
9. Virjee K, Aradhya SM. Caries pattern in urban and non-urban children 4--5½ year old. J Indian Dent Assoc 1987;59:113-6.
10. Singh S, Vijayakumar N, Priyadarshini HR, Shobha M. Prevalence of early childhood caries among 3-5 year old pre-schoolers in schools of Marathahalli, Bangalore. Dent Res J (Isfahan) 2012;9:710-4.
11. Shah AF, Batra M, Aggarwal V, Dany SS, Rajput P, Bansal T. Prevalence of early childhood caries among preschool children of low socioeconomic status in district Srinagar, Jammu and Kashmir. Int Arch Integr Med 2015;2:8-13.
12. Nizel AE, Papas AS. Dietary counseling for the prevention and control of dental caries. In: Nutrition in Clinical Dentistry. 3rd ed. Philadelphia, PA: WB Saunders; 1989. p. 277-308.
13. Peressini S. Pacifier use and early childhood caries: An evidenced-based study of the literature. J Can Dent Assoc 2003;69:16-19.
14. World Health Organization. Global Strategy on Infant and Young Child Feeding. Geneva: World Health Organization; 2002. Available from: http://www.who.int/child-adolescent-health/publications/NUTRITION/IYCF_GS.htm [Last accessed on 2012 Jun 21].