

Assessment of 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. Hence; the present study was undertaken for assessing the prevalence of dental caries among school going children.

Materials & methods: A total of 500 school going children within the age group of 8 to 15 years were enrolled. Complete demographic and clinical details of all the patients were obtained. Age and gender-wise distribution of all the patients was done. All the patients were categorized according to socio-economic status. Prevalence of dental caries was recorded.

Results: Dental caries was found to be present in 238 children. Overall prevalence of dental caries was found to be 47.6 percent. Among these 238 patients with dental caries, 139 were males while 99 were females. 39.9 percent of the patients belonged to the age group of 11 to 12 years while 35.4 percent of the patients belonged to the age group of 13 to 15 years.

Conclusion: Significant proportion of school going children is affected by dental caries.

Key words: Children, Caries

Introduction

Oral health is an important component of general health, with dental caries affecting a person's ability to eat, speak or socialize. 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. 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.¹⁻³

In India, the trend indicates an increase in oral health problems especially dental caries, which has been consistently increasing both in prevalence and in severity over last five decades. Children of all age groups are affected by dental caries and its treatment is restorative care, which may even include pulp therapy. As these treatment options are not only expensive, but also demanding for the child. The best option, which is more acceptable and economical for the children is – Prevention. Thus, it becomes imperative to collect the data on prevalence of dental caries and treatment needs to determine the course of action for preventive care.⁴⁻⁶ Hence; the present study was undertaken for assessing the prevalence of dental caries among school going children.

Materials & methods

The present study was planned for assessing the prevalence of dental caries among school going children. A total of 500 school going children within the age group of 8 to 15 years were enrolled. Complete demographic and clinical details of all the patients were obtained. Age and gender-wise distribution of all the patients was done. All the patients were categorized according to socio-economic status. Prevalence of dental caries was recorded. Correlation of caries incidence and age and gender was also assessed. All the results were recorded and analyzed by SPSS software.

Results

A total of 500 school going children were enrolled. Dental caries was found to be present in 238 children. Overall prevalence of dental caries was found to be 47.6 percent. Among these 238 patients with dental caries, 139 were males while 99 were females. 39.9 percent of the patients belonged to the age group of 11 to 12 years while 35.4 percent of the patients belonged to the age group of 13 to 15 years.

Table 1: Prevalence of dental caries

Variable	Number of patients	Percentage
Dental caries	238	47.6
Overall subjects	500	100

Table 2: Gender-wise distribution of patients with dental caries

Gender	Number of patients	Percentage
Males	139	58.4
Females	99	41.6

Table 3: Age-wise distribution of patients

Age group (years)	Number of patients	Percentage
8 to 10	59	24.7
11 to 12	95	39.9
13 to 15	84	35.4
Total	238	100

Discussion

Dental caries is the most prevalent chronic disease affecting humans irrespective of age, sex, race and socioeconomic status. 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. Epidemiological surveys are important for monitoring trends in dental caries and for assessing the dental needs. 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.⁷⁻⁹ Hence; the present study was undertaken for assessing the prevalence of dental caries among school going children.

In the present study, a total of 500 school going children were enrolled. Dental caries was found to be present in 238 children. Overall prevalence of dental caries was found to be 47.6 percent. Among these 238 patients with dental caries, 139 were males while 99 were females. Goenka P et al determined the prevalence of dental caries in children of 5 to 13 years. 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 ($p = 0.000$). 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 ($p = 0.018$).¹⁰ Al-Darwish M et al measure the incidence of dental caries in school children aged 12–14, including the influence of socio-demographic factors. A total of 2113 children aged 12–14 were randomly selected from 16 schools located in different geographic areas. Three calibrated examiners using World Health Organization (WHO) criteria to diagnose dental caries performed the clinical examinations. The mean decayed, missing, and filled teeth index values were respectively $4.62 (\pm 3.2)$, $4.79 (\pm 3.5)$, and $5.5 (\pm 3.7)$, for 12, 13, and 14 year-old subjects. Caries prevalence was 85%. The mandibular incisors and canines were least affected by dental caries, while maxillary and mandibular molars exhibited the highest incidence of dental caries. Dental caries were affected by socio-demographic factors; significant differences were detected between female and male children, where more female children showed dental caries than male children. In addition, children residing in semi-urban areas showed more dental caries than in urban areas. Results indicated that dental caries prevalence among school children has reached critical levels, and is influenced by socio-demographic factors.¹¹

In the present study, 39.9 percent of the patients belonged to the age group of 11 to 12 years while 35.4 percent of the patients belonged to the age group of 13 to 15 years. Mulu W et al determined the prevalence and associated factors of dental caries among primary school children. Of the 147 children, 82 (55.4%) were girls. Majority of the children (67.6%) cleaned their teeth using traditional method (small stick of wood made of a special type of plant). The proportion of children having dental caries was 32 (21.8%). Primary tooth decay accounted for 24 (75%) of dental caries. The proportion of missed teeth was 7 (4.8%). The overall proportion of toothache and dental plaque among school children were 40 (27.2%) and 99 (67.3%), respectively. Grade level of 1–4, poor habit of tooth cleaning, dental plaque and toothache were significantly associated with dental caries. Dental caries is a common public health problem in school children associated with poor oral hygiene, dietary and dental visit habits.¹²

Conclusion

Significant proportion of school going children is affected by dental caries. Hence; adequate school educational programs should be carried out in future for improving awareness about oral health.

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