



PREVALENCE AND RISK FACTORS OF DENTAL CARIES AMONG SCHOOL CHILDREN FROM A LOW SOCIO ECONOMIC LOCALITY IN HYDERABAD, INDIA

Dental Science

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ABSTRACT

INTRODUCTION: In India, the trend indicates dental caries has been consistently increasing both in prevalence and in severity mostly among school going children and its prevalence is multifactorial. No or rare systematic surveillance or real time monitoring on the oral health problems is available, especially among the children belonging to low socio-economic class, studying in municipal schools. **AIM:** So, the current study was planned to collect the data on prevalence of dental caries and treatment needs to provide preventive care. Settings and design: 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. **METHOD:** A total of 300 school children of the age 9 to 13 years age group were examined for the study. The study population was categorized based on age, sex, location, and socioeconomic status using a pre-tested semi-structured questionnaire for face to face interview followed by oral examination by trained dental experts. **CONCLUSION:** This study provided us the high prevalence of dental caries shows an urgent need for implementing better oral hygiene practices among school children through active involvement of parents and teachers. 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.

KEYWORDS

Dental caries, oral hygiene practices, prevalence, cross-sectional study

INTRODUCTION

Dental caries is a most common type of oral health problem globally yet preventable public health problem.[1] The high prevalence of dental caries and other oral health morbidities in the lower socio-economic groups it could be due to poor oral hygiene practice, lack of awareness, improper food intake and family status and increased consumption of sugars and reduced exposure to fluoride, that interferes with normal nutrition intake, speech, self-esteem and daily routine activities, resulting in under nutrition among children with abnormal cognitive development, affecting 60%-90% of school children and a number of adults.[2]

Less data is available on the oral health hygiene in different states in India. However, from the available studies, it can be estimated that a large range of school going children from 31.5 to 89%, is affected by dental caries in different part of the country.

Besides, it has been seen that The school children from the lower socio-economic background also shows more decay and more missing teeth from previous disease compared with children from higher socio-economic levels.

It has been proven that schools can provide an ideal platform for promotion of oral health. At a global level, approximately 80% of children attend lower secondary school.[3] Schools can provide a supportive environment for promoting oral health and can be extremely helpful in spreading the right message to local community. Schools are the best centre for effectively implementing the comprehensive health care programme as children are easily accessible at school.[4]

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 this biosocial disease and economy of our society.

MATERIALS & METHODS

The present Cross-sectional study was conducted in a school located in Hyderabad city. The area predominantly consists of population from low socioeconomic class. The local self-governance body provides for primary education and healthcare services in the community. A total of 300 students studying from class V to class VII.

All the children studying in class V, VI, VII of the school, willing for participation with parents' written consent and present during the oral check-up were included in the study. A total of 300 students participated in the study.

PROCEDURE

Approval from the school principal was obtained for conducting the study. Consent for examining the children was obtained by a parent's meeting, the purpose of the study was explained to the parents and their consent was taken. A pre-tested semi-structured questionnaire was used for face to face interview with the children for assessment. The children were examined on an upright chair in adequate natural light. Examination of the child was done to check oral hygiene practices. Plain mouth mirror, ice cream sticks, and probe were used for clinical oral examination by trained and calibrated team of dental surgeons to avoid any interexaminer variability. Recording of oral health examination included dental caries status, other related oral health morbidities and DMFT index.

It was a descriptive type of epidemiological study and the design adopted for the study was cross-sectional, i.e., the study subjects were examined only once in the study period to determine the prevalence and severity of the disease. No active intervention and follow-up examinations were performed.

All responses were tabulated using Microsoft-Excel 2007 Software for data analysis. Data was analysed by using SPSS software version 16.0. Statistical tools like mean, median, range, proportions and chi-square used as appropriate.

RESULT AND DISCUSSION

A total of 300 students were collected. In the study, Table 1 shows 41.3% were boys and 41.3% were girls. Majority of the children were of 9 to 10 years and few children (11.3%) were above 12 years. 59.3% of children brushed their teeth daily and 8.1% twice daily. Most of the children ate sweets/ candies daily with varying frequencies. 38.6% children gave history of rinsing their mouth after meals. 68% parents insisted on their wards for daily brushing.

Table 1: Sociodemographic Characteristics and Oral Habits of the Study Population

Sociodemographic profile	Frequency	Percentage(%)
Age (in years)		
9-10	102	34.6
10-11	80	26.6
11-12	84	28.0
12-13	34	11.3
Sex		
Male	176	58.6
Female	124	41.3
Daily Brushing		
Irregular	98	32.6

Once	178	59.3
Twice	24	8.1
Eating Sweets/ candies Daily		
Irregular	102	34
Once	98	32.6
Twice	76	25.3
More than twice	24	8
Rinsing Mouth after Food		
Yes	116	38.6
No	184	61.3
Parents insistence on Brushing		
Yes	204	68
No	96	32

Table 2 showing high prevalence of dental caries among the children (72.6%). It was highest 86.27% among 9-10 year olds, 70% among 10-11 years and 73.8% among children of 11-12 years. Among girl 84.6% were having dental caries whereas in boys 73.29 were infected.

Age (in years)	Present(%)	Absent (%)	Total
9-10	88(86.27)	14	102
10-11	56(70)	24	80
11-12	62(73.8)	22	84
12-13	12(35.29)	22	34
Sex			
Male	129(73.29)	47	176
Female	105(84.6)	19	124

DISCUSSION

Dental caries is one of the leading diseases among school going children. WHO reported 60-90% of school children worldwide has experienced caries with the disease being most prevalent in Asian and Latin American countries.[1-4] Its prevalence is multifactorial depending on age, sex, socioeconomic status, geographical location, eating habits especially sugar/candies and maintenance of hygiene. In our study, the overall prevalence of dental caries was high 72.6%, the highest being 88% among the 9-10 years old. These results were similar to studies reported by Rao *et al* who reported prevalence of 76.9% among 5-12 year olds.[5] and Shingare *et al* who reported prevalence of 80.92% among 3-14 year olds. [6]

In the present study the girls showed slightly higher prevalence as compared to boys (84.6% as against 73.2%). This is similar to finding by Mahesh P *et al*, [13] Rao *et al*, [5] Sarvanan *et al*, [9] On the contrary, girls were found to have higher caries prevalence by Misra and Shee, [8] however no statistically significant association was established among the two.

It was observed that those who brushed twice a day had less prevalence of dental caries as compared to those whose brushing habit was either once daily or not every day.

In our study, there was a strong correlation between sugar consumption and caries prevalence, increasing with increasing sugar exposure. The findings of the present study reconfirm the importance of sugar (sucrose) as one of the prime etiological factors which are consistent with findings of Gupta A *et al*, [10] In a study conducted by Vishwanath and Sabu in North Bangalore, they tried to find the type of sugar consumed and concluded that hard candies are more risky in causing dental caries than soft drinks or ice cream. [11]

Practice of rinsing the mouth after food was found beneficial with low caries prevalence. This is also been reported by Kapoor *et al*. [12] and Datta *et al*. [7] who found that 56.41% of students having habit of rinsing mouth after food had caries as compared to 80% of students who did not rinse mouth after food.

Parental insistence on tooth brushing was found to be significantly associated with prevalence of dental caries among the examined school children. Similarly, history of dental caries among siblings was found to be significantly associated, implying clustering of dental caries in families with poor oral hygiene habits and important role of parents in inculcating good oral hygiene habits.

CONCLUSION

This study provided us the high prevalence of dental caries shows an urgent need for implementing better oral hygiene practices among

school children through active involvement of parents and teachers. 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.

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