

Prevalence of Dental Caries among 6-12 Year Old School Children in Nangal Raya Village, New Delhi: A Pilot Study

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ABSTRACT

Introduction: Oral health is an important component of general health, with dental caries affecting a person's ability to eat, speak or socialize. There is a high prevalence of dental caries worldwide involving the people of all region and society. Schools provide a platform for the promotion of health and oral health not only for the students, but also for the staff, families, and members of the community as a whole.

Aim: To evaluate the prevalence of dental caries in children of 6-12 years studying in local government and public schools and also to suggest suitable preventive programs for the prevention of dental caries in this population.

Material and methods: This is cross-sectional short study was carried out in Nangal Raya Village, New Delhi district to assess the prevalence of dental caries among Government and public school children in the age group of 6-12 years. We covered 10, Government and public schools and examined and selected 250 children with random sampling. The examination of dental caries was assessed using DMFT index (Klein, Palmer, Knutson 1938).

Results: Overall 23.2% of children were caries free and 76.8% were caries prevalent. the mean dmft score observed was 3.62. On basis of gender prevalence males showed prevalence of 41.5% and in females 52.06%.

Conclusion: We hereby conclude that dental caries is definitely a major problem among primary government and public school children in our city. Such studies will facilitate the policy makers in at least considering the implementation of effective school based preventive programs in schools with higher needs, if not simultaneously in all schools

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, the product of man's progress toward civilization, has a very high morbidity potential and thus, is coming into focus of the mankind.^{1,2} 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. Scientists are continuing their research in identifying the best practices for diagnosis, treatment, and prevention of dental caries.³ Previous methods for the treatment of dental caries in a surgical manner have been replaced by newer strategies that emphasize disease prevention and conservation of tooth structure.

There is a high prevalence of dental caries worldwide involving the people of all region and society, voluminous literature exists about dental caries levels in Indian population. Available literature from 1940 to 1960, the prevalence of dental caries in India showed a varied picture.⁴

Schools provide a platform for the promotion of health and oral health not only for the students, but also for the staff, families, and members of the community as a whole.

The objectives of this study was to know the prevalence of dental caries in children of 6-12 years studying in local government and public schools and also to suggest suitable preventive programs for the prevention of dental caries in this population.

MATERIAL AND METHODS

A cross-sectional short study was carried out in Nangal Raya Village, New Delhi district to assess the prevalence of dental caries among Government and public school children in the age group of 6–12 years. For this purpose we covered 10 government and public schools and examined and selected 250 children with random sampling. Age eligibility was our 1st criteria for including the child in the study. Other inclusion criteria for the study were: Carious tooth if there was visible evidence of a cavity, including untreated dental caries. The missing teeth included those teeth which indications for extractions or teeth extracted due to caries. The filled teeth were also considered. Regarding Exclusion criteria, Early stages of dental caries and questionable lesions were excluded. Children with systemic diseases and on antibiotic therapy in the previous 6 months were also excluded from the study.

The required ethical clearance was taken from the Ethical Committee of Institution and all the official permissions was obtained with Informed consents from the respective school administrations and parents of the children. Clinical examinations was performed by 3 examiners who were trained beforehand in public health dentistry. The examination of dental caries experience was assessed using DMFT index (Klein, Palmer, Knutson 1938). The autoclaved set of instruments was used for clinical oral examination of the children. The subjects were classified into two categories (caries free or caries prevalent) depending on the DMFT score.

Table 1: Showing Criteria Used For Evaluating Dental Caries Status

DENTAL CARIES STATUS	
DMFT VALUE	STATUS
0	Caries free
1 and above	Caries prevalent

RESULTS

This epidemiological short study comprised of a total sample size 250 students from 10 local government and public schools. The study population was distributed age wise into group 1, 2 & 3 and the number of students in each group are categorized in table 2. 32% belonged to group 1, 40.8% in group 2 and 27.2% in group 3.

When caries prevalence was evaluated, it was observed that group 1 showed 73.7% caries prevalence, group 2 showed 88.6%, and lastly group 3 showed 63.2%. (Table 3)

Table 2: Showing Sample Distribution in the Study

AGE WISE DISTRIBUTION IN GROUPS	NUMBER OF STUDENTS IN EACH GROUP (N=250)
Group 1 (age range 6-8)	80 (32%)
Group 2 (age range 9-10)	102 (40.8%)
Group 3 (age range 11-12)	68 (27.2%)

Table 3: Showing caries Prevalence in the Study Sample

AGE WISE DISTRIBUTION IN GROUPS	CARIES PREVALENCE IN %
Group 1 (age range 6-8 years)	73.7%
Group 2 (age range 9-10 years)	88.6%
Group 3 (age range 11-12 years)	63.2%

Overall 23.2% of children were caries free and 76.8% were caries prevalent. The mean dmft score observed was 3.62. (table 4). On basis of gender prevalence of dental caries in the study population, males showed prevalence of 41.5% and in females 52.06%. (table 5)

Table 4: Shows Observed Dental Caries Status in the Study

GROUP	CARIES FREE	CARIES PREVALENCE	MEAN DMFT SCORE
Group 1 (n=80)	21	59	3.62
Group2 (n=102)	12	90	4.15
Group 3 (n=68)	25	43	3.09
Average	58 (23.2%)	192 (76.8%)	3.62

Table 5: Prevalence of dental caries on basis of gender distribution

MALES (n=129)	FEMALES (n=121)
48.5%	52.06%

DISCUSSION

Epidemiologic studies are of value in assessing the prevalence of diseases, in disclosing trends in disease development, and in analyzing possible factors influencing the disease pattern. Although, oral health is an integral part of general health, it has not received any significant consideration in national health policies or in the planning of national health programs in many developing countries.

We chose to conduct this study on school children as Schools provide a platform for the promotion of health and oral health not only for the students, but also for the staff, families, and members of the community as a whole.

The present study included a total sample of 250 children and it was observed that the mean DMFT score in the study population was 3.62 which is quiet high. The WHO goals 2010 reported a mean DMFT score of 1.5 and our study scores are quiet high in its comparison. ⁵ This shows that such studies are important to recognize the areas where oral health education and preventive methods should be introduced as oral health is reflection of general health.

The prevalence of caries was found to be maximum for group 2 while group 1 and group 3 showed less difference in prevalence. High caries prevalence is usually seen with the advancing age due to more number of teeth exposed in oral cavity but in our study group 3 showed decreased prevalence which can be justified saying that this age group children are grown up and practice good oral hygiene as compared to other age groups. The results of our study are in accordance with the results shown by Shingareet al⁶, Sarawanet al⁷, and goyal et al⁸. While these results are in contradiction of study done by Rao et al⁹.

Gender difference did not seem to be the related factor in our study as both males and females showed almost similar caries prevalence when compared with each other. Sudha P et al² in her study reported similar results with no difference in caries prevalence in both the genders. But in contradiction to our study Shingareet al⁶, Mwakatobe AJ et al¹⁰, Mosha et al¹¹ and Vacher et al¹² reported difference in caries index in both males and females. This variation in results can be explained on the basis of difference in sample sizes and geographic locations studied.

The present study may be considered as a pilot study in the local population of government and public school children. The results of the present study need to be validated by a larger study on a state wise basis. More such studies including even private along with government and public school children using all methods of diagnosis of dental caries and assessment of knowledge, attitude and practices of children and their parents on oral hygiene should be recommended. Such studies will facilitate the policy makers in at least considering the implementation of effective school based preventive programs in schools with higher needs, if not simultaneously in all schools.

CONCLUSION

We hereby conclude that dental caries is definitely a major problem among primary government and public school children in our city. Low socioeconomic status leads to poor oral hygiene and dietary along with lack of dental visit were the associated factors for dental caries. Therefore, health education on oral hygiene, dietary habits and dental visit should be given for children to prevent and control dental caries.

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