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Research Article

PREVALENCE OF DENTAL CARIES AMONG SCHOOL GOING CHILDREN OF AGE 6-12 YEARS IN LUCKNOW CITY – A CROSS-SECTIONAL STUDY

Ahuja Ravindra*

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*Corresponding Author: Ahuja Ravindra

ABSTRACT

Objective: To determine the prevalence of dental caries among the school going children in the central part of Uttar Pradesh, India.

Methods: This was a cross-sectional study conducted among the urban school going children in Lucknow district. Four primary schools were selected and 110 children of age 6 to 12 years from each school were examined, thus a total of 440 children were examined for dental caries. The children were examined by a single trained examiner in their respective schools seated on an ordinary chair in broad day light facing away from direct sunlight using WHO (1997) criteria.

Results: There were 71.4% males and 28.6% females. Overall, 43.9% of the children examined had dental caries. The prevalence dental carried was lower among male children (43.3%) than females (45.2%). The children of age 6 years (63.2) had higher percentage of dental carried followed by 7 years (56.3%), 8 years (51.1%), 9 years (47.8%), 10 years (40.5%), 11 years (39.4%) and 12 years (37.5%). Not much difference in the prevalence of dental caries was found between male and female in all the ages. The average decayed teeth was 1.024 ± 0.004 , missing was 0.016 ± 0.001 and filled was 0.002 ± 0.000 . The average DMFT was found to be 0.347 ± 0.012 .

Conclusion: The prevalence of dental caries was low in this population from earlier studies being higher among females than males. However, an attention is required in both the sexes about their oral practices.

Keywords: School children, Dental caries, Prevalence, DMFT

INTRODUCTION

Dental caries is a preventable disease and if the burden of factors leading to such condition is known only then can better health education activities be planned. The identification of high-risk groups provides motivation to enhance community awareness and its involvement in preventive efforts; as well as re-orient oral health services towards oral health promotion and prevention¹.

The children suffering from poor oral health are 12 times more likely to have restricted activity days as compared to those who did not². The prevalence of dental caries among pre-school children of developed nations has been declining over the past few decades. However, current evidence showed that this decline has ceased in certain developed countries^{3,4}, but the prevalence is still high among preschoolers of developing nations^{5,6}. In India, findings of two studies showed prevalence of dental caries to be 51% and 54.1% respectively^{7,8}. There is lack of studies in the State of Uttar Pradesh in the prevalence of dental caries among school going children. Therefore, the present study work was designed to determine the prevalence of

dental caries among the school going children in the central part of Uttar Pradesh, India.

MATERIALS AND METHODS

This was a cross-sectional study conducted among the urban school going children in Lucknow district. The consent from the head of the school and from guardian of the children was obtained including the study.

The sample size calculation was based on the reported caries prevalence in India between 31.5% to 89%⁹⁻¹¹. Assuming the caries prevalence of 50% with error of 5% and power of the study to be 80%, the minimum sample size calculated was 400. The Transgomti area was chosen for the study and schools were selected on convenience and purposive sampling method was adopted for the selection of children. Four primary schools were selected and 110 children of age 6 to 12 years from each school were examined, thus a total of 440 children were examined for dental caries. The children were examined by a single trained examiner in their respective schools seated on an ordinary chair in broad day light facing

away from direct sunlight using WHO (1997) criteria¹². Caries was recorded on WHO 1997 guidelines (WHO, 1997) using a mouth mirror with explorer and proper lighting arrangement by a single examiner to avoid inter-examiner variations using DMFT indices¹².

RESULTS

The Table-1 presents the distribution of examined children and prevalence of dental carries by age and sex. There were 71.4% males and 28.6% females. Overall, 43.9% of the children examined had dental carries. The prevalence dental carried was lower among male children (43.3%) than females (45.2%). The children of age 6 years (63.2) had higher percentage of dental carried followed by 7 years (56.3%), 8 years (51.1%), 9 years (47.8%), 10 years (40.5%), 11 years (39.4%) and 12 years (37.5%). Not much difference in the prevalence of dental carries was found between male and female in all the ages.

The average decayed teeth were 1.024±0.004, missing was 0.016±0.001 and filled was 0.002±0.000. The average DMFT was found to be 0.347±0.012. The average decayed, missing, filled teeth and DMFT was almost similar among all the ages. There was no difference in the average decayed, missing, filled and DMFT between male and female children (Table-2).

DISCUSSION

The prevalence of dental caries has been declining over the last three decades in most developed countries. This decline in caries has been associated mainly with widespread availability of fluoride toothpastes and changes in pattern and amount of extrinsic sugar consumption, especially sucrose increased dental awareness, increased availability of dental resources,

introduction of dental health education programs, improved preventive approaches in dental practices and changed diagnostic criteria¹³.

The present study was designed to estimate the prevalence of dental carries among school going children of age 6-12 years. The prevalence was low being 43.9% in this study being highest in 6 years (63.2%) and lowest in 12 years (37.5%). The prevalence of dental carried was low among males than females in the present study.

Although there are reports of declining caries prevalence in developed countries, it is still very high in many developing countries¹⁴. In various studies conducted in India, a high caries prevalence was recorded i.e. Saravanan S. et al¹⁵ found caries prevalence of 71.7% in 5-10 year old children in Chidambaram, Joshi et al 2005 observed that 77% children in Kulusekharam village were affected by dental caries¹⁶.

In the present study, the DMFT was less than one among all the children. The male children had a similar dmft value with females demonstrating that both boys and girls are more conscious about their diet, oral health and hygiene, however, studies reported a difference¹⁷⁻²⁰, perhaps due to the fact that at this young age, children are not self-motivated about their dental health and rely mostly on their parents for the maintenance of their oral hygiene. Couple of studies have; however, found a significant difference between DMFT scores of preschool boys and girls^{21,22}.

CONCLUSION

The prevalence of dental caries was low in this population from earlier studies being higher among females than males. However, an attention is required in both the sexes about their oral practices.

Table-1: Distribution of examined children and prevalence of dental carries by age and sex

Age in years	Male				Female				Total			
	No.	%	Prevalence of carries		No.	%	Prevalence of carries		No.	%	Prevalence of carries	
			No.	%			No.	%			No.	%
6	13	68.4	8	61.5	6	31.6	4	66.7	19	4.3	12	63.2
7	21	65.6	12	57.1	11	34.4	6	54.5	32	7.3	18	56.3
8	31	68.9	16	51.6	14	31.1	7	50.0	45	10.2	23	51.1
9	48	71.6	23	47.9	19	28.4	9	47.4	67	15.2	32	47.8
10	56	70.9	22	39.3	23	29.1	10	43.5	79	18.0	32	40.5
11	69	73.4	27	39.1	25	26.6	10	40.0	94	21.4	37	39.4
12	76	73.1	28	36.8	28	26.9	11	39.3	104	23.6	39	37.5
Total	314	71.4	136	43.3	126	28.6	57	45.2	440	100.0	193	43.9

Table-2: Average of Decayed (D), Missing (M), Filled (F) and DMFT by age

Age in years	D	M	F	DMFT
6	1.120±0.013	0.013±0.001	0.001±0.000	0.378±0.011
7	0.980±0.012	0.014±0.000	0.002±0.000	0.332±0.011
8	1.130±0.014	0.016±0.000	0.001±0.000	0.382±0.011
9	0.960±0.001	0.014±0.000	0.003±0.000	0.326±0.001
10	1.140±0.002	0.015±0.001	0.004±0.000	0.386±0.002
11	0.950±0.001	0.023±0.001	0.003±0.000	0.325±0.001
12	0.890±0.003	0.016±0.000	0.001±0.000	0.302±0.002
Total	1.024±0.004	0.016±0.001	0.002±0.000	0.347±0.012
Sex				

Male	1.015±0.001	0.016±0.001	0.001±0.000	0.344±0.012
Female	1.030±0.002	0.015±0.011	0.002±0.000	0.349±0.011

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