

Study of dental caries in primary school children of rural area

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Abstract

Dental health diseases such as dental caries are among the most widespread diseases in the world. Dental caries will eventually lead to pain and tooth loss if untreated. The present study was carried out to find prevalence of dental caries and its relationship with some epidemiological factors. The present study was cross sectional study which included 916 school children from 3 villages. Prevalence of dental caries in the present study was 48.14%. Higher prevalence of dental caries was associated with low education status of mother, consuming sweet articles in between meals, cleaning teeth once daily or occasionally. Due to high prevalence of dental caries in school children, health care system should ensure periodic dental health checkup and early detection and prompt treatment of dental caries.

Keywords: dental caries, primary school children.

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INTRODUCTION

Dental caries constitute the major problem in dental health. Dental caries affect all population to varying degree. Dental caries is a wide spread disease that eventually leads to pain and tooth loss if untreated. Dental caries is a destructive disease of hard tissues of teeth and there is a good evidence that it is initiated by acids produced by fermentation of carbohydrate substrate by bacteria in dental plaque.¹ In order to draw attention of community and public health on oral health; 7th april 1994 world health theme was [oral health for healthy life].² Health surveys conducted in Indian school indicate that morbidity rates in children are highest in the world. High prevalence of dental caries in children is due to lack of dental awareness in public.² The study was undertaken with aim of assessing the dental caries in primary school

children so that some promotive, preventive and curative measures can be suggested.

MATERIAL AND METHOD

The present cross sectional study was carried out in rural area of chanai, Morewadi and pimpla of ambajogai tahshil Dist Beed to find out the prevalence of dental caries. Type of study - Cross sectional. The present study was conducted in randomly selected 3 villages, All these three villages are in ambajogai Tahshil, Dist Beed. Information of study subjects like Name, age, sex, Religion was taken and confirmed from school record. The investigator visited schools during school time and interviewed himself and examined all the 916 study subjects. Information about teeth cleaning habits was obtained from students and was confirmed from their parent's interview from house to house survey.

Oral Examination

Oral Examination was conducted in respective schools only by investigator himself. Children were examined in standing position, in front of examiner. Examination was carried out by plain mouth mirror and dental probe [explorer] in adequate day light. The data collected was analysed and statistical tests like chi-square applied wherever applicable. The criteria used for diagnosis of dental caries was recommended by WHO oral health survey methods (1997)³

RESULTS

Table 1: Relationship between demographic variables with dental caries

Variable		With caries (%) n= 441(48.14%)	Without caries (%) n= 475 (51.85%)	Total N= 916	
Sex	Male	227 (48)	251 (52.51)	478 (52.18)	$\chi^2 = 0.13,$ $p > 0.05$
	Female	214 (48.85)	224 (51.14)	438 (47.81)	
Education status of mother	Illiterate	302(71.39)	121(28.61)	423(46.17)	$\chi^2 = 170, p =$ 0.0001
	Literate	139 (28.19)	354 (71.81)	493(53.82)	
Frequency of teeth cleaning	Occasional	11 (73.33)	4(26.60)	15(1.63)	$\chi^2 = 487.4, p <$ 0.001
	Once daily	390(50.78)	378(49.21)	768(83.84)	
	Twice daily	40(30.07)	93(69.92)	133(14.52)	
Sweet articles	Occasionally	263(44.95)	322(55.04)	585(63.86)	$\chi^2 = 7.95, p <$ 0.05
	Once	124(51.24)	118(48.76)	242(26.41)	
	Twice	54(60.67)	35(39.32)	89(9.71)	

Table no 1 shows that out of 478 male children, 227(47.48%) were found to be suffering from dental caries while out of 438 female children 214(48.85%) were having dental caries. However, there was no association observed between sex of the children and dental caries. Out of 423 children with illiterate mothers 302 (71.39) children had dental caries. Out of 493 children with literate mothers 139 (28.19 %) children had dental caries. In present study dental caries was highest i.e.(71.31%) in children with illiterate mothers and lowest i.e.(28.19%) in children with literate mothers. Chi-square test shows significant association between educational status of mother and dental caries. In present study it was observed that majority of children 83.84% of children were cleaning their teeth once daily and 14.52% children were cleaning their teeth twice daily and 1.63% children

cleaning their teeth occasionally. Out of 15 children cleaning their teeth occasionally 11 (73.33%) had caries teeth. Out of 768 children cleaning their teeth once in a day 390 (50.78%) had caries teeth and out of 133 children cleaning their teeth twice in a day 40(30.07%). Association between teeth cleaning and dental caries was highly significant. Table 1 shows, out of 585 children consuming sweet articles occasionally 263(44.95%) had dental caries. Then out of 242 children consuming sweet articles once a day, 124 (51.24%) had caries and out of 89 children consuming sweet articles twice in a day 54(7.67%) had shown dental caries. Thus caries was highest in children consuming sweet articles twice in day and lowest in children consuming sweet articles occasionally. Association between sweet articles consumption and caries was highly significant.

Table 2: Relation between Type of Material used for teeth cleaning and dental caries

Sr. no	Material used	School children			
		With caries(%)n=441	Without caries(%)n= 475	Total n= 916	
1	Charcoal powder	80 (59.25)	55(40.74)	135(14.73)	$\chi^2 = 182.94, p = 0.001$
2	Dung Ash	30 (52.63)	27(47.36)	57(6.22)	
3	Ayurvedic powder	64(46.71)	73(53.28)	137(14.95)	
4	Tooth powder with finger	171(57.57)	126(42.42)	297(32.42)	
5	Common Salt	11(73.33)	4(26.66)	15(1.63)	
6	Tooth paste with brush	85 (30.90)	190(69.09)	275(30.02)	

Table 2 shows, out of 916 school children 135 (14.73%) were using charcoal powder for teeth cleaning, 57(6.222%) were using dung ash, 137(14.95%), Ayurvedic powder 297(32.42%), 15(1.63%) common salt, 275 (30.02%) were using tooth paste with brush. The percentage of dental caries is highest in common salt user i.e. 73.33% and lowest in tooth brush users 30.02%. Association was significant.

DISCUSSION

Mathur H N⁴ observed that prevalence was highest i. e. 18.75% in social class –I and lowest in social class –V. The present study findings were comparable with mathur

H N *et al* (1979). Singh DK *et al* (1981)⁵ reported that prevalence of caries was higher in female children 52.63% than male children i.e. 50.30. Jawadekar SJ *et al* (1986)⁶ found that 53.50% female children had dental caries. Present study findings were found to comparable with Singh Dk and Jawadekar SJ. Gill PS *et al* (1968)⁷ 96.70% school children had illiterate mothers. Present study was Comparable with Gill PS. Gill PS *et al* (1968)⁷ reported that the majority of school children i.e. 78.20% were cleaning teeth once in a day. Bajaj M *et al* (1989)⁸ reported that majority of school children i.e. 85.30% were cleaning their teeth once in a day. The present study findings were comparable with these studies. Bajaj M *et*

al (1989)⁸ reported that prevalence of dental caries was higher in children consuming sweet articles in between meals 66.05%. The present study findings were comparable with this study. Gupta p *et al* (1996)⁹ observed that 78.10 % children cleaning teeth with finger and only 21.90% with tooth brush and paste. Jalili VP *et al* (1986) Observed that overall 64% children were cleaning teeth with Manjan and 25% used were using tooth brush and paste. The present study findings were comparable with these studies.

CONCLUSION

Prevalence of dental caries in the present study was 48.14%. Higher prevalence of dental caries was associated with low education status of mother, consuming sweet articles in between meals, cleaning teeth once daily or occasionally and Material used for cleaning teeth had strong impact on dental caries prevalence.

RECOMMENDATIONS

1. Periodic dental health check-up and early detection and prompt treatment of dental carries should be promoted.
2. Daily teeth cleaning with tooth brush and tooth paste.
3. School children should be motivated to avoid consumption of food articles sugar, Jaggery, ice candy and avoid eating between meals.

4. School teachers should be motivated to create awareness and importance of teeth cleaning in school children.

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