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Prevalence of dental caries: Children in Darbhanga population

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Abstract

Introduction: Dental caries is one of the most prevalent diseases of childhood in developing countries. The prevalence and incidence of dental caries is influenced by various socio-demographic factors like age, sex, ethnic groups, dietary patterns and oral hygiene habit.

Materials And Methods: A population based cross-sectional study was conducted among the OPD of mithila minority dental college, darbhanga medical college and school going children in darbhanga from September 2015 to September 2018 total sample size 14580.

Result: The overall prevalence of dental caries was found to be 83.71%. Higher prevalence of dental caries was found among the girls (84%) among the upper socioeconomic class (89.63%), among those who consumed vegetarian diet (74.8%), Dental caries was found to be higher in prevalence among those Muslim religion (80.99%).

Conclusion: Dental caries is a preventable disease which can be alleviated by creating community awareness through health education activities. Irrespective of age groups, the prevalence of dental caries was found to be high and varied across in Darbhanga.

Keywords: Children, dental caries, darbhanga

Introduction

The prevalence of dental caries was of great interest for long and is a principal subject of many epidemiological researches being carried out worldwide. Dental caries is considered one of the most ubiquitous non-communicable diseases with a worldwide prevalence of 35% for all ages combined contributing to the global burden of diseases [1] Dental caries is a multifactorial infectious microbial disease of the teeth that results in localized dissolution and destruction of the calcified tissues often resulting in cavitation [2]. Dental caries is still a smoldering disease in the developing countries like India that has engrossed its tentacles deep into the regions where the resources are inadequate for dental treatment, lack of public awareness, and motivation with increased intake of carbohydrates [3, 4]. The prevalence and incidence of dental caries is influenced by various socio-demographic factors like age, sex, ethnic groups, dietary patterns and oral hygiene habits [5]

Materials and Methods

This study was done as population based cross – sectional study on the prevalence of dental caries among the aged between 2–12 years in the in three different places in darbhanga these place are Mithila Minority Dental College, Darbhanga medical college and 25 different school in darbhanga. We divided children in three groups:

Group I: Children age 2-4 year

Group II: Children age 5-8year

Group III: Children age 9-12year

The total number of sample is 14580.

The study collected information on age, gender, and educational levels, as well as oral hygiene behaviors, such as frequency of teeth cleaning per day, type of dentifrice used, whether or not toothbrush, and fluoridated toothpaste were used.

The clinical examination included the number of teeth that were decayed, missing, and filled as a result of caries. The WHO oral assessment form for adults was used to record the results of intraoral examinations [1],

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Result

Table 1: Age Group

Group	Number	Cariou teeth	Percentage	Mean	SD	P value
Group I (2-4YEAR)	1844	1705	92.46	4068	27.35	P<0.0001
Group II (5-8YEAR)	4370	4125	94.39			
Group III (9-12YEAR)	8366	6375	76.20			
Total	14580	12205	83.71			

P is less than 0.0001

Sample distribution according to age Table 1 shows that the age group of the population ranges from 2 to 12 years. The high prevalence recorded in Group II (94.39%), because there

is mix dentation than more in Group I(92.46%) and Group III(76.20%). The p-vale is less than 0.0001 so in this age group data is significant.

Table 2: Gender

Gender	Number	Cariou teeth	Percentage	Mean	SD	P value
Male	8036	6420	79.89	5977	5.18	P<0.0001
Female	6544	5535	84.58			
Total	14580	11955	81.99			

P is less than 0.0001

Table 2 shows the overall values for percentage of males and females were81.99% caries. The prevalence of caries is more

in female (84.58%) than male (79.89%) The sample between males and females were statistically significant.

Table 3: Religion

Religion	Number	Cariou teeth	Percentage	Mean	SD	P value
Hindu	9432	6335	67.16	3764	33.05	P<0.0001
Muslim	5203	4214	80.99			
Other	945	744	78.73			
Total	14580	11293	77.45			

Table 3 shows the overall values for percentage of religions are 77.45% caries. The prevalence of caries is more in Muslim population (80.99%) because poor oral hygiene and bad sanitation than less Hindu population (67.16%), the other population is 77.45% carious was recorded. The sample between all religions are statistically significant. (p value is less than 0.0001)

4. Socioeconomic group

Table 4 shows the overall values for percentage of socioeconomic group are 82.92% caries. The prevalence of caries is more in upper class population (88.36%) than less lower class population (75.38%), the middle class population is 88.36% carious was recorded. The sample between all class are statistically significant. (p value is less than 0.0001).

Table 4: Socioeconomic group

Socioeconomic group	Number	Cariou teeth	Percentage	Mean	SD	P-value
Lower class	6560	4945	75.38	4030	26.05	P<0.0001
Middle class	3446	3045	88.36			
Upper class	4574	4100	89.63			
Total	14580		82.92			

Table 5 shows the overall values for percentage of diet habit group are 68.18% caries. The prevalence of caries is more in vegetarian population (71.57%) than less non vegetarian

population (68.15%), the mixed diet population is 63.78% carious was recorded. The sample between all class are statistically significant. (p value is less than 0.0001)

Table 5: Diet habit

Diet type	Number	Cariou teeth	Percentage	Mean	SD	p-value
Vegetarian	4627	3312	71.57	3312	29.45	P<0.0001
Non vegetarian	6325	4311	68.15			
Mixed	3628	2314	63.78			
Total	14580		68.18			

Table 6 shows the overall values for percentage of oral hygiene habit group are 69.30% caries. The prevalence of caries is more in datun and other population

(96.00%) than less tooth brush and paste population (88.74%). The sample between all class are statistically significant. (p value is less than 0.0001)

Table 6: Oral hygiene habit

Oral hygiene habit	Number	Cariou teeth	Percentage	Mean	SD	P-value
Tooth brush & paste	11554	10254	88.74	6591	5.67	P<0.0001
Datum & other	3026	2924	96.00			
Total	14580		90.30			

Discussion

In this study, the overall prevalence of dental caries among the children aged between 2–12 years was found to be 83.7% which is in concordance with the study by Karunakaran *et al.* which was conducted among children aged between 4–6 years in which the prevalence of dental caries was 65.9%.^[6] It could also be due to the lower calcium content of deciduous teeth and structural differences that may increase caries susceptibility in deciduous teeth^[12]. However, a cross-sectional study conducted in Bundelkhand region, India,^[13] reported a much higher prevalence of dental caries (82.62%) in 3–14 years old group as compared to the present study

The prevalence of caries teeth was found to higher among females (84%) than among males (79.89%) in the present study and this difference was significant ($P < 0.0001$). The prevalence of dental caries was higher in girls (76%) than in boys (68.8%)^[8] Dixit *et al.* in their study reported that the overall prevalence of dental caries was higher among boys (55%) than girls (44%) and Dhar *et al.*, in their study reported that caries prevalence in the boys group was 66.91% while that of girls group was 59.03%^[9, 10] Rajesh *et al.* the prevalence of dental caries was found to be almost equal among the female (34%) and male (31.8%)^[11].

In this study caries prevalence in Muslim (80.99%) population is more than Hindu (67.16%) population than also other population

In the present study the prevalence of dental caries was found to be higher among the higher class (89.63%) and among the middle class (88.36%) than among the lower class (75.38%) and this difference is highly significant. Datta *et al.* among the school children in Sundarban found that 84.2% of the students belonging to the less income group had dental caries in comparison to 59.65% students in higher income group and this difference is statistically significant⁸ In the present study, the prevalence of dental caries was high in the low socioeconomic status because of their poor oral hygiene practice, lack of awareness, improper food intake, and family status. This finding is similar to the study conducted by Moses *et al.*^[14]

This study showed that those who consumed vegetarian diet (71.57%) had higher prevalence of dental caries than those who consumed non vegetarian diet (68.15%), and also mixed diet (63.78%) the difference was significant ($P < 0.0001$). Abdul *et al.* in their study found that the prevalence of dental caries was higher among those who consumed vegetarian diet 85.57% than among those who consumed mixed diet and this difference is because of the fact the population in this region are totally vegetarians due to religious reasons^[15].

Dixit *et al.* in their work found that 56% of the children brushed their teeth daily and among them only 24% of them brushed their teeth twice a day^[16]. Datta *et al.* reported that the prevalence of dental caries was lower (56.41%) among those who had the habit of washing the mouth after every meal/most of the time than those who rarely washed their mouth after taking food (80%) and this difference is again statistically significant. In this study prevalence of caries in more those who no brushing but sample size is less. According to this study the sample size of those who brushing is high and caries prevalence is high (88.74%).

Conclusion

Dental caries is a preventable disease and the magnitude of the problem can be alleviated by creating awareness on oral health to the parents, teachers, general public and emphasis

should be laid on oral hygienic practices and diet counseling. This data may be of importance in the evaluation of the past and planning of future oral health prevention and treatment programs targeting young children. Results from this study indicate participants had varying levels of caries and unmet treatment needs according to age categories.

Conflicts of interest: There are no conflicts of interest.

References

- Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. *Bull World Health Organ.* 2005; 83:661-9
- Bhatia HP, Srivastava B, Khatri S, Aggarwal A, Singh AK, Gupta N. Prevalence of dental caries among 3-15 old school children in Ghaziabad city and its adjoining areas – A correlated survey. *J Oral Health Community Dent.* 2012; 6:135-9.
- Ingle NA, Dubey HV, Kaur N, Gupta R. Prevalence of dental caries among school children of Bharatpur city, India. *J Int Soc Prev Community Dent.* 2014; 4:52-5.
- Sharma V, Gupta N, Arora V, Gupta P, Mehta N. Caries experience in permanent dentition among 11-14 year's old school children in Panchkula district (Haryana) India. *Int. J Sci Study.* 2015; 3:112-5
- Sudha P, Bhasin S, Anegundi RT. Prevalence of dental caries among 5-13-year-old children. *J Indian Soc. Pedod. Prev Dent.* 2005; 23(2):74-98
- Karunakaran R, Somasundaram S, Gawthaman M, Vinodh S, Manikandan S, Gokulnathan S. Prevalence of dental caries among schoolgoing children in Namakkal district: A cross-sectional study. *J Pharm Bioall Sci.* 2014; 6:160-1
- Peterson PE, Baez RJ. *Oral Health Surveys: Basic Methods.* 5th ed. France: World Health Organization; 2013. Datta P, Datta PP. Prevalence of Dental Caries among School Children in Sundarban, India. *Epidemiol.* 2013; 3:135.
- Datta P, Datta PP. Prevalence of Dental Caries among School Children in Sundarban, India. *Epidemiol.* 2013; 3:135.
- Dhar V, Bhatnagar M. Dental caries and treatment needs of children (6-10 years) in rural Udaipur, Rajasthan. *Indian J Dent Res.* 2009; 20:256-60.
- Shailee F, Sogi GM, Sharma KR, Nidhi P. Dental caries prevalence and treatment needs among 12 years old and 15 years old schoolchildren in Shimla city, Himachal Pradesh, India. *Indian J Dent Res.* 2012; 23:579-84
- Rajesh SS, Venkatesh P. Prevalence of dental caries among school-going children in South India. *Int J Med Sci Public Health.* 2016; 5:700-4.
- Saravanan S, Kalyani V, Vijayarani MP, Jayakodi P, Felix J, Arunmozhi P *et al.* Caries prevalence and treatment needs of rural school children in Chidambaram Taluk, Tamil Nadu, South India. *Indian J Dent Res.* 2008; 19:186-90
- Jain A, Jain V, Suri SM, Jain RK. Prevalence of dental caries in male children from 3 to 14 years of age of Bundelkhand region, India. *Int. J Community Med Public Health.* 2016; 3:787-9
- Moses J, Rangeeth BN, Gurunathan D. Prevalence of dental caries, socio-economic status and treatment needs among 5 to 15 year old school going children of Chidambaram. *J Clin Diagn Res.* 2011; 5:146-51.
- Khan AA, Jain SK, Shrivastav A. Prevalence of Dental Caries among the Population of Gwalior (India) in

Relation of Different Associated Factors. Eur. J Dent. 2008; 2:81-5.

16. Prasai DL, Shakya A, Shrestha M, Shrestha A. Dental caries prevalence, oral health knowledge and practice among indigenous Chepang school children of Nepal. BMC Oral Health. 2013; 13:20.