

A Study on the Dental Health of Urban Government School Children in Telangana

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ABSTRACT

Introduction: Dental Health in school going children is a major issue of concern that effects their general health and overall well-being. Taking this into consideration the present study was taken up to assess the prevalence of dental problems in Government school going children of Telangana state and to create awareness among them about oral health.

Material and methods: The present study consisted of 2205 subjects from two Govt schools of Hyderabad, Telangana state. The data was collected by interviewing the children in the age group of 5-15yrs and by clinical examination. Complete information on the oral health of the children was collected and awareness was created among them about oral hygiene.

Results: The prevalence of dental health problems was observed in 77.41% of school children. Majority of the cases were reported from Borabanda Govt. school (67%) compared to Banjara Hills Govt. School (33%) which shows the impact of socio economic status and locality on the outcome of dental complications.

Conclusions: A large number of school children were reported with dental health problems suggesting improper dietary habits, lack of awareness on oral hygiene and poor financial support for the treatment. Poor dental health may be detrimental to children's quality of life and academic performance at school. Creating awareness among the school children and their parents about oral hygiene may help to tackle the dental problems in poor school going children.

Keywords: School Children, Oral Hygiene, Dietary Habits, Oral Prophylaxis, Restorations.

Health Organization, 60-90% of school children have experienced dental health problems at some point of time during their school tenure.⁷ Dental health problems hamper child's involvement in activities such as eating, playing, socializing, speaking and concentrating ability, due to which children are not able to perform to the full potential.⁸⁻¹⁰

The present study was taken up with the objective of assessing the prevalence of dental health problems in the school going children and to create awareness on dental hygiene practices such as brushing teeth, avoiding food with high sugar content and fizzy drinks which damage the teeth. The early assessment, intervention, treatment and creating awareness may prevent the later complications associated with dental health problem and negative effects on children's overall performance in their life.

MATERIAL AND METHODS

The students of Govt. School of Banjara Hills and the Govt. School of Borabanda in the age group of 5-15 years formed the subjects for the study. The students of both the schools were clinically examined and information on age, sex, class, socio economic status, parent's income, health, oral hygiene practice, etc was collected using a standard questionnaire. Prior consent for the study was obtained from the children and school authorities. The study group consisted of male and female students in the age group of 5-15 years from lower socio-economic status. Dental examination and interviewing were done for one student at a time and the data was recorded on dental health problems under the following Headings.

INTRODUCTION

Dental Health plays an important role in the overall well-being of children, their quality of life and performance at school. But unfortunately, the problem of dental health was ignored common among school going children.¹ The most common causes for dental health include dietary habits such as high sugary and starchy food, popular colas, sugar filled fizzy drinks and a high number of carcinogenic microorganisms such as Streptococcus mutants, lactobacillus- that metabolize sugars to produce acid which, over a period of a period of time, demineralizes tooth structure. The other causes like fluoride content of the water, parental knowledge about oral hygiene practices and socio-economic status of the family also play a major role.²⁻⁵

The prevalence of dental health problems varies with the change in geographical location.⁶ According to World

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Oral prophylaxis

Plaques, calculus, extrinsic stains, material alba present. For this clearing of teeth by dentist is needed to removed them. Preventive measures of tooth decay against gingivitis, halitosis, and periodontal diseases are also important.

Restorations

Repair of a missing or damaged tooth structure is necessary. This will be done by fillings, crowns, bridges, etc.

Extractions

Needs removal of teeth from dental alveolus (sockets) because of tooth decay, periodontal disease and dental trauma.

Fluorosis

The teeth have stains ranging from yellow to dark brown, surface irregularities and highly noticeable pits.

Malocclusion

Misalignments of teeth in dental arches. Needs corrections.

Root canal treatment

Endodontic treatment for removing infection inside a tooth to protect tooth from further infections is required.

STATISTICAL ANALYSIS

The data obtained from the study was represented on the MS excel sheets and statistical analysis was done using SPSS version 15.0.

RESULTS

879 School children from Govt. High School, Banjara Hills and 1326 school children from Borabanda School formed the subjects for the study and the results on dental health problems of the school children studied are shown in Tables 1-5.

The results presented in Table-1 showed that out of 2205 students, 1707 (77.41%) showed dental problems. Majority of the students are for oral prophylaxis (50.3%) followed by cases for restorations (25.4%) and for extractions (10.72%).

	Banjara Hills School	Borabanda School	Total
Total Study No	879(39.9%)	1326 (60.1%)	2205
Dental Problems	564(33.0%)	1143(67.0%)	1707 (77.45%)
Normal	315 (63.3%)	183 (36.7%)	498 (38.50%)
Oral Prophylaxis	262(30.5%)	597(69.5%)	859(50.32%)
Restorations	148(34.0%)	287(66.0%)	435(25.48%)
Extractions	58(31.7%)	125(68.3%)	183(10.72%)
Others (Dental fluorosis, malocclusion, RCT)	96(41.7%)	134(58.3%)	230(13.47%)

Table-1: School wise distribution of study subjects for different dental problems

Gender	Banjara hills school	Borabanda school	Total
Males	293 (35.3%)	537 (64.7%)	830(48.62%)
Females	271 (30.9%)	606 (69.1%)	877(51.37%)
Total	564 (48.6%)	1143 (51.4%)	1707

Table-2: Gender and school wise distribution of study subjects

Gender	Oral prophylaxis	Restorations	Extractions	Others (fluorosis, malocclusion, root canal treatment)	Total
Female	399(46.4%)	252(57.9%)	105(57.4%)	121(52.6%)	877(51.37%)
Male	460(53.6%)	183(42.1%)	78(42.6%)	109(47.4%)	830(48.62%)
Total	859(100%)	435(100%)	183(100%)	230(100%)	1707

Table-3: Gender wise distribution of study subjects with different dental problems

Age	Oral prophylaxis	Restorations	Extractions	Others (fluorosis, malocclusion, root canal treatment)	Total
5	40 (4.7%)	15(3.4%)	2(1.1%)	6 (2.6%)	63 (3.69%)
6	79(9.2%)	15(3.4%)	4(2.2%)	13(5.7%)	111(6.50%)
7	90(10.5%)	9(2.1%)	13(7.1%)	12(5.2%)	124(7.26%)
8	63(7.3%)	19(4.4%)	18(9.8%)	16(7.0%)	116(6.79%)
9	106(12.3%)	39(9.0%)	16(8.7%)	25(10.9%)	186(10.89%)
10	80(9.3%)	48(11.0%)	9(4.9%)	24(10.4%)	161(9.43%)
11	94(10.9%)	57(13.1%)	25(13.7%)	25(10.9%)	201(11.77%)
12	65(7.6%)	58(13.3%)	27(14.8%)	20(8.7%)	170(9.95%)
13	71(8.3%)	51(11.7%)	28(15.3%)	31(13.5%)	181(10.60%)
14	100(11.6%)	61(14.0%)	17(9.3%)	29(12.6%)	207(12.12%)
15	71(8.3%)	63(14.5%)	24(13.1%)	29(12.6%)	187(10.95%)
Total	859 (100%)	435 (100%)	183 (100%)	230 (100%)	1707

Table-4: Age wise distribution of different dental problems among the overall study group.

Gender	School	Oral prophylaxis	Restorations	Extractions	Others (fluorosis, malocclusion, root canal treatment)	Total
Female	Banjara hills	102(11.9%)	78(17.9%)	30(16.4%)	6(26.5%) ¹	271(30.90%)
	Borabanda	297(34.6%)	174(40.0%)	75(41.0%)	60(26.1%)	606(69.09%)
	Total	399(46.4%)	252(57.9%)	105(57.4%)	121(52.6%)	877
Male	Banjara hills	160(18.6%)	70(16.1%)	28(15.3%)	35(15.2%)	293(35.30%)
	Borabanda	300(34.9%)	113(26.0%)	50(27.3%)	74(32.2%)	537 (64.69%)
	Total	460(53.6%)	183(42.1%)	78(42.6%)	109(47.4%)	830

Table-5: Gender and School wise distribution of different type of Dental problems among the study subjects

All other problems such as dental fluorosis, malocclusions, RCT, etc form 13.47%. The results further showed that children of Borabanda School had high percentage of dental health problems (67.00%) when compared to Banjara Hills school (33.00%).

Gender wise distribution of dental problem is shown in Table-2. The female children showed a slightly increased percentage of dental health problems (51.3%) compared to males (48.6%). Table – 3 shows different dental health problems in male and female children separately. The results showed that restorations (57.9%), extractions (57.4%), and other problems such as fluorosis, malocclusions, root canal problems (52.6%) are high in female children. However, a high percentage male child showed oral prophylaxis problems.

Age wise distribution of different dental health problems in children is presented in Table-4. In children in the age group of 5-8 years, the frequency of dental health problems is between 3.69% and 6.79%. From then onwards an increase is seen in dental health problems. In the age group of 9 to 15 years the dental health problems lie in between 9.43% – 12.12%. Thus, the overall results showed that the dental health problems are low in the young age group (5-8 years compared to in older age (9-15years) groups. Table– 5 presents the gender wise distribution of different dental health problem in the students of Banjara Hills and Borabanda School. The results showed high incidence of dental health problems in female children compared to males in both the schools.

Gender and school wise distribution of study subjects showed a higher incidence of dental problems in males (35.3%) compared to females (30.9%) in Banjara Hills School. Whereas, in Borabanda school females (69.1%) had higher number of dental cases compared to males (64.7%). Comparison between the two-schools showed higher number of incidence of dental cases in both male and female category in Borabanda School.

Gender wise distribution of study subjects with different dental problems showed large number of oral prophylaxis case (53.6%) in males compared to females (46.4%). Whereas, female group showed large number of restorations (57.9%), extractions (57.4%) and other dental problems such as fluorosis, malocclusion and root canal treatment (52.6%) compared to male group.

Age group wise distribution of cases showed a greater number of oral prophylaxis cases in the age group of 9yrs (12.3%) followed by 14yrs (11.6%), 11yrs (10.9%), 7yrs (10.5%) and least number of oral prophylaxis cases were reported

in the age group of 5yrs (4.7%). Whereas, restorations were high in the age group of 15yrs (14.5%) followed by 14yrs (14%), 12yrs (13.3%) and number of restoration cases in the age group of 7yrs (2.1%) were less compared to other age groups. The number of extractions were high in the age group of 13yrs (15.3%) followed by 11yrs (13.7%), 15yrs (13.1%) and less in the age group of 5yrs (1.1%). Other dental problems such as dental fluorosis, malocclusions, trauma and root canal treatment were high in the children age of 13,14 and 15yrs and least in the age group of 5yrs.

Gender wise and school wise comparison of different dental problems among the school children showed majority of cases from Borabanda female group compared to Banjara hills female group. In a similar way majority of the cases were reported from male group of Borabanda school compared to Banjara hills school. Male female comparison from Banjara hills school showed large number of oral prophylaxis cases (18.6%) in males compared to females. Whereas, females reported large number of other dental problems such as fluorosis, malocclusion and root canal treatment (26.5%) from Banjara hills school. Comparison between male and female of Borabanda school showed large number of restoration (40%) and extraction (41%) cases from female group and large number of other dental problems such as fluorosis, malocclusion and root canal treatment (32.2%) from male group. In the present study significant difference observed in the prevalence of dental problems between the two schools, showing the impact of geography and locality on the oral hygiene of the school children.

DISCUSSION

Dental Health is the most emerging problem encountered in the school going children. There are several factors which affect the dental health of children such as dietary habits, high intake of sugars, lack of awareness on oral care and low socio-economic status etc. The present study showed a high incidence of the dental health problems among the school children in 5-15yrs age group from both the government schools studied. In the present study the dental health problems were observed in 77.41% of school children. The prevalence of dental health problems was less in the school children in the age groups of 5-8 years when compared to the dental health problems in the age group of 9-15 years. A study carried out by Kumar and Joshi¹¹ showed 37.7% of school children had dental problem and the prevalence was high in the 10 to 12 years old children when compared to the incidence in to 5-6-year-old children. Similar observation

was made by Kundu et al.¹² This could be attributed to the factors such as a diet higher in sugars and the inability of young children to properly brush teeth on their own. According to the study carried out by Vishnu and Krishna Prasad¹³ in the rural area of Tamilnadu the knowledge, attitude and practice about oral hygiene among the school children was not satisfactory. A study conducted in coastal areas of Karnataka region showed decayed teeth peaked at 86.45% in 5-9 years and in 10-14 years at 80.64%.¹⁴ The study conducted in Nainital district, Uttarakhand on school children showed overall 77.7% prevalence of caries of which 67.26% in the age group of 7-9 years and 80.86% in 10-12 years.¹⁵ The study conducted in rural Udaipur, Rajasthan on school children between the age group of 6-10 years showed 87.63% of boys and 82.20% of girls with dental caries.¹⁶ According to the study conducted in Chidambaram on school children of 5-15 years age group showed 63.83% had dental caries.¹⁷ A study from Vidarbha region in central India observed 65.70% of dental caries.¹⁸ The study conducted in the Bundelkhand region of India showed 82.62% of dental caries in the age group of 3-14 years.¹⁹ According to a study carried out in school children of both urban and rural areas of Mahabubnagar district of Telangana, the dental caries was more in 7-8-year-old children and less in 11-12-year-old children.²⁰ The role of parents is very important for guiding their children for brushing and maintaining good oral hygiene. Several studies suggest very limited oral health knowledge among the parents.^{21,22} In majority of the cases the parents do not take adequate interest in their children's oral hygiene. It is usually the mother rather than the father, probably because mothers are usually more involved in the grooming of children than fathers. Majority of the cases were reported from Borabanda Govt school suggesting the effect of locality and social economic status on the outcome of dental health problems. Lack of access, awareness and inability to afford for oral health care might be the reasons for the rise in dental health problems among the school children. Regular dental check-ups by arranging dental camps in schools and educating the children and parents about oral hygiene will improve the condition.

CONCLUSION

A large number of school children were reported with dental health problems suggesting improper dietary habits, lack of awareness on oral hygiene, poor financial support for the treatment. Considerably high number of students were in need of oral prophylaxis attributable to poor maintenance of oral hygiene, improper brushing techniques and usage of neem twigs. Some of the students required extractions due to retained deciduous teeth and their lack of awareness to get them extracted and others due to gross decay. Many of the patients were seen with fluorosis and malocclusions. Lack of motivation about the importance of oral hygiene among the children is observed. In most of the cases, negligence on part of parents towards their children's oral health might be one of the reasons. Creating awareness among school children and their parents about oral hygiene may help to tackle the

dental the dental health problems. Organising regular dental camps and educating them about the good oral practices helps to mitigate the problem in the early stages.

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REFERENCES

1. Jams SW, Kevin JD. Cariology. Dent Clin North Am. 1999; 43:569-78.
2. Kuriakose S, Joseph E. Caries prevalence and its relation to socio-economic status and oral hygiene practices in 600 pre-school children of Kerala-India. J Indian Soc PedodPrev Dent. 1999;17:97-100.
3. Qatar BA, Darwish MS, Tewfik I, Hoffmann GF. The impact of dietary and lifestyle factors on the risk of dental caries among young children in Qatar. J Egypt Public Health Assoc. 2013;88:67-73.
4. Andrade RG, Martins PA, Faria P, Stella PE, Marinho SA, Marques LS, et al. Oral mucosal conditions in preschool children of low socioeconomic status: prevalence and determinant factors. Eur J Ped. 2013;17:675-81.
5. Retnakumari N. Prevalence of dental caries and risk assessment among primary school children of 6-12 years in the Varkala, Kerala, India. J Indian Soc PedodPrev Dent. 1999;17:135-42.
6. National oral health care program implementation strategies. DGHS. MOH and FW; Govt of India. 2004.
7. Oral Health. Available at <http://www.who.int/mediacentre/factsheets/fs318/en/>. Updated on 23rd may 2013 Accessed on 1st November 2016.
8. Acs G, Lodolini G, Kaminsky S, Cisneros GJ. Effect of nursing caries on body weight in a pediatric population. Pediatr Dent. 1992; 14:302-5.
9. Acs G, Shulman R, Ng MW, Chussid S. The effect of dental rehabilitation on the body weight of children with early childhood caries. Pediatr Dent. 1999; 21:109-13.
10. Acs G, Lodolini G, Shulman R, Chussid S. The effect of dental rehabilitation on the body weight of children with failure to thrive: Case reports. Compend Contin Educ Dent. 1998; 19:164-8.
11. Kumar R, Joshi D. Awareness of dental hygiene amongst the primary school children of low socio-economic strata. Int J ContempPediatr2017;4:28-35.
12. Kundu H, Patthi B, Singla A, Jankiram C, Jain S, Singh K. Dental Caries Scenario Among 5, 12 and 15-Year-old Children in India- a retrospective analysis. J Clin Diagn Res. 2015;9:1-5.
13. Vishnu G Ashok, Krishnaprasad C. A study on oral hygiene among school children in a rural area of Tamilnadu. International Journal of Contemporary Medical Research 2016;3:2798-2799.

14. Bhat M, Nagesh L, Ankola A. Dental caries status and treatment needs of children of fisher folk communities, residing in the coastal areas of Karnataka region, South India. *West Indian Med j.* 2007;56:96-8.
15. Grewal H, Verma M, Kumar A. Prevalence of dental caries and treatment needs in the rural child population of Nainital District, Uttaranchal. *Journal of Indian Society of Pedodontics and Preventive Dentistry.* 2009;27:224-6.
16. Dhar V, Bhatnagar M. Dental caries and treatment needs of children (6-10 years) in rural Udaipur, Rajasthan. *Indian J Den Res.* 2009;20:256-60.
17. Moses J, Nammalwar RB, 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.
18. Kalaskar RR, Kalaskar AR, Chandorikar H, Haz-Arey S. Prevalence of dental caries and treatment needs in school going children of Vidarbha region, central India. *Univ Res J Dent* 2015;5:68-72.
19. 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;3:787-90.
20. Reddy KS, Rapala H, Kethineni B, Reddy H, Reddy A, Ravindhar P. Prevalence of dental caries in school going children of both urban and rural areas in Mahbubnagar district, Telangana state, (India): An epidemiological study. *Int J PedodRehabil* 2017;2:7-13.
21. Lian CW, Phing TS, Chat CS, Shin BC, Baharuddin LH, Jalil ZB. Oral health knowledge, attitude and practice among secondary school students in Kuching, Sarawak. *Arch Orofacial Sci.* 2010;5:9-16.
22. Al-Omiri MK, Al-Wahadni AM, Saeed KN. Oral health attitudes, knowledge, and behavior among school children in North Jordan. *J Dent Educ.* 2006;70:179-87.

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