

# Oral Health Morbidities and Unmet Needs in seeking Dental Health Care among Schoolchildren from a Low Socioeconomic Locality in Mumbai, India

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## ABSTRACT

**Introduction:** Children with dental problems are 12 times more likely to have restricted activity days.<sup>1</sup> More than 50 million school hours are lost annually because of oral health problems, which affect children’s performance at school and success in later life. In a metropolitan city like Mumbai, no systematic assessment on the oral health problems is available, especially among children belonging to low socioeconomic class studying in municipal schools. Hence, the current study was planned among the children studying in V to VII standards in suburban municipal school and predominantly from a low socioeconomic area, located in the field practice area of a teaching medical college.

**Materials and methods:** The present cross-sectional study was conducted among 299 schoolchildren aged 9 to 13 years using a pretested semi-structured questionnaire and clinical oral examination to assess their oral health morbidities, health-seeking behavior, and need for dental interventions.

**Results:** About 78.3% children were found with dental caries and 61.2% children were suffering from bleeding and inflamed gums; 19.4% children required extraction and 41.5% required extraction and restoration. However, dental services were availed by only 13.6% of the children.

**Conclusion:** Sustained advocacy and regular dental outreach programs are needed among parents, teachers, and schoolchildren for early diagnosis and management of oral morbidities.

**Clinical significance:** Oral health and people’s behavior are largely determined by the socioeconomic milieu and the conditions in which they live. Therefore, treatment for all common oral health problems is not feasible due to limited resources. As rightly said, prevention is better than cure, and oral health awareness education of the public and schoolchildren at large can make a huge difference.

**Keywords:** Health-seeking behavior, Oral health morbidities, Unmet dental needs.

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## INTRODUCTION

Oral health is a part of overall health in children. Globally among children, dental caries is considered as one of the most important oral health problems. Filstrup et al<sup>1</sup> concluded that early childhood caries affects children’s oral health-related quality of life significantly.<sup>2</sup> Major health problems faced by schoolchildren in India are anemia, malnutrition, infectious diseases, intestinal parasites, dental caries, and diseases of skin, ear, and eyes.<sup>3</sup>

Children who suffer from dental problems are 12 times more likely to have restricted activity days.<sup>1</sup> More than 50 million school hours are lost annually because of oral health problems that affect children’s performance at school and success in later life.<sup>4</sup> Moreover, globally, oral disease is the fourth most expensive ailment to treat in most industrialized nations and investment in preventive oral care has been shown to lead to savings in long-term cost and education in prevalence of oral disease.<sup>5</sup> Lack of awareness of dental diseases has resulted in gross neglect of oral health.<sup>6</sup>

Oral health care plays a pivotal role in preventing oral morbidities. It comprises of change in attitude of people toward oral health, prevention, timely and appropriate diagnosis, and professional care seeking as and when required.<sup>7</sup>

There is scarcity of epidemiological data on representative urban population. Thus, the present study was undertaken on schoolchildren of low socioeconomic area of Mumbai city to find the prevalence of oral morbidities and the unmet need for oral health services by assessing the existing health-seeking behavior for these morbidities.

## MATERIALS AND METHODS

The present cross-sectional study was conducted in a municipal public school located in Malwani-Malad, north-western suburb of Mumbai city. The area predominantly

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consists of population from low socioeconomic class, engaged in various unorganized service sector. Mumbai Municipal Corporation, the local self-governance body, provides for primary education and health care services in the community. There are two municipal secondary schools with a total of 574 students studying from class V to VII.

Sample size was calculated using formula  $4pq/l^2$  ( $p$  = prevalence of dental caries among children = 54%,  $q$  = 100 –  $p$  = 46%, and allowable error = 5.8). Assuming 10% absenteeism and unwillingness to participate in the study by the children, sample size was calculated as 321. All the children studying in classes V, VI, VII of the school, willing to participate with parents' written consent and being physically present during the oral checkup were included in the study. A total of 299 students participated in the study.

Approval from the Institutional Ethics committee and the school principal was obtained for conducting the study. A parent's meeting was called, the purpose of the study was explained to the parents and their consent was taken.

A pretested semi-structured questionnaire was used for face-to-face interview with the children for assessment of oral hygiene practices. Plain mouth mirror, ice cream sticks, and probe were used for clinical oral examination by a team of dental surgeons. Past dental history and related symptoms were asked along with treatment-seeking behavior and expenses on treatment.

All responses were tabulated using Microsoft Excel 2007 software for data analysis. Data were analyzed using Statistical Package for the Social Sciences software version 16.0. Statistical tools like mean, median, range, proportions, and chi square were used as appropriate.

## RESULTS

In this study, 53.1% were boys and 46.9% were girls. Majority of the children were of 9 to 12 years and few children (10.4%) were above 12 years. About 35.8% mothers and 18.7% fathers were illiterate and majority of the parents were educated for about 7 years of schooling; 40.1% fathers and 29.8% mothers were unskilled/semi-skilled workers, engaged as daily wage earners (Table 1).

**Table 1:** Age and sex wise distribution of children

Age	Number	Percentage
9–10	104	34.8
10–11	78	26
11–12	86	28.8
>12	31	10.4
Sex		
Male	159	53.1
Female	140	46.9

**Table 2:** Oral health morbidities by symptoms

Symptoms	Frequency	Percentage
<i>Toothache</i>		
0–1 times	43	18.4
1–3 times	94	40.2
>3 times	97	41.4
<i>Sensitivity to hot and cold</i>		
0–1 times	86	41
1–3 times	71	33.8
>3 times	53	25.2
<i>Bleeding gums</i>		
0–1 times	31	23.1
1–3 times	64	47.7
>3 times	39	29.1
<i>Swollen gums</i>		
0–1 times	28	57.1
1–3 times	15	30.6
>3 times	6	12.2
<i>Discharge from gums</i>		
0–1 times	4	33.3
1–3 times	4	33.3
>3 times	4	33.3

About 234 (78.3%) children had suffered from toothache in the previous year, 18.4% children had one episode of toothache while 40.2% had multiple episodes. About 210 (70.2%) complained of sensitivity to hot and cold items of which 41% children experienced one episode of sensitivity to hot and cold items compared with 33.8% children having up to three episodes. About 134 (44.8%) children gave history of bleeding gums of which 47.7% had up to three episodes and 29.1% children had more than three episodes of bleeding gums.

Among 49 (16.4%) children with swollen gums, 57.1% had a single episode and 30.6% up to three episodes. Twelve children complained of discharge from gums (Table 2).

For the various oral health morbidities in the previous year, 23.9% (56) children did not take any treatment and 178 families sought some form of treatment. About 103 (44%) children took medicines available at home or from the local chemist. Only 32 (13.6%) children availed dental services; 43 (18.5%) children attended urban health center for their dental ailments (Table 3).

Among 178 families seeking treatment for dental ailments, 98 (55%) spent up to 50 INR on treatment of oral

**Table 3:** Source of treatment for oral morbidities

Source of Treatment	Frequency	Percent
No Treatment Taken	56	23.9%
Self/Local Chemist	103	44%
Private Dental Clinic	32	13.6%
Urban Health Centre	43	18.5%
Total	234	100%

**Table 4:** Distribution of different treatment advised

Type of treatment advised	Frequency	Percentage
Extraction	58	19.4%
Extraction and Restoration	124	41.5%
Orthodontic treatment	63	21%
Scaling	37	12.4%
Incision and Drainage	3	1%
No treatment needed	14	4.7%

morbidities, 13 (7.3%) spent between 50 and 100 INR, while 18 (9.7%) spent more than 100 INR; 50 (28%) children could not mention the expenses (Table 3).

About 78.3% children were found with dental caries. Children with periodontal diseases in the form of gingival bleeding were 44.8%, and 16.4% had gingivitis; 26.4% had plaque and calculus and 21% of children had malocclusion of teeth.

A team of dental experts examined the children for oral health morbidities and advised various types of treatment; 19.4% children required extraction, 41.5% required extraction and restoration, while 21% required orthodontic treatment (Table 4).

## DISCUSSION

Over the years, dental technology has impressively advanced and so has the understanding of oral diseases, yet disparities remain in both, between the rates of dental disease and access to dental care among various strata of population. Huge differences exist in health status including oral health between urban and rural population especially in India and other developing countries.<sup>8</sup> Although dental care is a part of primary health care in India, dental care services are available in very few states at a primary health care level.

In the present study, 61.2% of children suffered from bleeding and inflamed gums. This is similar to a study by Sharma et al<sup>9</sup> which had 53.4% of gingivitis. However, this percentage was much higher in other studies by Singh et al<sup>10</sup> (74.36%) and Sharma et al<sup>11</sup> (75.9%). A similar kind of study was done by Patel and Parkar<sup>12</sup> wherein the gingivitis was very low (12.23%) only in 12-year-olds.

In our study, 78.3% children had dental caries. Around 19.4% children needed extraction and 41.5% children needed both restorations and extractions. However, about 67.9% of children had never visited a dentist and around 44% had just taken painkillers from local chemist. This is similar to a study by Owino et al<sup>13</sup> from Kitale, Kenya where too around 63.7% of children had never visited a dentist, thus indicating low utilization of dental services.

The present study revealed that only 4.7% children had good oral hygiene. Sharma et al<sup>11</sup> in their study had

a similar low percentage (7.3%) of children with good oral hygiene.

Dental disease is a serious public health problem with global distribution. However, there is a huge gap between the actual need and utilization of dental care services especially among the low socioeconomic strata of the population. Some of the reasons underlying failure to seek dental treatment have been evaluated by Wakiaga et al<sup>14</sup> and included fear of dentists or dental disease not considered serious, lack of money, or the notion that the problem would resolve on its own.

A study carried out in Chidambaram deduced that there still exists a large segment of the population who continue to remain ignorant about the detrimental effects of poor oral health and the multiple benefits enjoyed from good oral hygiene.<sup>15</sup>

In our study, about 13.6% of the students visited a private dental clinic and 18.5% of students visited urban health care facility for their dental problems. This demonstrates that the habit of going to hospital for routine checkup is not prevalent in these strata of society. Low number of children receiving dental treatment could be due to low priority given to dental health care, or low perception of the need for oral treatment as compared with other needs.

Unmet treatment needs in vulnerable children have an impact on children's overall health and well-being.<sup>16</sup> In our study, the children were from low socioeconomic strata, where the parents were daily wage workers and the burden of untreated dental diseases and the cost of treatment add to the everyday challenges of these families. In a study by Samim et al,<sup>17</sup> most parents were daily wage workers and possibly the burden of untreated dental disease and barriers to access professional dental care adds to the everyday challenges of these families. This holds true in our study too and hence, the need for affordable dental care and easier access to dental care has to be addressed. Patients are not covered under any type of insurance and generally pay out of their pockets to get treatment from both public and private dentists.<sup>18</sup> Strategies that target parents and not just children may also help to address oral health disparities in children as it has been reported that parental dental care behaviors have an important effect on the health behavior of their children.<sup>19</sup>

There is a lot of anxiety and fear about dental treatment and this anxiety and cost of treatment can act as barriers for the population to seek treatment. Motivating the children and making them aware about their oral health problems so that they develop a positive attitude toward their dental care need to be developed. Oral health care needs to be more affordable and more oral health care centers should be made available to these strata of the population.

Children who suffer from poor oral health are 12 times more likely to have more restricted activity days including missing school than those who do not.<sup>20</sup>

Schools remain an important setting offering an efficient and effective way to reach children worldwide. Schoolchildren are particularly receptive and messages can be reinforced regularly throughout the school years.<sup>21</sup>

Preventive services should be given higher priority and need to be started early to target the primary dentition and prevent future caries in permanent dentition.<sup>22</sup>

Regular interval screening programs to assess the oral health and treatment needs of schoolchildren and provisions of treatment as per the need should be conducted.<sup>23</sup>

## CONCLUSION

Mobile dental vans, regular dental camps, and dental outreach programs need to be undertaken among schoolchildren to spread awareness and for early diagnosis of oral morbidities.

Reinforcement of knowledge is necessary which can be done by incorporating chapters on oral health and oral hygiene in school textbooks.<sup>23</sup> Also the teachers' training programs can ensure continuity of reinforcement. School dental health programs focusing on preventive and toothbrushing programs including fluoride mouth rinse should be implemented.

There is an urgent need for developing referral linkages for dental services for the schoolchildren to existing government/municipal dental clinics and hospitals. Active involvement of school teachers and parents is essential in improving oral health awareness and preventing oral morbidities among schoolchildren.

## REFERENCES

- Filstrup SL, Briskie D, da Fonseca M, Lawrence L, Wandera A, Inglehart MR. Early childhood caries and quality of life: child and parent perspectives. *Pediatr Dent* 2003 Sep-Oct;25(5):431-440.
- Patel N, Gunjana G, Patel S, Thanvi R, Sathvara P, Joshi R. Nutrition and health status of school children in urban area of Ahmedabad, India: comparison with Indian Council of Medical Research and body mass index standards. *J Nat Sci Biol Med* 2015 Jul-Dec;6(2):372-377.
- GAO/HEHS. Oral Health: dental disease is a chronic problem among low-income populations. Washington (DC): GAO/HEHS; 2000. p. 49.
- Gift HC, Reisine ST, Larach DC. The social impact of dental problems and visits. *Am J Public Health* 1992 Dec;82(12):1663-1668.
- Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol* 2003 Dec;31(Suppl 1):3-23.
- Shekar BR, Suma S, Kumar S, Sukhabogi JR, Manjunath BC. Malocclusion status among 15 years old adolescents in relation to fluoride concentration and area of residence. *Indian J Dent Res* 2013 Jul;24(1):1-7.
- Gautam DK, Vikas J, Amrinder T, Rambhika T, Bhanu K. Evaluating dental awareness and periodontal health status in different socioeconomic groups in the population of Sundernagar, Himachal Pradesh, India. *J Int Soc Prev Community Dent* 2012 Jul;2(2):53-57.
- Tandon S. Challenges to oral the health workforce in India. *J Dent Edu* 2004 Jul;68(7 Suppl):28-33.
- Sharma S, Parashar P, Srivatsava A, Bansal R. Oral health status of 9 to 12 year old school going children in Urban Meerut. *Indian J Community Health* 2013 Jan-Mar;25(1):61-65.
- Singh M, Saini A, Saimbi CS, Bajpai AK. Prevalence of dental diseases 5- to 14-year old school children in rural areas of Barabanki district, Uttar Pradesh, India. *Indian J Dent Res* 2011 May-Jun;22(3):396-399.
- Sharma A, Bansal P, Grover A, Sharma S, Sharma A. Oral health status and treatment needs among primary school going children in Nagrota Begwan block of Kangra, Himachal Pradesh. *J Ind Soc Periodontol* 2014 Nov-Dec;18(6):762-766.
- Patel DR, Parkar SM. Assessment of gingival and dental caries status among 12 and 15 years old school going children of Ahmedabad city. *JADCH* 2011 Mar-Aug;2(1):17-21.
- Owino RO, Masiga MA, Masigo FG, Nganga BM. Oral health knowledge, hygiene practices and treatment seeking behaviour among 12 year old children from Kitale municipality in Kenya. *East Afr Med J* 2011 Oct;88(10):332-337.
- Wakiaga JM, Kaimenyi JT, Kisumbi BK. Reasons underlying failure to seek dental treatment among Nairobi university students. *East Afr Med J* 1996 May;73(5):320-322.
- 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 Feb;5(1):146-151.
- Sheiham A. Oral health, general health, and quality of life. *Bull World Health Organ* 2005 Sep;83(9):644.
- Samim F, Aleksejuiniene J, Zed C, Salimi N, Eperumal CP. Dental treatment needs in Vancouver inner city elementary school aged children. *Int J Dent* 2013 Apr;2013:602791.
- Gambhir RS, Brar P, Singh G, Sofat A, Kakar H. Utilization of dental care: an Indian outlook. *J Nat Sci Biol Med* 2013 Jul;4(2):292-297.
- Isong JA, Zuckerman KE, Rao SR, Kuhlthau KA, Winickoff JP, Perrin JM. Association between parents and children use of oral health services. *Pediatrics* 2010 Mar;125(3):502-508.
- WHO. Oral health promotion: an essential element of a health promoting school. WHO Information Series on School Health Document Eleven. Geneva: WHO; 2003.
- Kwan SY, Petersen PE, Pine CM, Borutta A. Health Promoting schools: An opportunity for oral health promotion. *Bull World Health Organ* 2005 Sep;83(9):677-685.
- Sharva V, Reddy V, Bhambal A, Agrawal R. Prevalence of gingivitis among children of urban and rural areas of Bhopal district, India. *J Clin Diagn Res* 2014 Nov;8(11):ZC52-ZC54.
- Shailee F, Girish MS, Kapil RS, Nidhi P. Oral health status and treatment needs among 12- and 15-year-old government and private school children in Shimla city, Himachal Pradesh, India. *J Int Soc Prev Community Dent* 2013 Jan-Jun;3(1):44-50.