Original Article

Reasons For Dental Visits of Children at Dental OutpatientDepartment of a Tertiary Hospital in Dhaka: A Cross-Sectional Study

Hasan M.[1], Awal M.A[2], Siddique M.A.[3], Hasan M.M.B[4]

Abstract

Background: Children aged from 1-14 are susceptible to wide range of dental and oral problems including trauma that need dental support. The dental outpatient department serves a vital point for management of dental problems. The objective of the study is to assess the reasons and pattern of dental visits and associated factors among Bangladeshi children attending the dental outpatient department of a tertiary hospital in Dhaka.

Methodology: This was a cross-sectional observational study. The study sample comprised 450 children, aged between 1-14 years including both male and female. The respondents were asked about the frequency and reasons for their dental visits, oral hygiene practices, the experience of oral problems during the past 12 months, monthly income and educational attainment of parents. The descriptive and inferential statistics were calculated using Microsoft Excel 2010.

Result: The mean age of the surveyed children was 8.3 (±0.7) years; 52% were girls and 48% were boys. The majority of the parents were with higher secondary school education or above and only 6% were illiterate. The majority (57.78%) of the children brushed their teeth once a day and 34.88% do not brush every day. 66.33% children used toothpaste. 36.44% children visited the dentist for the first time, 38.22% children visited the dentist once in the past 12 months, 8.44% visited the dentist twice and but 16.89% children visited the dentist more than twice. 39.6% children visit the dentist during for problems with teeth, 19.1% visit the dentist for problem related to gingiva and 10.7% visited for dental emergency.

Conclusion: Dental emergencies were common reason of dental visit in tertiary hospitals. The patterns of dental visit of children appear to be problem-initiated rather than for primary prevention or checkups.

Keywords:*children, dental outpatient department, dental visit, dental emergency, oral hygiene.*

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1. **Mahmudul Hasan**, Assistant Registrar, Sir Salimullah Medical College Mitford Hospital, Dhaka,
2. **M A Awal, Lecturer**, Sir Salimullah Medical College, Dhaka
3. **Mohiul Alam Siddique**, Junior consultant, Sir Salimullah Medical College Mitford Hospital, Dhaka
4. **Md Masud Bin Hasan**, Lecturer, Sir Salimullah Medical College, Dhaka

*Corresponding Author

M A Awal, Lecturer, Sir Salimullah Medical College, Dhaka, Bangladesh.
Mobile: +8801716602741, Email: maawalssmc@gmail.com

Introduction

Good oral and dental healthis an integral part of the overall health and well-being ofchildren.Oral and Dental health problems can have a negative effect on their well-being, quality of life and overall health. Besides, dietary habit and oral hygiene practiceand some behaviors can affect the dental and oral health of children.

Dental and oral diseases pose a significant health burden of the children worldwide. In children the most common dental health problems are dental caries (89.47%) and periodontal diseases (21.05%).[1]Globally, more than 500 million children suffer from untreated cavities in their primary teeth, a condition that can greatly affect their overall quality of life.[2]The World Health Organization (WHO) states that the incidence of caries in children is 60-90% globally, mainly in developing countries.[3]In Bangladesh, approximately 32.3% of whole population belongs to 1–14 years.[4]Children aged from 1-14 are susceptible to wide range of dental and oral problems that need medical and dental support. Injury and trauma are also common in children involving oro-facial region and need emergency medical support.

Children represent a vulnerable demographic in dental an oral problem. The dental outpatient department serves a vital point of contact for assessing the dental health status of children. In a developing country like Bangladesh, dental services are very expensive and limited. Despite the high prevalence of dental and oral diseases among children, the number of dental outpatientsare also very few in the Dhaka city with a population more than 10 million. Although there is a scarcity of information on the patterns of dental visits among children and adolescents in the context of Bangladesh.Moreover, oral hygiene status, potential risk factors and oral health-related behaviors in the children attending the dental outpatient department are also need to be evaluated.

The objective of the study, therefore, is to assess the reasons and pattern of dental visits and associated factorsamong Bangladeshi children attending the dental outpatient department of a tertiary hospital in Dhaka.

Materials and Method

This cross-sectional, observational study employed in the dental outpatient department of a tertiary hospital in Dhaka with an estimated sample of 450 children aged 1-14years including both male and female. The sample size is determined by the following formula: $n = (z^2pq)/d^2$ where p is assumed to be 50% and at 95% confidence level with 5% allowable error. The sample size was calculated as 384 and increased to 450 due to availability.The children were recruited in this study randomly from the daily outpatient serial over a period of 45 weeks.

The research procedure was explained to each participant's guardian, and their informed consent was secured prior to administering the study instrument. Data were gathered using the World Health Organization (WHO) oral health questionnaire for children.[5]Ethical guidelines were maintained during clinical examinations and data collection procedures.

Participants were requested to share details regarding how often and why they visited a dentist, oral hygiene habits, including the type of toothpaste, any oral health issues experienced in the previous 12 months, and the educational background of their parents.The data was collected by interview and clinical examination of oral cavity. Inferential and descriptive statistics were calculated using Microsoft Excel 2010.[6]

Results

From the 450 filled questionnaires data were transferred to the statistical program for analysis. Result showed that, the mean age of the surveyed children was 8.3 (±0.7) years.Among the participants 3.33% of children were between 1-3 years of age, 13.33% between 4-6 years of age, 36.88% between 7-9 years, 30% between 10-12 years of age and 16.44% were between 13-14 years of age. Approximately half (234, 52%) of them were girls and rest half (216, 48%) were boys. Mean age of boys were 8.68 (±0.55) years and mean age of girls were 7.72 (±0.32) years.

The most of the parents (78%) were with higher secondary school grade or above and only 6% were illiterate. More than half (65.78%) of the respondents' family belongs to BDT 21000 to 30000 income group, 20.88% belongs to BDT ≤20000 income group and rest 13.33% were in above BDT 30000 income group (Table 1).

The oral hygiene practice of the respondents was presented in Table 2. The majority (260, 57.78%) of the respondents brushed their teeth once a day and only 7.33% of the respondents brush twice a day. About one third of the children (157, 34.88%) do not brush every day. The most of the children (300, 66.33%) reported that, they used toothpaste for cleaning teeth. But, only 2.66% were reported of using medicated or fluoridated toothpaste. 20.88% children use toothpowder and 12.44% use other material to clean their teeth.

Table 3 shows how often the respondents visited the dentist during the last 12 months. Among all more than one third of the children (36.44%) visited the dentist for the first time. 38.22% children visited the dentist once in the past 12 months.8.44% visited the dentist twice during the last 12 months but16.89% children visited the dentist more than twice.

Most of the previous visit (39.6%) to a dentist for the last 12 months was due to caries or pain from pulpitis. The second most common (19.1%) reason was pain or trouble related to gingiva (dento alveolar abscess, periodontitis etc.). Third most common (10.7%) reason was dental emergency (trauma to tooth, jaw bone or injury to the lips). Next most common (9.3%) reason was retained deciduous or delayed eruption. Table 5 reveals the types and frequency ofattended dental emergencies.

Table 1. Socio-demographic characteristics of children and parents

Age (mean, SD)	All	8.32 (±0.67)
	Male	8.68 (±0.55)
	Female	7.72 (±0.32)
Age (n, %)	1-3 years	15 (3.33%)
	4-6 years	60 (13.33%)
	7-9 years	166 (36.88%)
	10-12 Years	135 (30%)
	13-14 years	74 (16.44%)
Sex (n, %)	Male	216 (48%)
	Female	234 (52%)
Parents education level (n, %)	Higher than HSC	90 (20%)

	HSC	261 (58%)
	Primary	72 (16%)
	Illiterate	27 (6%)
Family income (n, %)	≤20000	94 (20.88%)
	21000-30000	296 (65.78%)
	>30000	60 (13.33%)

Table 2. Distribution of respondents by oral hygiene practice

Oral hygiene practice (n, %)	Not everyday	157 (34.88%)
	Once daily	260 (57.78%)
	Twice daily	33 (7.33%)
	Fluoridated toothpaste	12 (2.66%)
	Toothpaste	288 (64%)
	Toothpowder	94 (20.88%)
	Other	56 (12.44%)

Table 3. Frequency of dental visits in past 12 months

Frequency	**n (%)**	**male**	**female**
For the first time	164 (36.44%)	73 (44.51%)	91 (55.49%)
One visit	172 (38.22%)	88 (51.16%)	84 (48.84%)
Two visit	38 (8.44%)	23 (60.53%)	15 (39.47%)
More than two visit	76 (16.89%)	32 (42.10%)	44 (57.89%)
Total	450 (100%)	216 (48%)	234 (52%)

Table 4. Reasons for dental visits in past 12 months

Reason	**n (%)**	**Male**	**Female**
First time check-up	28 (6.2%)	13 (46.4%)	15 (53.6%)
Pain or trouble related to teeth (caries, pulpitis etc.)	178 (39.6%)	92 (51.7%)	86 (48.3%)
Pain or trouble related to gingiva (dento alveolar abscess, periodontitis etc.)	86 (19.1%)	39 (45.3%)	47 (54.7%)
Unerupted, missing, retained tooth	42 (9.3%)	24 (57.1%)	18 (42.9%)
Swelling, Cyst, Tumour	5 (1.1%)	3 (60%)	2 (40%)

Malalignment of teeth (Malocclusion)	18 (4%)	6 (33.3%)	12 (66.7%)
Cleaning teeth (Calculus)	12 (2.7%)	8 (66.7%)	4 (33.3%)
Dental emergency	48 (10.7%)	26 (54.2%)	22 (45.8%)
Tongue an oral mucosal lesion	25 (5.1%)	9 (39.1%)	14 (60.9%)
Tongue tie	8 (1.7%)	5 (62.5%)	3 (37.5%)
Cleft lip or Palate	2 (0.4%)	2 (100%)	0

Table 5. Frequency of Common Dental Emergencies

Condition	**Clinical findings**	**n (%)**
Tooth avulsion	Visibly missing	4 (0.88%)
Tooth Fracture	Visible fracture, radiography	8 (1.78%)
Tooth Luxation	mobility of the tooth	15 (3.33%)
Injury to the lips	Bleeding and visible injury	12 (2.66%)
Jaw Fracture	Pain and occlusal disharmony confirm with radiography	3 (0.67%)
Total		42 (9.33%)

Discussion

Access to oral health services for the children is considered a significant predictor of quality healthcare service. A significant portion of the population still has difficulties accessing dental and oral health care services in Bangladesh. The need for greater attention from the health care systems towards dental and oral health care services for children is urgent in order to guarantee overall health of the children.

This present study assessedthe reasons and pattern of dental visits of Bangladeshi children. The present study documented that problems with teeth (caries, pulpitis etc.) was the most common reason (39.6%) for dental attendance followed by problem related to gingiva (dento alveolar abscess, periodontitis etc.) and different dental emergencies (trauma to tooth, jaw bone or injury to the lips).

These findings are in accordance with the available body of evidence. A previous study conducted by Ali showed similar observations. In accordance to the observation of this present study, he also found dental caries (22.7%) and grossly destructed carious teeth (19.9%) as the most common cause of dental visit.[7] Likewise the next most common (11.5%) reason was dento alveolar abscess. Other causes of dental visit included pulpitis, retained decidous teeth, mucosal lesion of tongue ororal mucosa and raumatic injury of tooth, soft tissue and bone. Another study conducted by Tasnim and Khanum showed that, 51.33% of children brushed their teeth once daily and most of them did not brush their tooth at night or after dinner.[8] They also found that, most of the children visit (39.6%) to a dentist only when they experienced pain, gum problems, or for tooth extractions.

Apart from Bangladeshi children, Zhu et al. found that 29% of Chinese children visited the dentist due tovisible dental caries or pain.[9] Another studyfrom Kuwait reported that 53% of the childrenvisit to a dentist only when they experienced pain, teeth or gum problems.[10] However, children expressed esthetics/appearance as the major cause of dental visits in the developed country like USA.[11]

There is no comprehensive oral health awareness program for children has been established and run in the country. Regular checkups and good dental hygiene can help prevent the need for most of the dental disease. But, in Bangladesh most of the children visit dentist mostly for treatment purpose. There isvery little incident (6.2%) of first time check-up for preventive dental care in the dental outpatient departments in the hospitals of Bangladesh. In contrast, the patterns of dental visits among children and adolescent appear different in developed countries. In the USA 57.8% children below 15 years visit their dentist and 20.8% children underwent preventive dental care.[12]In a survey among Australian children, 81.8% visited the dentist at least once in the past 12 months.[13] Similarly, 84% and 79.9% of adolescents made dental visits during the last one year in Canada and New Zealand, respectively.[14,15]

Similarly Zhu et al., reported that 52.2% of Chinese children had never visited a dentist who were 12–18 years old.[9] On the other hand, a study of Nigerian children showed that 80% had never saw a dentist.[16]Apart from this observations, in the USA only 2% of adolescents had never had a dental examination.[17] It can be assume that, access to oral healthcare is influenced by social, economic and cultural factors. Moreover, the geographic distribution and availability of healthcare resources may play an important role. However, many barriers related to these factors can be overcome by increasing oral hygieneawareness, improving dental care resources, and developing sustainable policyto ensure the optimal oral and dental health.

It is important to understand the patterns of dental visit of the children for the prevention plan and allocation of resource and dental health care services. It can be helpful for the planning of preventive dental care for children, early dental problem identification and prevention, developing good oral hygiene practice and good dental and oral health in the long run. Although professional guidelines recommend that, children have their first dental visit by age one, only few can had such a visit, as most of the dental visit was for seeking treatment or for dental emergency.[18] However, availability of treatment preventive service in the hospitals of Bangladesh is very limited. Moreover, the dental consultation and treatment are costly. The expenditure on dental care is typically 5 percent of the total cost of health care and 20 percent of pocket health expenses.[19]Thus, both preventive measures and treatment facilities should be increased according to the need.

Conclusion

The most common reason for dental attendance was for problems with teeth and gingiva (caries, pulpitis, dento alveolar abscess, periodontitis etc.). The present study documented that different dental emergencies (trauma to tooth, jaw bone or injury to the lips) are common reason of dental visit in tertiary hospitals. The patterns of dental visit of childrenappear to be pain or dental problem related rather than preventive measure or checkups. It is importantto introduce educational programsfocused on preventive dental care and to aware the parents about the importance of regular visitsto the dentistfor the early prevantion of dental problems.

Authors' contributions

All authors contributed equally from research design to manuscript preparation. All authors checked the final manuscript and approved for publication.

Conflict of interest

The authors declare that they have no conflict of interest.

Ethical approval

All procedures performed in the study were in accordance with the ethical standards of the institutional (BMDJ) guidelines and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Informed written consent was taken from legal guardian of all participants.

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