



Original Article

A Study of Dental Caries Status in Relation with Dental Check-up among Children in Rajshahi

Md. Shoyeb Rahman,¹ Md. Nahid Khurram Choudhury,² Md. Ismail Hossain,³ Shahina Shoheli⁴

Abstract

Background: The study aimed to assess the importance of dental check-ups for preventing dental caries among children 5-12 years of age in Rajshahi.

Materials & methods: This descriptive study was conducted in Dental Unit, Rajshahi Medical College, Different Dental Clinics, Dental Chambers in Rajshahi City Corporation from January 2018 to December 2019. A total number of 370 participants were allocated to detect dental caries and history of visiting dental clinics or hospitals for a dental check-up. A cross-sectional survey using a self-structured questionnaire and clinical examination of the oral cavity were conducted among participants to detect dental caries.

Results: 8.92% of participants visited dentists for a regular dental check-up, whereas 49.73% visited dentists only when they had pain or problems with their teeth. 40.81% of participants had dental caries who never visited dentists, and 47.57% of participants were suffering from dental caries who went to the dental clinic or hospital only when there were necessary or emergency.

Conclusion: Regular dental check-up reduce the possibility of dental caries among children.

Key Words: Oral Disease, Dental Caries, Children, Dental Checkup.

TAJ 2021; 34: No-2: 90-94

Introduction

Oral diseases such as dental caries, periodontal disease, tooth loss, etc. are major public health problems worldwide, and poor oral health profoundly affects general health and quality of life.¹ Increased incidence of dental caries in children and adolescents has been observed in developing countries, in contrast to developed countries.² Previous studies have demonstrated the multifactorial relationship of plaque, sugar consumption, tooth susceptibility, and time with the development of dental caries.³

Nutritional transition with easy access to refined carbohydrates, low use of fluoride toothpaste and irregular tooth brushing habits lead to the increasing trend in dental caries in developing countries.^{4,5} Although children have a basic knowledge of dental health, such as the importance of proper brushing and diet in preventing dental caries, many fail to brush their teeth and consume cariogenic foods. They may underestimate health risks.⁶ But in our country, children and their parents do not understand the benefit of regular dental check-ups as a preventive measure for dental caries.

¹ Assistant Professor, Department of Dentistry, Dental Unit, Rajshahi Medical College, Rajshahi.

² Associate Professor, Department of Dental Pharmacology and Head, Dental Unit, Rajshahi Medical College, Rajshahi.

³ Assistant Professor, Department of Conservative Dentistry and Endodontics, Dental Unit, Rajshahi Medical College, Rajshahi.

⁴ Lecturer, Dental Unit, Rajshahi Medical College, Rajshahi.

It is needless to say that sound health cannot be attained or maintained without strong dental health. Dental caries is a highly prevalent chronic disease, and its consequences cause a lot of pain and suffering. Millions of people throughout the world have lost their teeth due to caries. Dental caries is a localized, post-erupted, pathological process of external origin involving softening of the hard tooth tissue and proceeding to the formation of a cavity. Since 80% of the children reside in underdeveloped countries, it is evident that preventive measures must be taken for these children to improve their oral health. Tooth decay is the most chronic condition affecting children today, with 60–90% of school-going children having dental cavities or decaying teeth.

Dental caries is the most prevalent dental affliction of childhood. Despite credible scientific advances and the fact that caries are preventable, the disease continues to be a significant public health problem. In developing countries changing lifestyles and dietary patterns are markedly increasing the caries incidence.⁷

A common misconception that children's milk teeth will exfoliate and less need to seek expert dental advice may lead to various dental problems such as malocclusions, dental caries, and periodontal problems.^{8,9,10}

Numerous studies carried out in different countries have shown that the application of preventive measures and improvement of the social environment considerably reduces dental caries rates.¹¹ Low-education and low-income families do not pay enough attention to dental care measures and regular preventive visits to a dental professional, resulting in the development of dental caries.¹² Along with proper oral hygiene

maintenance, regular dental check-up significantly impacts dental caries in children.

Hence this study aimed to assess the dental caries status with regular dental check-ups among the children of 5 to 12 years old, which would help us plan and implement necessary preventive measures.

Materials and Methods

It was a cross-sectional type of descriptive study done in the Dental Unit, Rajshahi Medical College, Bangladesh, and Dental Chambers in Rajshahi City Corporation, Bangladesh. Between January 2018 to December 2019, 370 children of both male and female aged 5 to 12 years were enrolled in this study. Age < 5 years and > 12 years were excluded from this study.

Instruments of the research:

The present study utilized two main tools:

(a) Detailed socio-demographic data and dental history collection through the questionnaire.

(b) Clinical examination.

Methodology: We conducted a cross-sectional survey using a self-structured questionnaire related to demographic variables, educational level, oral hygiene maintenance, food habits, caries status, time of dental check-up, knowledge about dental caries, and their prevention. Clinical examination of the oral cavity were done among participants. Questions were objective and closed-ended and were divided into different categories according to the specific areas of awareness, knowledge focusing on preventive measures for dental caries.

Results

Table 1: Distribution of participants based on the socioeconomic status of their parents (N=370):

Socioeconomic status of parents	Number of participants	Percentage of participants
Low	166	44.87%
Medium	113	30.54%
High	91	24.59%

Table 2: Number & percentage of Dental check-up of the participants belonging to different socioeconomic status (N=370)

Socioeconomic status of participants	Dental check-up/visit to dentists			
	Regular		When necessary	Never
	Half-yearly	Yearly		
Low	00(00%)	00(00%)	99 (26.76%)	67 (18.11%)
Medium	02(0.54%)	08 (2.16%)	65 (17.57%)	38 (10.27%)
High	03 (0.81%)	20 (5.41%)	20 (5.41%)	48 (12.97%)
Total (370) %	05 (1.35%)	28 (7.57%)	184 (49.73%)	153 (41.35%)

Among the study population, 41.35% of participants never visited dentists for their dental check-up; on the other hand, 1.35% had experience of half-yearly dental check-ups, and 7.5% of the participants had yearly dental check-ups for the prevention of dental caries. 49.73% of participants visited dentists only when they had dental pain or other sufferings from teeth.

Figure 1: Pie chart showing the percentage of dental check-up among participants (N=370).

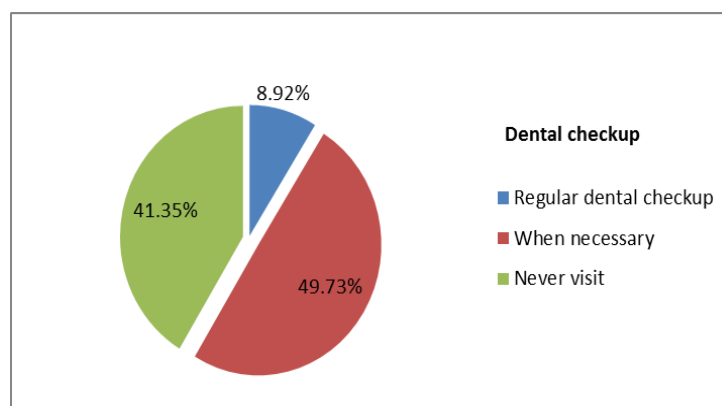


Table 3: Relationship of dental caries with the time of dental check-up among participants belonging to different socioeconomic statuses (N=370)

Status of Dental check-up	Number & percentage of Carious teeth				
	Single	Double	Triple	Multiple	Total number of participants (%)
Half-yearly	01(0.27%)	00 (00%)	00 (00%)	00 (00%)	01 (0.27%)
Yearly	05(1.35%)	04(1.08%)	01(0.27%)	00 (00%)	10 (2.70%)
When necessary	30(8.11%)	50(13.51%)	20(5.41%)	76(20.54%)	176 (47.57%)
Never	27(7.30%)	33 (8.92%)	15(4.05%)	76(20.54%)	151 (40.81%)

Among the study population, 47.57% were suffering from dental caries who went to dental clinics or hospitals only when they had dental pain or other sufferings from teeth. 40.81% of participants were found to have dental caries among the study population who never visited dentists. On the other hand, only 2.97% of participants were found to have dental caries who went to a dental hospital or clinic for a regular dental check-up.

Discussion

In the present study, it was seen that the practice of visiting the dentist for a regular check-up was poor (8.92%) in the studied population, and most of them had a habit of going to the dentist only when they have pain or problems in the teeth (49.73%). Khanal S et al. also noted that regular dental check-up was done only by 5.6% of participants, and 77.4% studied population had a habit of going to the dentist only when they have pain in the teeth.¹³ It was also reported in another study that only 11% of the 7- to 12-year-old children visited a dental professional for routine check-ups.¹⁴ In the present study, regular dental check-up was the highest (6.22%) among the participants of high socioeconomic status (HSES), and it was nil in low socioeconomic status (LSE). This difference was due to a lack of knowledge about dental check-ups and high treatment costs. Even though a higher number of the HSES participants visited dentists once a year, it is still far less than the Canadian schools where 50% of the school students used dental services once every six months.¹⁵ Lack of dental insurance, high cost of treatment, the long waiting period between appointments, phobia of the dentists, and the

treatment were the contributing factors of the low percentage of a regular dental check-up.¹⁶ In the present study, it was also observed that 40.81% of participants had dental caries who never visited dentists, and 47.57% participants were suffering from dental caries who went to the dental clinic or hospital only when there were necessary or emergency. In another study, it was found that 67.8% of participants had dental caries.¹³ This increase in the caries status could be due to the changing pattern of lifestyle, the diet habit, and the ignorance shown by the people regarding periodic visits to the dentist.

Conclusion

The incidence of dental caries is lower among participants who had regular dental check-up as regular dental check-up facilitates early diagnosis and treatment of dental caries. This study suggested that routine dental follow-up is essential for the prevention of dental caries.

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 Sep;83(9):661-9.
- Suprabha BS, Rao A, Shenoy R, Khanal S. Utility of knowledge, attitude, and practice survey, and prevalence of dental caries among 11- to 13-year-old children in an urban community in India. *Glob Health Action*. 2013; 6: 10.3402/gha.v6i0.20750. PMID: PMC3643074.
- Yee R, McDonald N. Caries experience of 5-6-year-old and 12-13-year-old schoolchildren in central and western Nepal. *Int Dent J*. 2002 Dec; 52(6):453-60.
- Dixit P, Shakya A, Shrestha M, Shrestha A. Dental caries prevalence, oral health knowledge and practice among indigenous Chepong school children of Nepal. *BMC Oral Health* 2013 13:20.
- Sudha P, Bhasin S, Anegundi RT. Prevalence of dental caries among 5–13-year-old children of Mangalore city. *J Indian Soc Pedod Prev Dent*. 2005;23:74–79.
- Redmond CA, Blinkhorn FA, Kay EJ, Davies RM, Worthington HV, Blinkhorn AS. A cluster randomized controlled trial testing the effectiveness of school-based dental health education program for adolescents. *J Public Health Dent*. 1999;59:12–17.
- Rao A, Sequeira SP and Peter S. Prevalence of dental caries among school children of Moodbidri. *J Indian Soc Prev Dent* 1999, 17(2): 45-48.
- Petersen PE and Steengaard M. Dental caries among urban school children in Madagascar. *Community Dent Oral Epidemiol* 1988, 16: 163-66.
- Holbrook WP, Soet DJJ and Graaff DJ. Prediction of dental caries in pre-school children. *Caries Res* 1993, 27: 424-430.
- Paunio P, Rautava P, Sillanpaa M and Kaleva O. Dental health habits of 3 year- old Finnish children. *Community Dent Oral Epidemiol* 1993, 21: 4-7.
- Sandström A, Cressey J and Stecksén-Blicks Ch. Tooth-brushing behaviour in 6–12 year olds. *Int J Paediatr Dent* 2011, 21: 43–49.
- Costa SM, Martins CC, Bonfim MC, Zina LG, Paiva SM and Pordeus IA. A systematic review of socioeconomic indicators and dental caries in adults. *Int J Environ Res Public Health* 2012 9: 3540–3574.
- Khanal S, Acharya J. Dental caries status and oral health practice among 12-15-year-old children in Jorpati, Kathmandu. *Nepal Med Coll J* 2014; 16(1): 84-8.
- Rajab LD, Petersen PE, Bakaeen G and Hamdan MA. Oral health behaviour of schoolchildren and parents in Jordan. *International Journal of Paediatric Dentistry* 2002, 12: 168-176.
- Scott G, Brodeur JM, Olivier M and Benigeri M. Parental factors associated with regular use of dental services by second-year secondary school students in Quebec. *J Can Dent Assoc* 2002, 68: 604-608.
- Mirza QAB, Syed A, Izhar F and Khan AA. Oral health attitude, knowledge, and behavior amongst high and low socioeconomic school going children in Lahore, Pakistan. *Pakistan Oral & Dental Journal* 2011, 31 (2): 396-401.

All correspondence to
Dr. Md. Shoyeb Rahman
 Assistant Professor,
 Department of Dentistry
 Rajshahi Medical College.
 Email :drtarek78@yahoo.com