



Oral health status of disabled children attending special schools of Dhaka city.

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ABSTRACT

Background: Children with disabilities and special needs present unique challenges for oral health professionals in the planning and carrying out of dental treatment. oral health care workers need to take cognizance of when preparing treatment plans for children with special needs. Children with disabilities are considered to be a high risk group for dental diseases specially dental caries and periodontal disease. High rates of dental caries, missing teeth, periodontal disease and malocclusion are all indicators of poor oral health of children with disabilities. **Objectives:** The aim of the study was to assess the oral health status of disabled children in special schools of Dhaka city. **Study design:** This was a cross sectional study. **Study settings and period:** The study was conducted in two elementary schools at mirpur area of Dhaka city in the period between of between february 2014 to January 2015.

Subjects: 200 disabled children with the age range from 6 to 14 belonging to six different disability groups were examined. Participants were grouped according to their type of disability autistic children, Down syndrome, Cerebralpulsy, mute and deaf, blind and physical disability. **Methods:** Data was collected by using semi structured quationnaire and checklist. Data were analyzed by statistical package of social science (SPSS- 20). **Results:** According to disability the participants autistic 44%, cerebral pulsy 37%, down syndrome 35%, blind 28%, deaf and mute 30% and physical disability 30%. The average number of decayed tooth was found 6.89%. Mean DMFT value was 4.75. Average number of missing tooth was 1.89%. Prevalence of dental caries highest 71% in autistic children then other cetagory of disability .Oral hygiene practice of the respondent found very poor. 76% children brush teeth in the morning and once in a day. 49% respondent use toothpick to clean food from in between teeth. 37% of the respondent never visited to dentist. 34.5% respondents had normal gingiva, 49% had mild gingivitis and 16.5% had marked gingivitis. Highest numbers of trauma cases were recorded in visually impaired group. 98.7% children required some form of dental treatment.

Conclusion: Oral health status of children with disabilities was poor and it is important to concentrate on a preventive approach and provide proper dental education to parents of disabled childrens. More attention should be paid to the oral hygiene practice of disabled children

KEY WORDS:

Caries, Disabled children, Oral Health, Hygiene

INTRODUCTION:

Disability is a universal element in the human condition to which no one is immune. Unrecognized as a problem for development, the condition of being disabled is at the bottom of the development agenda. This low priority can be explained in public choice theoretic terms by the political weakness of disabled persons and by the high perceived economic costs and low perceived political benefits of a state response to problems which are administratively anomalous and transactions-costly¹. Such a calculus operates more powerfully on the comprehension of the issues and welfare agendas of the least developed countries like Bangladesh than that of developed ones. The comprehension on disability, throughout the history, has rested on make-belief ideas. The direct result of these stereo-typed imaging and consequential action by the society and policy on the persons with disabilities has been

their neglect^{2,6}. This neglect bars persons with disabilities from normal economic, social and political activities in their families, communities, essential services and education, etc In Bangladesh, there have been only a few systemic interventions to raise awareness of persons with disabilities at the community level. They are usually excluded from existing governmental and non-governmental development programmes⁴. The number of employed persons with disabilities is assumed to be less than 1%. Such neglect is a top as national data on disability is very scarce and is far from reflecting the reality. There have been no attempts to conduct regular national disability prevalence survey³ by the national statistical agency, Bangladesh Bureau of Statistics. Action Aid-Bangladesh and Social Assistance and Rehabilitation for the Physically Vulnerable put the percent of person with disability at 8.8% of the total population. Bangladesh ProtibandikalyanSamiti records 7.8%, while in another survey Action Aid Bangladesh (1996) records 14.04% people suffered from a form of impairment^{4,5}. On the other hand, the Government of Bangladesh (GOB) surveys in 1982, 1986 and 1998 estimated a national prevalence rate of disability at 0.64%, 0.5% and 1.60% respectively. The WHO's global estimate predicts approximately 10% of all people have a disability of one kind or another^{4,5}. Bangladesh with some sources quoting a higher disability rate in rural Bangladesh. Oral health is a vital component of overall health, which contributes to each individual's well-being and quality of life by positively affecting physical and mental wellbeing, appearance, and interpersonal relations³. Oral health is an important aspect of health for all children, and is more important for children with special health needs. People with disabilities deserve the same opportunities for oral health and hygiene as those who are healthy. Unfortunately, oral health care is of the greatest underserved health needs of the disabled people. Inadequate dental care or poor dental public health measurements may have negative influence on their oral health status. Dental caries is also the major cause of tooth loss in individuals with physical and mental disabilities. Several studies have noted that disabled subjects have higher levels of caries, lower levels of care and a much higher proportion of untreated lesions but receive less treatment than the normal population. Logical studies reported that children with disabilities tended to have poorer oral hygiene and a greater prevalence and increased severity of periodontal disease than their normal counterparts¹². Around 10% of the world's population, or 650 million people, live with a disability. This figure is increasing through population growth, medical advances and the ageing process. According to the UN Development Programme around 80% of people with disabilities live in developing countries^{5,7}. There are a myriad medical, social, psychological, oral and dental considerations that oral health care workers need to take cognizance of when preparing treatment plans for children with special needs. If all these factors are fully integrated into the treatment plan, the resulting care and management will provide the best chance

of helping the individual with special needs to achieve and maintain a lifetime of good oral health^{7,9}.

MATERIALS AND METHODS:

This descriptive type of cross sectional study was conducted between the period of February 2014 to January 2015 in two elementary school of Dhaka city. After obtaining the ethical clearance from the institutional ethical committee. 200 disabled children with the age range from 6 to 14 belonging to six different disability groups were examined. Students were selected purposively as study sample. Participants were grouped according to their age 6-8, 9-11, 12-14 and to their type of disability autistic children, Down syndrome, Cerebral palsy, mute and deaf, blind and physical disability. Data were collected by using structured questionnaire and checklist was used to find out the oral health indices DMFT (Decay, missing, filling, treatment need index) and CPITN (Community periodontal index). Data collected through face-to-face interview of guardians of the students. Oral examination of the students done after taking

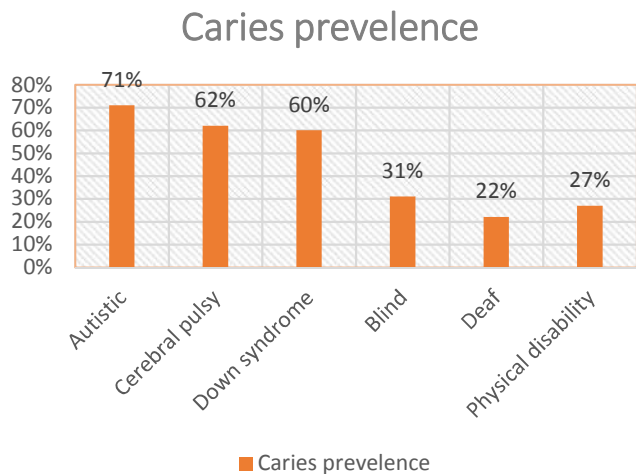
verbal consent of the class teachers and parents. Data were collected on the basis of knowledge about dental problem, maintenance of oral hygienic tools, knowledge of prevention of dental disease and oral hygienic index, periodontal index, plaque index, gingival index. Materials used for oral examination were –dental caries probe, dental mirror, cotton, antiseptic solution. The students' dental examinations were carried out with torch light on normal chair. Pointed end of the caries probe was gently pressed over the black marks if any on the tooth surface to identify carious teeth. Tip of the periodontal probe was introduced into the selected gingival margin to score the gingival condition. The data were checked before leaving the interview area and necessary correction were made at the spot. **Statistical Analysis:** SPSS software package (version 20) was used to analyze the data. Descriptive statistics were used for all variables. Values were expressed as percentage.

RESULTS:

Among 200 disabled children 57% were male and 43% were female. According to age group 6-8=40.50%, 9-11= 35.50%, 12-14= 24%. According to disability autistic 44%, cerebral palsy 37%, down syndrome 35%, blind 28%, deaf and mute 30% and physical disability 30%. The average number of decayed tooth was found 6.89. Mean DMFT value was 4.75. Average number of missing tooth was 1.89%. Prevalence of dental caries in autistic children 70%, cerebral palsy 62%, Down syndrome 55%, blind 31%, deaf 22%, physical disability 27%. Oral hygiene practice of the respondent found very poor. 76% children brush teeth in the morning and once in a day. 49% respondent use toothpick to clean food from in between teeth. 59.5% parents don't know about using fluoride containing toothpaste. 37% of the respondent never visited to dentist. 16.5% respondents had normal gingiva, 46% had moderate gingivitis and 16% had severe gingivitis. Highest numbers of trauma cases were

recorded in visually impaired group. 93.7% children required some form of dental treatment.

Figure 1: Distribution showing caries prevalence according to disability of participants.



The figure 1 reflects higher rate of caries prevalence among all groups of participants. Caries prevalence higher in autistic children 71%, cerebral palsy 62%, Down syndrome 60%, blind 31%, deaf 22% and physical disability 27%.

Table 1: Distribution showing caries prevalence in primary dentition and permanent dentition by disability type.

Disability type	Primary caries prevalence(%)	Dentition caries prevalence(%)	Permanent caries prevalence(%)
Autism	73.8 (26.2)		60 (40)
Cerebral palsy	62.2 (25.8)		65.8(10.2)
Down syndrome	54.5 (44.5)		58.9 (25)
Blind	31 (23.5)		82 (11.5)
Deaf	37 (24.5)		62 (32)
Physical disability	27 (18.1)		45 (22)

Table 1 reflects caries prevalence in primary and permanent dentition among all the disability. where higher caries prevalence in both primary and permanent dentition found in autistic children, cerebral palsy and down syndrome then other category of disability.

Table 2: Distribution showing mean value of DMFT by disability type:

Disability type	Mean (SD) of DMF(T)	Median(IQR)	P-value(KruskaWallis test)
Autism	4.9±3.3	2 2.0 (4.0)	
Down syndrome	3.9±5	2 4.0 (6.0)	
Cerebral palsy	4.6±8.1	3.0 (8.0)	<0.001
Blind	3.7±3.9	4.0 (4.0)	
Deaf	2.9±4.2	3.0 (5.0)	
Physical disability	3.7±3.9	4.0 (4.0)	
Total (N-200)	4.75±2	3.0(4.0)	

Table 2 reflects mean DMFT for total population is 4.75. Autistic children has higher DMFT index (4.9±3.3) and lowest in deaf and mute children (2.9±4.2)

Figure 2 : Distribution of periodontal status among all disability

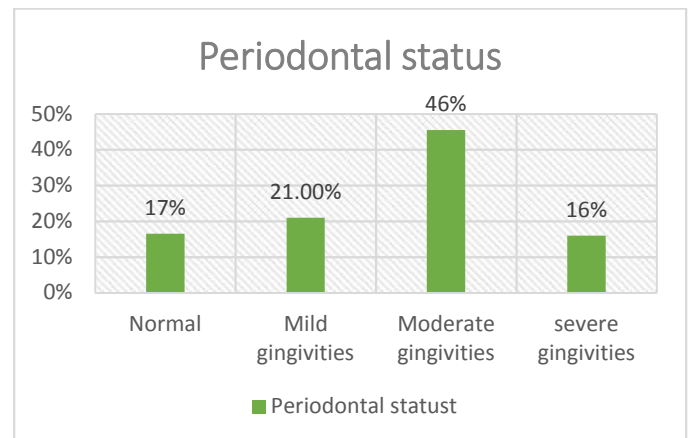


Figure 2 reflects periodontal status among all disabled child. where moderate gingivitis found 46%, severe gingivitis 16%, mild gingivitis 21% and normal 17%.

DISCUSSION:

Oral diseases are one of the common health problems among individuals with disabilities. The prevalence and severity of oral disease among this group are higher when compared to the general population.⁶ As a result of low physical abilities with subsequent difficulties in maintaining oral hygiene, these individuals have poor oral cleanliness.^{11,12} This study was conducted to assess the oral health status of specially challenged children in two elementary school of Dhaka city. Oral hygiene of majority of the study participants was compromised due to the presence of calculus and/or bleeding gums with no significant difference among the disability types. Many studies have reported similar findings, and this has been attributed to improper brushing technique and inadequate knowledge of oral hygiene practices despite the high prevalence of parental attention.^{11,21,22} Similar findings are reported in studies conducted in Turkey by Altunet *al.*²² among 136 disabled individuals and Gizaniet *al.*²¹ in Belgium among 12-year-old disabled children which showed poor oral hygiene in 31.8% of children, with no significant differences found among disability types. Several other studies^{12,14} have also found poor results for periodontal health and oral cleanliness among children with disabilities. These results may be due to low physical abilities, which could cause difficulties in tooth brushing among disabled children. DMFT index was used to measure the dental caries levels among the study population. The overall DMFT and dft levels were higher in females compared to males. These findings are similar to those found in many other studies conducted in Saudi Arabia, North Korea, Israel, and Canary islands.²² Overall DMFT levels in our study population were around 4.75 for deciduous dentition and 3.89 in permanent dentition. Similarly, higher levels of caries were reported in other studies.²⁴ Gizaniet *al.*²¹ reported a mean DMFT value of 4.75.

Important factor to be considered here is that improvement of the oral health depends on the awareness of their families of the importance of oral hygiene habits. In our study, we found higher proportion of decayed teeth and very few filled teeth which points to the fact that the dental care for these children was nearly nonexistent. We found a significant difference in caries burden in children of different disabilities. Children with autistic, cerebral palsy and Down's syndrome had significantly higher caries burden. Similar findings have been reported by Gardens *et al.*² Furthermore, it was found in our study that the filled teeth and missing teeth were present among the study participants. This can be attributed to the fact that majority of the children were noninstitutional and had access to dental services. The treatment needs reflect the high need for restorative and rehabilitative world.^{2,12}

CONCLUSION:

A high proportion of treatment needs found in this study reflect the barriers to access and utilize oral health care among these children. Furthermore, a high cost of dental treatment may further discourage the children and their caregivers from getting the treatment. Concerned authorities should take necessary steps in improving the oral health of these children and take steps to provide the caretakers the monetary support needed to achieve optimum health of children. As dentist, we should emphasize on health education and periodic recall and monitoring among these individuals.

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