Assessment of Oral Health Status among Visually Impaired Children In Bhavnagar City

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Abstract

Background: Oral Health is an important aspect of health for all children, and is all the more important for children with special health needs. Children with disabilities deserve the same opportunistics for oral health.

Aim: To access the prevalence of dental caries, oral hygiene and traumatic injuries in visually impared children in Bhavnagar city.

Method: The study population consisted of 75 visually impaired school going children in the age group of 5-15 years. The examination procedure and criteria were those recommended by WHO in 1997.

Result: Exhibited suboptimal levels of oral health with majority of the children showing a high caries prevalence (DMF/def was 1.58 /0.42, OHI was 1.21 and trauma was 31.5%) that was experienced in children.

Key words: Dental caries, oral hygiene, traumatic injuries, visually impaired

Introduction

Dental hygiene is an important aspect of health for children, and more important for children with special health needs. WHO defines visual impairment as, "visual acuity of less than 3/60m or corresponding visual field loss in the better eye with the best possible correction" which means that a visually impaired person can see up to 3m distance whereas a non-visually impaired person can see up to 60m distance. Visually impaired childre face challenges in there evry day to day life skills.

Preservation and conservaton of proper oral hygiene is one major factor among them. There are two types of visual disability, namely low vision (partially blind) and absolutely nil vision (totally blind).[1]The World Health Organization in May 2009 estimated that about 314 million people are visually impaired, and 45 million of them are blind globally. Visually impaired children have a poorer dental hygiene when compared with their normal sighted peers.[2] Conventional methods for teaching oral hygiene involves use of visual perception,

using disclosing agents to visualize the plaque and tooth brushing to remove it, and use of re-disclosing periodically to check their improvement of dental hygiene status. Sadly, none of these measures are beneficial to visually impaired children who depend much more on feeling and hearing to learn.[3] The main factor of differentiation between normal patients and blind ones is the difficulty in removing plaque.[3]The visually impaired people are at a greater risk to develop caries, since they cannot figure out the early signs of caries such as discoloration which indicates the disease process. The main factor of removing bacterial plaque for development of caries and continuous motivation to correct the oral hygiene procedures is fundamental in order to keep a good oral hygiene in visually impaired patients.[4] For effective plaque control Chemical plaque management is advised in visually impaired patients. In order to reduce the prevalence of dental caries among visually impaired children there is utmost need of individual training in oral care and plaque control.[5] These children are always in disadvantage as they are often unable to adequately apply the techniques of controlling plaque and avoiding dental caries. Visual impairment (or vision impairment) is a decreased ability to see. Around 285 million people are estimated to be visually impaired worldwide: 39 million are blind and 246 have low vision. India is among the countries with the largest number of people suffering from blindness or visual impairment. According to an article in Deccan Herald, it is estimated that prevalence of Childhood blindness in India is 0.8/1000 children in <16 years age group, implying a total of 300,000 blind children in our country.[6]The aim was to assess the prevalence of dental caries, oral hygiene and traumatic injuries in visually impaired children in Bhavnagar city and the objectives was 1) to assess their knowledge about oral health awareness, 2) to assess oral hygiene and caries and to assess the need of oral health awareness programs.

Materials and Methods

Cross sectional study was conducted in the special child school at Bhavnagar city. Clearance from the ethical committee and the institutional research board was obtained. Permissions and Approval were taken from the Head of the Department of Pediatric and Preventive Dentistry, College of Dental Science and Hospital, Amargadh, Bhavnagar, Gujarat, India and principals of the respective special schools who participated in the study. Only 5-15-year-old children who could read and write in braille and were ready to answer the questionnaire were included for the study. The visually impaired children were examined on an ordinary chair, and under

natural daylight using the mouth mirror and explorere. A single investigator was assisted by a trained person for recording the data throughout the study. The visually impaired children were examined seated on an ordinary chair, and under natural daylight using the mouth mirror and sharp probe. A single investigator was assisted by a trained person for recording the data throughout the study.

A total of 75 blind school children were subjected to the study, where in 35 were girls and 40 were boys. An age group in the range of 5 to 15 years children were included in the study. The mean age was calculated to be 10.

General questionnaires regarding oral health practices were included.

- How often do you brush your teeth?
- What do you use to brush your teeth?
- What do you along with the tooth brush?
- Do you know the role of sugar in producing dental decay?
- How often do you visit the dentist?

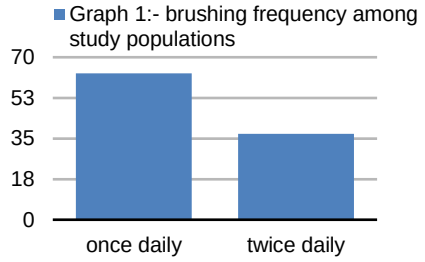
A routine dental examination was done by the single examiner following the verbal interrogation of the questionnaire by the examiner. DMF index and def index was scored in each patient and Green and Vermillion index was used to score the oral hygiene status of the patient. The data collected were subjected to statistical analysis and results were arrived.

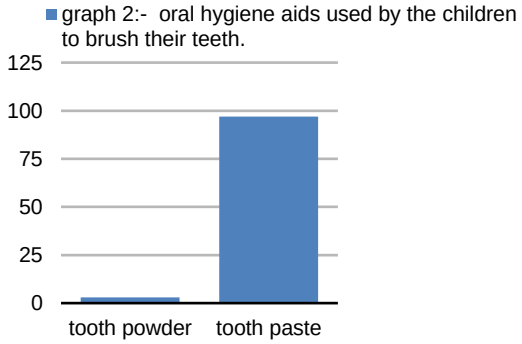
Results

A total of 75 blind school children weresubjected to the study, where in 35 were girls and 40 were boys.

The questionnaire was analyzed according to their responses. 32 children responded

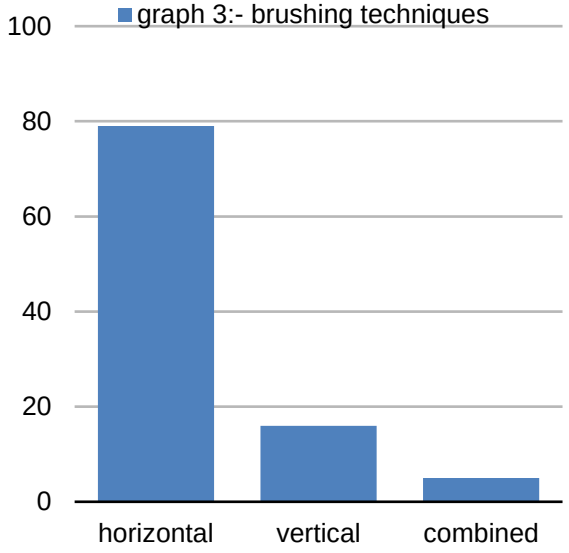
that they brushed twice a day (n = 37), whereas 63 children answered that they brushed their teeth only once in the morning (n = 63). [graph 1]



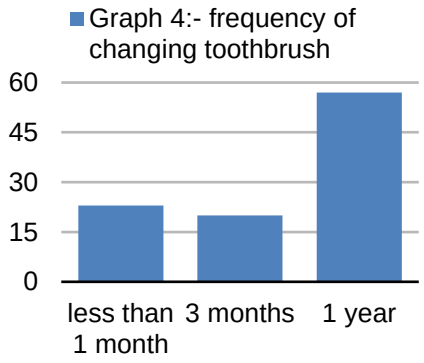


97% of the children responded that they used tooth paste along with the cleaning tool. And 3% used tooth powder. [graph 2]

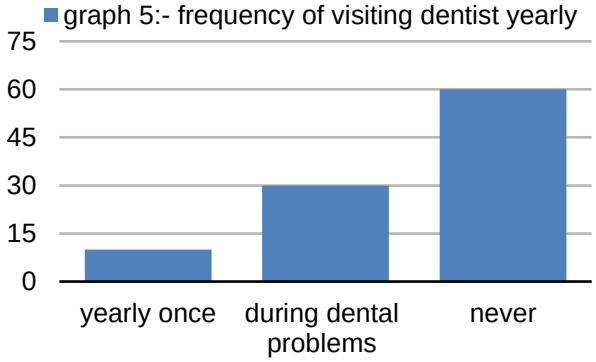
79% of the children responded that they did horizontal tooth brushing method were as 16% children did vertical brushing and 5% children did combined brushing. [graph 3]



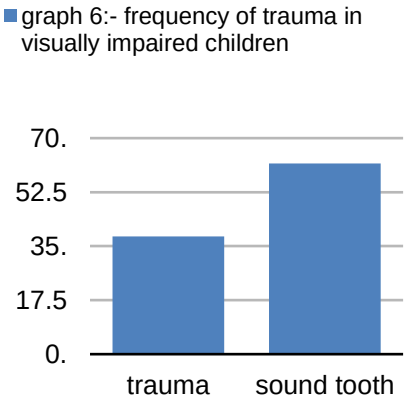
23% of the children responded that they changed tooth brush in 1 month while 20% children changed after 3 months and 57% of children changed in a year. [graph 4]



10% of the children reported dentist once in a year were as 30% reported only during dental problems and 60% reported never to the dentist. [graph 5]



38.2% of the children reported trauma where as 61.8% showed sound tooth. [graph 6]



Test of Significance Used Was Kruskal-Wallis Chi- Square Test for Identifying The Significance Of Dmf Index And Def Index Among Different Ages In The Study Group. We Observed That There Is Statistically Significant Difference in The Dmf Scores Recorded in Children of Different Ages Ranging From 5 To 15 Years (P>0.05), And

The Same Was Observed With Recorded Def Index And Ohi Scores Recorded

Discussion

In this study, based on the data of the mean D component (1.02), shows that at least 1 tooth of each child is carious. Alarmingly, the filled component was found to be 0.5 which indicates lack of availability of oral health services for this special population.

There was higher incidence of traumatic experiences (38.2%) in the study group than in the normal. This result is in accordance with those of the study conducted by AlSarheed et al who reported 13.2% of visually impaired children sustained trauma.[3]

Traumatic experiences were analysed on the basis on the classification given by Ellis and Davey in 1960. The most common dental injury found in all children were enamel and enamel-dentine fractures and this was in agreement with most world-wide studies.

It was observed that there is poor knowledge of oral health hygiene, the percentage of children changing toothbrush in less than 1 month being so high tells us that most of them practice improper brushing technique. Most of them never visited a dentist.

In a study conducted by Ahmad, most of the blind students examined were having poor oral hygiene. Total 80 visually impaired students were examined, of which 44 (55%) were having poor oral hygiene and among them 22.7% were having dental caries.[5]

Shaw has done similar study resulting that there was a greater prevalence of dental caries and poorer oral hygiene in handicapped children attending special schools.[7]

The present study provides information on dental health in a representative sample (n = 75) of 5-15-year-old visually impaired school children from Bhavnagar City.

Based on the present study, the average reported mean value for deft and DMFT for visually impaired children was 0.42 and 1.58 respectively.

In this study of 75 visually impaired students, there was not any significant relationship between dental caries and oral hygiene practice with type of cleaning tools namely: toothbrush, finger, use of dentifrices (paste, powder), frequency of cleaning (morning and evening, morning only) and neither it was significantly related

with knowledge about impact of sugar consumption on dental caries nor with visit to dentist (occasionally, never). Dental caries had highly significant relation with the oral hygiene status of visually impaired students.

Most of these children brushed their teeth only once a day without any parental supervision. The child's reduced concern for his/her appearance could also be a contributory factor. These findings are in agreement with the study con- ducted by Al-Qahtani.[8]

With low- intensity oral hygiene education and radical dental procedures performed by dentists, the children's knowledge and attitudes will always remain negative to the importance of oral health. One should boost focus on preventive and educational programs that might help to prevent dental decay to those with disabilities from having negative dental experiences.[9]

It was also found in a study by Al Qahtani that 37% of participants were affected by dental caries and 71% by gingivitis. Most of the children showed fair to poor oral hygiene. There was an overall increase in the prevalence of dental caries among most of the children as compared with children having untreated carious teeth.

Conclusion

Most of the children showed moderate to severe gingivitis. Children had unrepaired fractured anterior teeth which show the ignorance of the care providers towards these children. DMFT when compared to the normal children pertaining to this age group was higher. Our study shows DMFT of 1.58 for the mean age of 10 years.

The conclusions drawn from this study were that there was very high prevalence of dental caries, poorer oral hygiene, and higher incidence of trauma in visually impaired children.

Pediatric dentist plays a key role not only in diagnosing the oral health conditions of such children but also to treat and to maintain the oral health thereby contributing to the general well-being of these individuals.

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