

Evaluation of Caries Status in Visually Impaired Children in Chennai

Joshini Shanmugam¹, Dr. Dhanraj .M (HOD)², Dr. S. Sangeetha³

Department of Prosthodontics, Saveetha Dental College and Hospitals

Abstract: *Background and reason:* dental background is the most common unmet need of visually impaired children. Good oral health is imperative for proper mastication, appearance and speech. Dental caries is the most common chronic oral disease of childhood that interferes with normal nutrition intake, and regular activities because its pain adversely affects the normal food eating. Till now, only a few studies have been conducted to determine the oral health status and dental caries prevalence of disabled children globally. Therefore, the current study was conducted to find out nature and severity of dental problems among visually impaired children so that measures can be taken accordingly. *Aim:* To evaluate the dmft score and caries status in visually challenged children using a questionnaire. *Objective:* to determine attitude of visually- impaired person toward dentistry. *Materials and methods:* Fifty visually-impaired volunteers were screened in Victoria memorial blind school and the oral hygiene status were checked by group of dentist at the same time. The attitudes of participants toward dental health were collected interview questionnaire. *Result:* The data of this study shows that most of visually-impaired participants have poor to fair oral health status (60%) of them have tooth brushing at least once a day. Family shows to have great impact of these people on their attitude about oral health (62%) followed by advice from school (18%). Finally, Majority of the participants tends to rely upon themselves for their oral hygiene measures. *Conclusion:* The findings of this study revealed that visually impaired individuals have poor oral health status so a little extra care by the parent or caretaker regarding oral hygiene can give further improvement and dental health care can be instituted to the parents including brushing techniques at a very early age.

Keywords: visually impaired; oral health;dmft score

1. Introduction

Disability is accepted as a significant public health problem and is considered a priority among health services [1]. Visual disability considerably affects the productivity and life quality of individuals. There are 285 million people with visual disability; 90.0% of them live in developing countries, and 3.0% are children [2] Impaired vision from birth or early childhood can have profound impact on an infant or child's development with adverse consequences for mental health, restricting participation in social, physical, educational, and, later, employment opportunities [3]. The majority of children with severe visual impairment have additional sensory, motor, or learning impairments with or without chronic disease [4]. Due to visual impairment, difficulties become apparent in school performance and other functions such as ability to safely participate in sports. In addition, visual impairment can affect quality of life and the effects are often life-long [5]. Visual disability appears as a factor affecting school success, health perception, development of self-responsibilities regarding health, and accessing health services in children and adolescents [2], [7] and [8]. For this reason, the problems of visually disabled people have to be considered during childhood, and health screening should be performed [9]. Oral health is an important aspect of overall health, for all children, and, is particularly more important for children with special health needs. The oral health of children who are visually impaired tends to be compromised as they are at a disadvantage and are often unable to adequately apply the techniques necessary to control plaque [6]. Dental caries is the most prevalent disease among children worldwide and dental treatment is the greatest unattended health need of the disabled, particularly more so, in those with special health needs [7]. The presentation of caries is highly variable; however, the risk factors and stages of development are similar. The oral health of disabled

people may be neglected because of a focus on their disabling condition, other major disease(s) or limited access to oral health care. It has been reported, "dental treatment is the greatest unattended health need of the disabled" [8]. Some of the reasons for this may be inadequate recall systems, practical difficulties during treatment sessions, the socio-economic status of the disabled person, pain, underestimation of treatment needs, communication problems and poor patient cooperation. Childhood blindness in developing countries is a result of acquired factors such as measles, ophthalmia neonatorum, traditional eye medicine, and especially corneal scarring related to malnutrition and vitamin A deficiency[10].

2. Materials and Methods

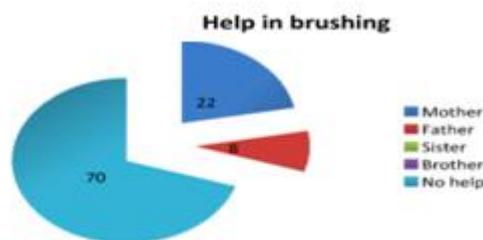
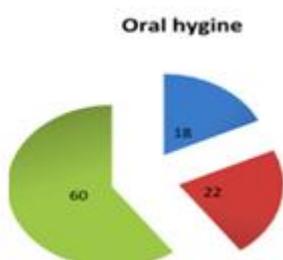
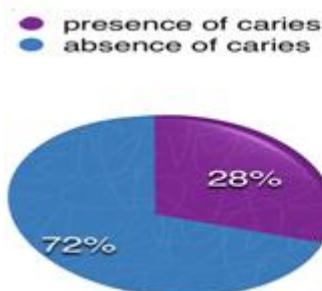
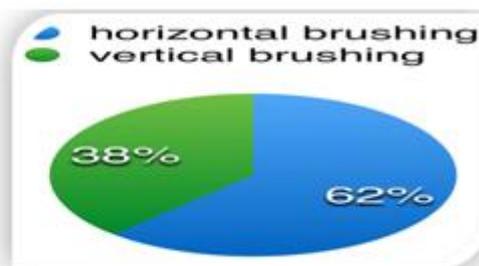
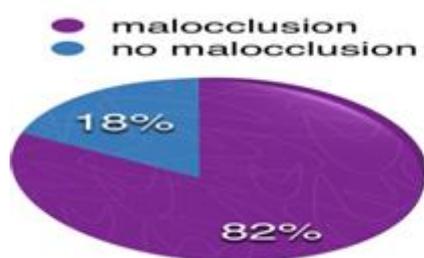
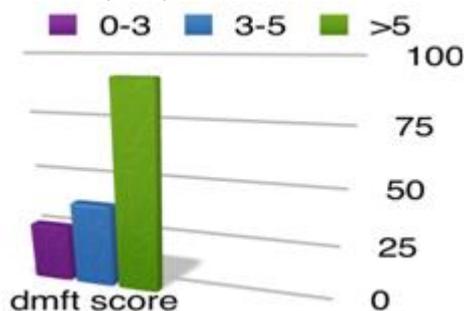
A proforma was designed in which name, age, date of birth, sex, presence of caries, presence of decayed, missed and filled teeth, severity of ECC and dmft score table were recorded. Each child was clinically examined and the dmft score table was filled accordingly. The study population included of 50 children between the age group 6-14 years. They were clearly explained about the purpose of this study and then the research was conducted. Prior consent was obtained from the respective school authorities and from the parents/guardians through the schools to conduct the study.

3. Result

Above half percent (60%) of them of the children were found to have a poor oral hygiene, while 22% of visually-impaired children had fair oral hygiene and only (18%) of them good oral hygiene. Furthermore, when the children were interviewed, majority of participants (70%) doing their teeth brushing by their own and 22% of them need help from their mother. Because most of the individuals above 9 years

old they don't need help for brushing of their teeth . 70% of students use horizontal brushing method while 40% of them use vertical brushing method because 62% of individuals learned brushing through their families which they may be

they didn't teach them to brush their teeth in correct way . Presence of caries was found in 72% of the children and only 18% did not have malocclusion. About 92 children had severe dmft score.



The prevalence of tooth brushing by help from others or not

4. Discussion

The visually impaired people are at a greater risk to develop caries, since they are unable to see the early signs of caries such as discoloration which indicates the disease process. The difficulty in removing bacterial plaque being the main factor for development of caries, continual motivation to the correct oral hygiene procedures is fundamental in order to keep a good oral hygiene in blind patients. Chemical plaque control is advised in visually impaired for effective plaque control. There is utmost need of individual training in oral care and plaque control in order to reduce the prevalence of dental caries among visually impaired children.

In this study most of the individuals found that have poor oral hygiene 60%, but at the same time 22% of students fair oral hygiene but only 18% of them good oral hygiene. So I agree with Solanki et al.(2013)[11] and Ahmed et al. (2009)[12] that showed poor oral hygiene among blind individuals. This may be due to lack of proper oral hygiene and difficulty of these individuals to see and remove plaque or could be attributed to lack of assistance or super vision of care givers during performance of oral hygiene practices.

Although there is scarce evidence on the relationship between the degree of blindness and caries experience, Desai et al., in 2001 reported a significant inverse

association between the level of independence for self-care activities in children with disabilities and number of decayed teeth and DMFT/dmft index [13].

The finding in this present study shows that the caries prevalence was high in the visually impaired children in special schools when compared normal children. Even Shaw et al reported in his study that there was a greater prevalence of dental caries and poorer oral hygiene in handicapped children attending special schools. [14]

This study showed that visual impairment had poor oral hygiene, consistency with previous study. The oral hygiene of the blind population is significantly worse than in an equivalent sighted one[15]. Visual impairments were less knowledgeable about their oral care and did not realize the need to have regular dental visits[16][17].

A limitation in the study was the use of DMFT to measure caries experience. This index usually underestimated caries because it measures only frank cavitations. Having summed up DMFT and dmft was another study limitation. However, the main interest was to report on caries experience and its examined determinants, and in that respect the summation was appropriate. The other major limitations were the cost and transportation. Getting approval from the school authorities was time consuming.

In this study, DMFT score and the deft score is greater in the children with limitation on the communication skills and socialization and daily living skills.

5. Conclusion

The present study shows although this study population had vision impairing, that had bad oral health status. dental health care can be instituted to the parents, including brushing techniques at a very early age. However, an effective dental health education method has not been well instituted for visually impaired children; Therefore, the importance of a preventive approach and the critical role of the dentist in providing proper dental education to parents of individuals with disabilities. In addition, the oral hygiene habits of individuals with disabilities can be improved by close monitoring and periodic dental check-ups. Further studies recruiting more subjects and have control group to compare normal from one side and education mode that can be best perceived by visually impaired children from other side are necessary.

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