ORIGINAL RESEARCH

ASSESSMENT OF ORAL HEALTH STATUS AMONG VISUALLY IMPAIRED CHILDREN

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Abstract:
Aim: To assess the oral health practices, status and caries experience among the visually impaired children.

Materials and methods: A cross-sectional study was conducted in 2 blind schools of Bangalore city. A total of 43 individuals with mean age of 15.37 were included in the study. Ethical clearance was obtained from the ethics committee of FDS, MSRUAS. Permissions were taken from the respective schools. Data was collected by structured interview of each individual with a barrel shaped questionnaire. Questionnaires were related to their frequency of brushing, brushing technique, type of oral hygiene aids, and frequency of changing toothbrush, tongue cleaning, mouth rinsing and visit to the dentist. Clinical examination was done to record DMFT and OHI-S indices.

Results: The oral hygiene practices vary from moderate to low grade. The mean DMF score was 1.58 and complete OHI was 1.21. The D component shows mean score of 1.02 and F component was 0.05.

Conclusion: Our study reveals that their oral health practices are lacking and the DMF scores tells us that 1 tooth of every child is carious. Therefore, proper planning is needed and programmes should be organised to provide oral health education and services for such special group.

INTRODUCTION:
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. People with visual impairment experience varying degrees of sight loss as a result of a wide range of conditions. Some people have total loss of vision, but most will have some useful sight.

Oral health is an important aspect in matter of overall health for all children, especially in case of children with special health care needs. These children are always in disadvantage as they are often unable to adequately apply the techniques of controlling plaque and avoiding dental caries. Dental treatment is one aspect which is highly disregarded in case of children with special health needs. Risk factors and stages of development of dental caries are similar though the presentation may be highly variable.

Several researchers (Anaise, 1979; Greeley, Goldstein, & Forrester, 1976; Mallatt & Palenik, 1990) have noted the need to provide more dental education and instruction for students with visual impairments. They differ from the normal patients with regards to the professional relationship.
between patient and dentist. They pose a challenge to a dentist’s skill and knowledge. Providing comprehensive dental care for the visually impaired is not only rewarding but is also a community service that health care providers should fulfil. These patients may be managed well when the oral health care provider undertakes adequate training and understanding of the needs of individuals with low visions. Therefore, a study on dental health knowledge of students with visual impairments is needed. This study will focus on a selected group of schools for visually impaired children in Bangalore.

MATERIALS AND METHODS

The study was conducted in the month of November in 2014 in two different visually impaired schools namely, Deepa Academy in Subramanyanagar and IDL foundation, Mathikere, Bangalore. Ethical clearance was obtained from the ethics committee of FDS, MSRUAS. Permissions were taken from the respective schools.

The study population comprised of children studying in 8th-12th STD. Sampling technique used was convenient sampling technique. A total of 43 children were examined. Armamentariums used were:

- No.3 Plane Mouth Mirror,
- No.23 Shepherds Probe and
- (WHO) CPI probe

The study tool comprised of a barrel shaped questionnaire which was based on the three domains namely, socio-demographic details, oral hygiene practices and oral health status. Content validation was done by 4 Subject Experts. Structured interview was conducted in their regional language. The questionnaire comprised of following items:

- Frequency of brushing
- Brushing technique
- Type of oral hygiene aid used.
- Frequency of changing the tooth brush
- Tongue cleaning
- Mouth rinsing
- Visit to a dentist

Question related to brushing technique was done by asking them to show the motion in which they brush and the type of brush was recorded by tactile sensation.

Clinical examination was done under natural light by two examiners to check for the DMF/def and OHI-S indices.

RESULTS

A total of 43 blind school children were subjected to the study, wherein 39 children were girls and 4 children were boys. An age group in the range of 13 to 18 years children were included in the study. The mean age was calculated to be 15.37.

The questionnaire was analyzed according to their responses.

**Chart 1** shows brushing frequency. 53% children responded that they brushed twice a day, whereas 47% children answered that they brushed their teeth only once in the morning:

**Chart 2** shows oral hygiene aids used by the children to brush their teeth. 98% of children used toothbrush and toothpaste to brush their teeth and only 2% used toothpowder to clean their teeth.

**Chart 3** shows us the type of toothbrush used by the children, in which around 34.9% of the children used hard type of toothbrush and only 25.6% of the children used soft type, 20.9% used medium type and rest 18.6% never noticed.

Table 1 shows us that only 23% of the children brushed under supervision and 93% of the children clean there
tongue. Other oral hygiene aids like toothpick and mouthwash was used by 9.3% of the children.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brushing under supervision</td>
<td>23%</td>
<td>77%</td>
</tr>
<tr>
<td>Cleaning tongue</td>
<td>93%</td>
<td>7%</td>
</tr>
<tr>
<td>Any other oral hygiene aids</td>
<td>9.3%</td>
<td>90.7%</td>
</tr>
</tbody>
</table>

**Chart 4** shows the technique of brushing. 77% of the children used horizontal motion of brushing, and 16% combined and 7% vertical motion of brushing technique.

**Chart 5** shows the frequency of changing toothbrush, 76.7% of the children change their brush in less than 1 month, 14% of them change once in 3 months, 2.3% change once in a year and rest 7% change when flared.

**DISCUSSION**

According to WHO visual impairment is defined 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.

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 this study, based on the data of the mean D component (1.02), we come to know 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 disadvantaged population.

**CONCLUSION**

To summarise the practices pertaining to oral health was found to be lacking in this group. DMFT when compared to
the normal children pertaining to this age group was higher (Bangalore survey reports 1.44). Our study shows DMFT of 1.58 for the mean age of 15 yrs. If dental health awareness programmes are provided to the parents, caretakers or the individuals at an early age, the incidence of dental caries can be prevented and oral health hygiene can be maintained. The present study shows that there is still room for prevention and little improvement in dental health care services can bring impressive results in reduction of dental caries and gingival diseases.

REFERENCES

1. Deccan Herald Newspaper, Apr 6 2012, online material.