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ASSESSMENT OF ORAL HYGIENE AND TREATMENT NEEDS IN VISUALLY CHALLENGED CHILDREN

V. Selva Sigamani*	CRRI, Karpaga Vinayaga Institute of Dental Sciences, Chengalpattu.*Corresponding Author
Dr V.Kalaiselvi	Reader, Department Of Oral Medicine and Radiology, Karpaga Vinayaga Institute of Dental Sciences, Chengalpattu.
Dr. R.R. Mahendra Raj	Professor and Head Of The Department, Department Of Oral Medicine and Radiology, Karpaga Vinayaga Institute of Dental Sciences, Chengalpattu.
Dr. Thalaimalai Saravanan	Professor, Department Of Oral Medicine and Radiology, Karpaga Vinayaga Institute of Dental Sciences, Chengalpattu.

ABSTRACT **Aim:** To assess the oral health and treatment needs of patients with visual impairment using WHO Oral Health Assessment form for children **Materials and Methods:** A cross-sectional study was conducted on 235 visually impaired patients visit in a school of impaired indivijuals. WHO Oral Health Assessment form was filled after oral examination was done using Type III clinical examination. **Statistical Analysis:** Descriptive analysis was used to describe the frequencies and percentages.Chi-square test was used to determine statistical significance. **Result:** On analyzing the intervention urgency, prompt dental Treatment was needed in 146 (70.53%) participants.**Conclusion:** The visually impaired population due to their impairment experience several barriers in receiving dental care and their dental treatment needs are high and unmet.

KEYWORDS : Dental treatment needs, intervention urgency, oral health assessment, visually impaired.

Introduction-

Oral health is a vital component of overall health which contributes to each individual's wellbeing and quality of life by positively affecting physical and mental healthiness.[1] Good oral health is essential for proper mastication, digestion, appearance and speech.It is often associated with happiness and good general health.According to WHO, blindness is defined as a person having a"visual acuity of less than 3/60 m or corresponding visual field loss in the better eye with the best possible correction" meaning that whilst a blind could see 3 m, a normal person without any visual impairment could see 60 mm.[4] WHO estimates suggest that across the world about 35 million people are blind and among them over 4 million are from India.Visual impairment can affect the oral health through physical,social or information barriers related to the impairment,medical conditions of the attendant or lack of information in a customized format. Other obstacles include lack of transport and services, inadequate resources or financial considerations,lack of social awareness or lack of education and training of caretaker or service provider.Literature suggests that visually impaired individuals have poor oral health status when compared to healthy individuals.Individuals with visual impairment cannot visualize the plaque deposits on the tooth surface, hence leading to poor understanding of the importance of oral hygiene which results in development of dental caries as well as inflammatory disease of the periodontium and loss of tooth structure.Therefore, this study was designed to assess the dental treatment needs and prevalence of oral mucosal lesion in patients with visual impairment using the WHO Oral Health assessment form for children,2009.

Materiais and Methods:

Sample size (n) was calculated to be 235 using formula by keeping power of 99%. Patients with Unique Disability ID for blindness only were included.Since an ophthalmologist testing and assessment is required for categorization as complete or partial vision impairment patients with both complete and partial visual impairment were included.

Patients with loss of vision since birth or acquired during various stages of life were also included.Patients with physical impairment, mental impairment,sensory impairments such as hearing and speech impairment were excluded. The Informed consent form was read aloud to the patients before the beginning of the research. After obtaining the consent from the patient, a thumb impression was obtained. In patients who were able to sign a consent form, a signed consent was obtained.

The patient's interview, clinical examination and data collection was performed by a single observer. WHO Oral Health Assessment form for adults 2013 and Oral Health Questionnaire for adults 2013 were recorded for each patient.The clinical examination for patients who visited the Special Care Dentistry department was done in a dental chair using a mouth mirror, explorer and CPI probe under artificial light. Patients who were screened in the blind institute underwent clinical examination in the institute's medical room with the aid of a mouth mirror, explorer and CPI probe under adequate natural light (Type III).

The WHO Oral Health Questionnaire for children 2009 was filled for each patient by reading out the questions aloud to the patient and the options for each were provided, following which their response was recorded.

Statistical analysis

Data gathered from the assessment were entered in a Microsoft Excel workbook and statistical analysis was done by using Statistical Package of Social Science (SPSS 21). Chisquare test was used to determine statistically significant association for the responses given by visually impaired patients <0.05 was considered statistically significant.

RESULTS:

A total of 235 participants were included in the study out Of which 145 (61.70%)were males and 90(38.29%) were Females . The age of the study participants ranged From 6 to 18 years with the majority of participants belonging To the age group of 13-17 years .The prevalence of decayed, missing and filled teeth in our Study population was 35%, 29.3% and 5.4% respectively [Table 1]. The prevalence of gingival bleeding, periodontal pocket and Attachment loss was 62%, 20% and 18% respectively In our study population [Table 2].Dental trauma was present in 39 (21%) participants of which Enamel fracture was present in 9, enamel and dentin fracture In 10 and pulpal involvement in 23 .

Traumatic ulcers were seen in 4(1.63%) participants and aphthous Ulcers in 1(0.34%) participants. Thermal burn and depapillation of The tongue were present in 2 (0.67%) participants each ,mucocele 1[table 3]. Males had higher prevalence of oral mucosal lesions Comparatively than females and buccal Mucosa was the most commonly affected site in the oral Cavity with 8 (4.57%) lesions . On analyzing the Chi square association between site and oral mucosal lesion Distribution a statistically significant association exists between Site and oral mucosal lesions . On analyzing the intervention urgency, prompt dental Treatment was needed in 146 (70.53%) participants,

Table:1 **Table :2**

Decay	35%	Gingival bleeding	62%
Missing	29.3%	Periodontal pocket	20%
Filling	5.4%	Attachment loss	18%

Table :3

Traumatic ulcer	4
Thermal burn	1
Mucocele	1
Aphthous ulcer	1

CONCLUSION:

Visually impaired population have high rate of dental caries and poor oral hygiene status. Oral mucosal lesions were prevalent in 14% of the study population. The prevalence of oral mucosal lesions in visually impaired population do not appear to differ significantly when compared to normal sighted population suggesting that visually impaired population are equally susceptible in developing oral mucosal lesions. 71% of the participants required prompt dental treatment such as scaling, restorations, extractions and replacement of missing teeth and 28% required immediate dental treatment due to presence of pain or infection of dental origin such as advanced dental caries, periapical abscess and oral potentially malignant conditions. Only 1% did not require any intervention which clearly reflects that dental treatment needs of the visually impaired population are unattended. The visually impaired population due to their impairment experience several barriers in receiving dental care and their dental treatment needs are high and unmet.

Discussion:

Oral health is a major concern for individuals with disability and poor oral health is a factor of comorbidity when associated with systemic disease.[10] The dental treatment has been reported to be the greatest unattended health need of the visually impaired[11] and with this view point, the present study was conducted to assess the oral health and treatment needs of the visually impaired population.

High prevalence of gingival bleeding and periodontal pocket reflects the poor oral hygiene status. It may be attributed to the inability to see and remove plaque, low physical abilities and consequent difficulties in tooth brushing. Motivating individuals with visual impairments to have good oral hygiene is a major challenge for dentists as conventional techniques used to show the dental plaque may not be applicable. The visually impaired have poor oral hygiene and are significantly worse than in an equivalent sighted one. The results were consistent with the previous studies.[12-15].

The evaluation of dental traumatic status revealed the prevalence of anterior teeth fracture in 30% of the study population, mostly due to accidents or falls. This finding is in accordance with the study conducted by Reddy et al.[12] who reported 31.2% of visually impaired children sustained trauma.

Trauma related oral mucosal lesions such as traumatic ulcers,thermal burns and epulis fissuratum were reported in our study. These lesions usually heal spontaneously but sometimes trauma causing agents needs to be removed as it can lead to further development of chronic ulcers. These findings suggest that trauma related oral mucosal lesions requiring interventions are present in visually impaired population which they might not be aware of due to their impairment. Hence the dentist should be aware that visually impaired individuals are more prone to develop trauma related oral mucosal lesions comparatively and hence thorough examination of the oral cavity has to be done.[19]

Regarding the distribution of mucosal lesions in the oral cavity,different sites in the oral cavity show predilection for different types of lesions. The buccal mucosa (48.65%) was the most commonly affected site followed by lips (18.92%) in our study population. This finding is in accordance with other studies which have reported buccal mucosa to be the most commonly affected site in the oral cavity.[20,21].

The high dental treatment needs of the visually impaired may be due to multiple factors such as lack of motivation, low priority given to dental care in the society, lack of facilities for regular dental health check-up and poor socioeconomic status.[22,23]

LIMITATIONS AND FUTURE PERSPECTIVES

Although our study focused on the visually impaired population, it did not differentiate among the partially and completely visually impaired. Therefore, the oral health status and prevalence of oral mucosal lesions could not be correlated among the partially and completely visually impaired individuals. Our data has provided baseline information about epidemiologic aspects of oral health status that can be valuable in organized national programs targeting oral health and hygiene in the visually impaired population. In future,similar studies with larger sample size could be done with prime focus on correlating the findings of oral health status in regard to population with partial and complete visual impairment respectively.

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