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Assessment of visually challenged patients treated in special care clinic in a hospital setting

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ABSTRACT

The oral cavity is a window or mirror to the overall health of the body, and it reveals the early signs and symptoms of systemic diseases. The aim of the study was to assess the dental considerations for visually challenged patients treated in the Special Care Department in a hospital setting. A total of 20 cases were collected from the special care clinic. The data collected were assembled year wise and compiled in excel sheets with age, gender, periodontal status and oral hygiene status. The incomplete cases were removed. Frequency distribution statistical tests were used to calculate the frequency of age, gender, periodontal status and oral hygiene status of visually challenged patients. The comparison of the frequency of age, in visually challenged patients were common in the age group of 30 to 50 years of age. On comparing gender, males 60% were higher than females 40%. On comparing the frequency of periodontal status, it showed more prevalence of Generalized chronic gingivitis 55%, than Localised periodontitis 30% and generalized chronic periodontitis 15%. On comparing dental procedures done, the highest procedure done was restoration 85%. On comparing oral hygiene status, it showed more patients affected with OHI score 3.4 in the age group <35 years. On comparing oral hygiene status with gender, the males have higher prevalence with OHI score 2.5 compared with female 2.0. The conclusion is that males mostly attended to dental problems among visually challenged patients. The age group between 30 to 50 years were affected. The Oral hygiene status of visually challenged patients on calculating OHI scores results fair, and most of them have generalised chronic gingivitis. The common dental procedure done was restoration 85%, extraction 45%, prophylaxis 70% and prosthesis 15%.

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INTRODUCTION

The oral cavity is a window or mirror to the overall health of the body, and it implies the early signs and symptoms of systemic diseases (Venugopal and Maheswari, 2016). Proper oral care and maintenance require some amount of quality time. Oral health of visually challenged patients requires particular attention as it may affect them on their oral care (Subashri and Maheshwari, 2016; Chaitanya *et al.*, 2017). Visual impairment has an impact on oral health through physical, social or infor-

mational barriers or lack of customised information (Misra *et al.*, 2015; Maheswari *et al.*, 2018). Provision of care for visually challenged individuals is their difficulty in transportation, lack of education, lack of social awareness, lack of services, inadequate resources, lack of financial considerations and training of service provider difficulties in rendering proper care and knowledge for patients during dental treatment (Steele *et al.*, 2015; Warnakulasuriya and Muthukrishnan, 2018). The dental management considerations also include the degree of visual impairment, the age onset, presence of other handicapping conditions, degrees of independence, patient attitude and behaviour. The treatments should be conducted with short appointments. A 'tell, fell, do' technique can be used. The brushing technique should be elicited to visually challenged patients (Patil, 2018). Due to a lack of information and preventive services, visually impaired adolescents had to receive more invasive and traumatic procedures. With low-intensity oral hygiene education and radical dental procedures performed by dentists, the patient's knowledge and attitudes will always remain negative to the importance of oral health. Intensified focus on educational and preventive programs might help to keep those with disabilities from having negative dental experiences. Patients with special needs would benefit from not only education about oral health but also improvements in their physical and social environment, which would have a major impact on oral well-being. It is important to achieve some associated factors as well (Rohini and Kumar, 2017; Chaitanya *et al.*, 2018). These children are always in a 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 the 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 have noted the need to provide more dental education and instruction for students with visual impairments. They differ from normal patients with regards to the professional relationship between patient and dentist. They pose a challenge to a dentist's skill and knowledge (Dharman and Muthukrishnan, 2016). 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. Previous studies have been on positive attitudes and also showed a lack of education of dentists towards patients on treating them. The limitations of the previous studies were the lack of specialised skills in treating visually challenged patients. The aim of the study is to assess the dental considerations of visually challenged patients treated in the Special Care Department in a university hospital setting.

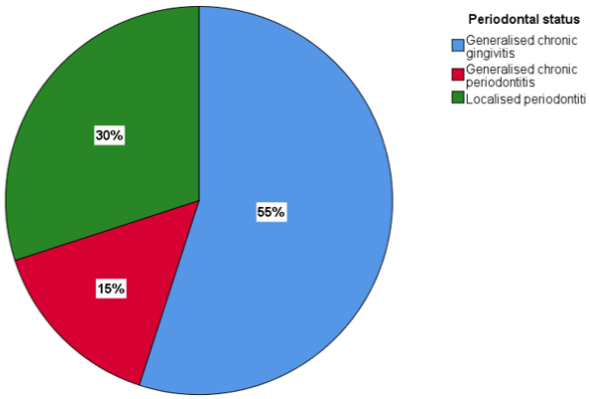
MATERIALS AND METHODS

The number of visually challenged cases were collected through the electronic database of Saveetha Dental college by the database system in year wise order and compiled systematically in excel sheet wherein the patient age, name, gender, periodontal status and oral hygiene status were entered. Approval of ethical clearance was given by the Scientific Review Board SDC/SIHEC/2020/DIASDATA/0619-0320. The study population was 20 visually challenged dental patients. The sampling was done by collecting the data from [01\09\2019] to [01/04/2020]. In this data, all the case sheets were reviewed, cross verification is done, duplicate entries were removed, and photographic evidence was used. There were also measures taken by only clinically diagnosed visually challenged cases. The data was transferred to excel, and duplicate entries were removed. The analysis was done by using frequency in SPSS software version 26. The dependent variable considered as different types of visually challenged and independent variables were age, gender, periodontal and oral hygiene status. The statistical tests used are the Kruskal-Wallis test, Mann-Whitney test and Pearson chi-square test. The analysis was done by the frequency with association with age, gender, site, periodontal status and oral hygiene status. In SPSS data transfer was done and processed.

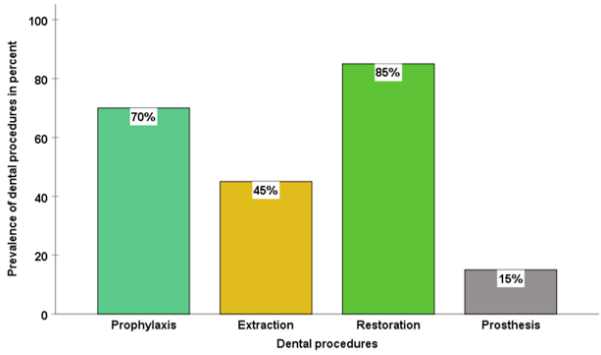
RESULTS AND DISCUSSION

The comparison of the frequency of age of dental patients, in visually challenged patients were common in the age group of 30 to 50 years of age. On comparing Gender, Males 60% was higher than females 40%. On comparing the frequency of periodontal status, it showed more prevalence of Generalized chronic gingivitis 55%, than Localised periodontitis 30% and generalized chronic periodontitis 15% [Graph 1]. On comparing dental procedures done the highest procedure done was restoration 85% and least prevalent was prosthesis [15%] as most of the patients are not having proper caretakers to assist them for multiple dental visits [Graph 2]. On comparing oral hygiene status, it showed more patients affected with OHI score

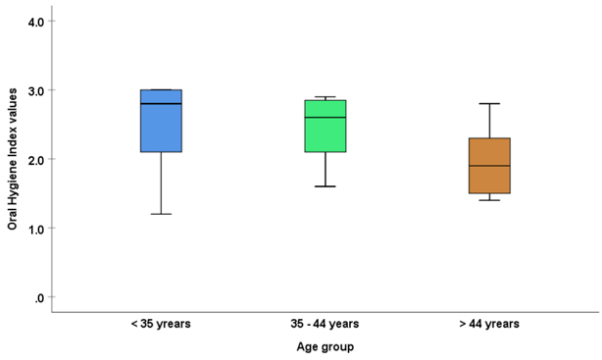
3.4 in the age group <35 years [Graph 3]. On comparing oral hygiene status with gender, males have a high mean OHI score compared to females [Graph 4]. Periodontal status with age group and gender did not reveal statistically significant association, the p-value of age (0.789) and gender(0.678) [Graph 5 & Graph 6].



Graph 1: The prevalence of periodontal status in visually challenged patients

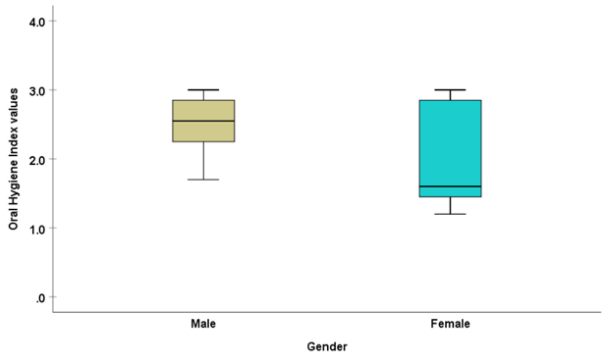


Graph 2: The bar graph represents the prevalence of dental procedures done in visually challenged patients

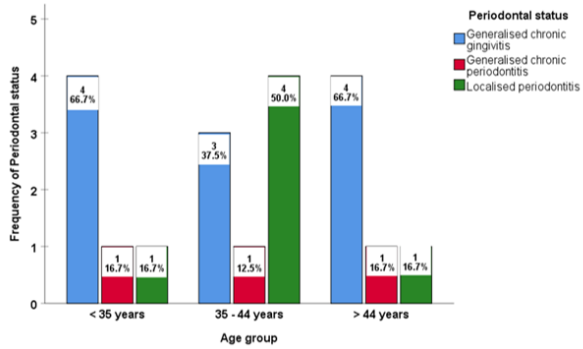


Graph 3: Box plot represents the OHI with age group

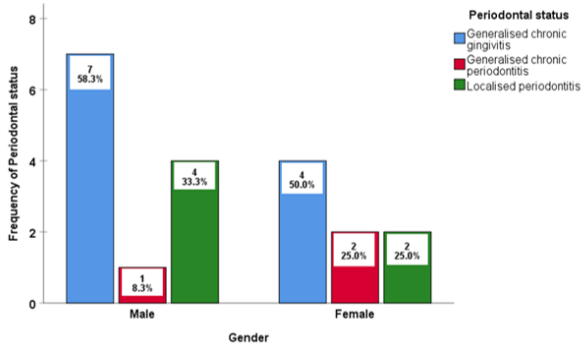
In Graph 1, Blue colour indicates Generalized chronic gingivitis as 55%. Green colour indicates



Graph 4: The box plot represents the OHI with gender



Graph 5: The bar graph represents the association of periodontal status of dental visually challenged patients and age group



Graph 6: The bar graph represents the association of dental visually challenged patients periodontal status and gender

Localized periodontitis 30%. Red colour indicates Generalized chronic periodontitis as 15%. The highest prevalence was Generalized chronic gingivitis followed by localised periodontitis, and least prevalent was generalized chronic periodontitis.

In Graph 2, the X-axis represents the dental procedures. Y-axis represents the prevalence of percentage of dental procedures. Light green colour indicates the prophylaxis procedure as 70%. Yel-

low colour indicates extraction procedure as 45%. Green colour indicates restoration procedure as 85%. Grey colour indicates prosthesis procedure as 15%. The restoration procedure is more followed by prophylaxis, extraction and least prevalent dental procedures among visually challenged dental patients was a prosthesis.

In Graph 3, X-axis denotes age group. Y-axis denotes oral hygiene index. Age group less than 35 years have a median OHI score as 2.5. Age groups below 35 years and 35 to 44 years have higher OHI scores compared to other age groups. Kruskal-Wallis test (3.488) shows *p*-value is 0.175, (p-value >0.05). Hence, it is statistically not significant.

In Graph 4, the X-axis represents gender. The Y-axis represents the value of OHI. Males OHI median score was 2.5, while females median OHI score was 2.0. Males have a high median OHI score compared to females. Mann-Whitney U Test (-1.470) shows *p*-value is 0.141, (p-value >0.05). Hence, it is statistically not significant.

In Graph 5, X-axis represents gender, and Y-axis represents the frequency of periodontal status. Pearson chi-square test (2.576) shows *p*-value is 0.789, (p-value >0.05). Though statistically not significant, it was observed that Generalized chronic gingivitis was most prevalent in less than 35 years and greater than 44 years while localised periodontitis was most prevalent in 35-44 years group.

In Graph 6, the X-axis represents gender, and Y-axis represents the frequency of periodontal status. Pearson chi-square test (1.061) shows *p*-value as 0.678, (p-value >0.05). Hence, it is statistically not significant, and the highest prevalence of periodontal status in males and females are generalized chronic gingivitis.

In this study, the higher prevalence was the age group of 30 to 50 years. In agreement with this study, their results showed a high prevalence in the age group of 30 to 50 years (Busse and Kern-Stähler, 2016; Muthukrishnan *et al.*, 2016). Contrary to this study, Debnath *et al.* (2017) proposed higher prevalence is greater than 18 yrs age groups. Overall consensus showed higher in age groups such as greater than 13 yrs. In this study, the prevalence of Visually challenged patients showed higher in males 60% than females 40%. In agreement with this study showed a higher prevalence in Males, 62.5% (Debnath *et al.*, 2017; Subha and Arvind, 2019).

Contrary to this study showed a higher prevalence in females, 56.4% (Mohd-Dom *et al.*, 2010). Overall consensus agreed to be prevalent among males than females depending upon population. Oral hygiene status of Visually challenged patients is based on the Oral Hygiene Index 50%. In agreement with this study showed a higher prevalence of OHI score 3 (Palaparthi *et al.*, 2012; Muthukrishnan and Kumar, 2017). The overall consensus with respect to Oral hygiene status had a common OHI score 3. In this study, the periodontal status of visually challenged patients was considered to be Generalized Chronic Gingivitis 55%, Localized Periodontitis 30%, Generalized Chronic Periodontitis 15%. The overall consensus with respect to periodontal status were generalized chronic gingivitis 50% (Choudhury, 2015). The Limitations of this study were only limited to the population. It was covered with a specific time with limited samples, and it was a single institutional study.

CONCLUSION

Within limits, we conclude that males were the most prevalent dental patients among visually challenged patients. The age group in which maximum dental procedures were done was 30 to 50 years. The Oral hygiene status of visually challenged patients on calculating mean OHI scores of the study population was 2.3 [Fair] and most prevalent periodontal status was generalised chronic gingivitis as 55 % with most prevalent dental procedures was restorations as 85%. Future studies with larger sample size assessing the oral manifestations and other associated general manifestations due to oral foci of infection can be studied to have more insight on oral health impact on the general health of visually challenged patients.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

REFERENCES

Busse, B., Kern-Stähler, A. 2016. 3 Bleary Eyes: Middle English Constructions of Visual Disabilities. *The Five Senses in Medieval and Early Modern England*, pages 67–95.

Chaitanya, N. C., *et al.* 2017. Role of Vitamin E and Vitamin A in Oral Mucositis Induced by Cancer Chemo/Radiotherapy- A Meta-analysis. *Journal of clinical and diagnostic research*, 11(5):6–09.

Chaitanya, N. C., Muthukrishnan, A., Krishnaprasad, C. M. S., Sanjuprasanna, G., Pillay, P., Mounika, B. 2018. An insight and update on the analgesic prop-

erties of vitamin C. *Journal of Pharmacy And Bioallied Sciences*, 10(3):119.

Choudhury, P. 2015. Vanishing Roots: First Case Report of Idiopathic Multiple Cervico-Apical External Root Resorption. *Journal Of Clinical And Diagnostic Research*, 9(3):17–19.

Debnath, A., *et al.* 2017. New Vision for Improving the Oral Health Education of Visually Impaired Children- A Non Randomized Control Trial. *Journal of clinical and diagnostic research*, 11(7):29–32.

Dharman, S., Muthukrishnan, A. 2016. Oral mucous membrane pemphigoid – Two case reports with varied clinical presentation. *Journal of Indian Society of Periodontology*, 20(6):630.

Maheswari, T. U., Venugopal, A., Sureshbabu, N. M., Ramani, P. 2018. Salivary micro RNA as a potential biomarker in oral potentially malignant disorders: A systematic review. *Tzu Chi Medical Journal*, 30(2):55.

Misra, S. R., Shankar, Y. U., Rastogi, V., Maragathavalli, G. 2015. Metastatic hepatocellular carcinoma in the maxilla and mandible, an extremely rare presentation. *Contemporary Clinical Dentistry*, 6(5):117.

Mohd-Dom, T. N., Omar, R., Malik, N. A. A., Saiman, K., Rahmat, N. 2010. Self-Reported Oral Hygiene Practices and Periodontal Status of Visually Impaired Adults. *Global Journal of Health Science*, 2(2).

Muthukrishnan, A., Kumar, L. B. 2017. Actinic cheilosis: early intervention prevents malignant transformation. *BMJ Case Reports*, pages bcr2016218654–bcr2016218654.

Muthukrishnan, A., Kumar, L. B., Ramalingam, G. 2016. Medication-related osteonecrosis of the jaw: a dentist's nightmare. *BMJ Case Reports*, page bcr2016214626.

Palaparthi, R., Neerudu, M., Palakuru, S., Singam, H., Durvasula, S., Ameer, N. 2012. Oral hygiene and periodontal status of teenagers with special needs in the district of Nalgonda, India. *Journal of Indian Society of Periodontology*, 16(3):421.

Patil, S. R. 2018. Three-Rooted Mandibular First Molars in a Saudi Arabian Population: A CBCT Study. *Pesquisa Brasileira em Odontopediatria e Clínica Integrada*, 18(1):4133.

Rohini, S., Kumar, V. J. 2017. Incidence of dental caries and pericoronitis associated with impacted mandibular third molar-A radiographic study. *Research Journal of Pharmacy and Technology*, 10(4):1081.

Steele, J. C., *et al.* 2015. World Workshop on Oral Medicine VI: an international validation study of clinical competencies for advanced training in oral medicine. *Oral surgery, oral medicine, oral pathology and oral radiology*, 120(2):143–51.

Subashri, A., Maheshwari, T. N. U. 2016. Knowledge and attitude of oral hygiene practice among dental students. *Research Journal of Pharmacy and Technology*, 9(11):1840.

Subha, M., Arvind, M. 2019. Role of Magnetic Resonance Imaging in Evaluation of Trigeminal Neuralgia with its Anatomical Correlation. *Biomedical and Pharmacology Journal*, 12(1):289–296.

Venugopal, A., Maheswari, T. U. 2016. Expression of matrix metalloproteinase-9 in oral potentially malignant disorders: A systematic review. *Journal of Oral and Maxillofacial Pathology*, 20(3):474.

Warnakulasuriya, S., Muthukrishnan, A. 2018. Oral health consequences of smokeless tobacco use. *Indian Journal of Medical Research*, 148(1):35.