



Assesment of oral Hygiene Status And Periodontal Status in A Group of Blind Students.

KEYWORDS

Blind students, differently abled, health, oral hygiene, periodontal status

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ABSTRACT

BACKGROUND: The patient specially abled by defective vision presents a special challenge to the dental health care team. Although less than 1% of the total population meet the legal criteria for blindness, individuals affected with partial loss of vision raise the number of those suffering from a slight disability to a much larger proportion of the population. Yet the special oral problems of this group have not been thoroughly documented or studied and an estimate of their specific needs is required. Hence the purpose of this study was to assess oral hygiene status, periodontal status and oral hygiene practices among the inmates of two schools for the blind.

MATERIALS AND METHOD: 35 Males and 95 Females from two schools for the blind participated in the study. Periodontal status was recorded according to Russel's periodontal index (PI). Oral hygiene was assessed according to Greene and Vermillion's simplified Oral Hygiene Index (OHI -S). The oral hygiene practice was assessed with the help of a questionnaire. Statistical analysis will be done using Chi square test, Contingency coefficient test and One-way Anova.

RESULTS: In this study age related changes in oral hygiene scores, gingival bleeding scores and periodontal scores was observed. However, scores between successive years of age was found not to be statistically significant.

CONCLUSION: The visually impaired teenagers in Mysore city have poor oral hygiene and severe gingivitis as they unsatisfactorily practice oral hygiene and have limited access to the oral health care providers.

INTRODUCTION: Health is "A state of complete physical, mental, and social well-being, rather than solely an absence of disease or infirmity."^[1] Oral health and quality oral health care contributes to holistic health. It should be a right not a privilege.^[2]

"Differently abled" was first proposed (in the 1980s) as an alternative to disabled, handicapped, etc, on the grounds that it gave a more positive message and so avoided discrimination towards people with disabilities. The term has gained little currency, however, and has been criticized as both over-euphemistic and condescending. The accepted term in general use is still disabled.^[3]

Handicap is the loss or limitation of opportunities to take part in the normal life of the community on an equal level with others due to physical and social barriers^[4]. The barriers to oral health that people with disabilities experience will vary by age and the level of parental or social support received. These change throughout life, with particular problems associated with transitional periods^[4]. Oral health may have a low priority in the context of these pressures and other disabilities, which are more life-threatening.^[5] Hence, it requires a change in attitude and practice for parents/care takers to include oral health as part of routine care.^[5] Poor oral health may add an additional burden, whereas good oral health has holistic benefits in that it can improve general health, dignity and self-esteem, social integration and quality of life.^[6]

The World Health Organization (2011) recently estimated that 285 million people are visually impaired worldwide: 39 million are blind and 246 million have low vision. Visual impairment may have an impact on oral health because of physical, social, or informational barriers that are related to the impairment. The oral health status of children with visual impairments should be investigated so their health care needs can be determined and preventive dental procedures can be implemented.

AIM OF THE STUDY:

The aim of the study was to evaluate the oral hygiene status and periodontal status in a group of blind patients.

MATERIALS AND METHODS:

A total of 85 teenagers in the age group of 13-19 years, 33 boys from Government Institute of Disabled located in the vicinity of Farooqia Dental College and Hospital, Mysore and 52 girls from Ranga Rao Institute of Disabled located in the outskirts of the Mysore City were selected, thus including all the institutionalized teenagers within the limits of Mysore City. The inclusion criteria were teenagers who had visual impairment that ranged from low vision to total blindness. Subjects who were uncooperative, systemically ill or had other disabilities and also teenagers from whom the proxy consent from the care takers could not be obtained were excluded from the study.

After obtaining written consent from the caretaker or

guardian, the oral hygiene status and periodontal status were assessed. Examinations were carried out in the schools. Demographic information was obtained from the school files. The Clinical examinations were performed using sterilized gloves, cotton, a standard plain mirror; a sharp, thin, single-ended sickle explorer and periodontal probe. The patients were seated in an ordinary chair and artificial illumination with a penlight was provided.

Oral hygiene status was assessed using the Simplified Oral Hygiene Index (OHI-S) developed by GREENE & VERMILLION. Gingival status was recorded according to modified sulcus bleeding index developed by MOMBELLI, VAN OOSTEN AND N.P.LAND. Periodontal status was recorded according to RUSSELL'S Periodontal Index (PI). Periodontal status was assessed using only visual and tactile methods of detection. Radiographs of the teeth were not taken. All grossly destructed teeth and retained roots or teeth were excluded in examination. The oral hygiene habits were assessed using a questionnaire in terms of type of oral hygiene aids used and frequency of brushing.

STATISTICAL ANALYSIS:

The study group was divided into 3 age groups: 13-15yrs, 15-17yrs and 17-19yrs. Statistical analysis was done using Descriptive statistics, Chi square test, Contingency coefficient test and One-way Anova using SPSS for windows.

RESULTS:

ORAL HYGIENE INDEX:

Results were expressed in terms of percentage. Comparison of the scores between the age groups showed that, in the age group of 17-19 years, 15.8% showed good scores, whereas 47.4% showed poor scores. In the age group of 13-15 years 59.5% showed fair scores. However, comparison of the results within the age group showed that 13-15 years and 15-17 years had fair scores while 17-19 years had poor scores. However, the results were statistically insignificant with $P = 0.085$. (Table I & Figure I)

RUSSELL'S PERIODONTAL INDEX:

Similar results were observed with Russell's Periodontal Index. Results were expressed in terms of percentage. Comparison of the scores between the age groups showed that, in the age group of 17-19 years, 21.1% showed good scores, whereas 36.8% showed poor scores. In the age group of 15-17 years 75.0% showed fair scores. However, comparison of the results within the age group showed that all the three groups 13-15 years, 15-17 years and 17-19 years had poor scores. However, the results were statistically insignificant with $P = 0.229$. (Table II & Figure II)

MODIFIED SULCUS BLEEDING INDEX:

Results were expressed in terms of mean value. The age group of 13-15 years showed a mean value of 0.5905, 15-17 years showed 0.5333 and 17-19 years showed 0.5737. However, the results were statistically insignificant with $P = 0.845$. (Table III & Figure III)

ORAL HYGIENE HABITS: Statistics showed that 100% of the study subjects used toothpaste, 97.6% used toothbrush and 65% brushed twice daily. (Table IV, V, VI)

DISCUSSION:

The disabled and handicapped form a substantial section of the community. The effects of disabling conditions are many and varied, but one of the most common effects is inability to maintain oral health.^[7]

In disabled individuals, the process of developing gingival/periodontal diseases does not differ from non-disabled individuals. Plaque control and gingival and periodontal health are frequently poor compared with children of same age without handicaps.^[8] The main factor related to gingival/periodontal problems in disabled individuals is the inadequacy of the plaque removal from the teeth.

People with visual impairment are at an increased risk of developing periodontal diseases because of their inability to visually assess the effectiveness of plaque control, and to detect and recognize early signs of periodontal disease. As a result, they may be unable to take the necessary action to prevent or treat a particular condition.^[9] Furthermore, visually impaired population usually face difficulties during tooth brushing including placing toothpaste on the brush and practicing traumatic brushing strokes that may damage their periodontium.^[9] In addition, the lack of dental knowledge and infrequent dental visits have been suggested to affect the oral health of visually impaired population.^[10]

Previous studies reported that individuals with visual impairments tended to have a larger amount of dental plaque and were at a higher risk for dental diseases than were sighted individuals.^[11,12]

Anaise compared the periodontal status and oral hygiene of a group of Israeli teenagers who were blind and those who were sighted. His results suggested that the oral health of the sighted group was better than that of the group who were blind. Moreover, the students with low vision had lower rates of periodontal disease than did those who were totally blind.^[13]

A study by Sinaidi A concluded that visually impaired Saudi adults have poor plaque control and widespread gingivitis as they unsatisfactorily practice oral hygiene measures and have limited access to the oral health care providers.^[14]

A study by Ameer N et al. compared the oral hygiene status and periodontal status of teenagers with special needs found that visually impaired and deaf and dumb had better oral hygiene compared to other disability groups, that is intellectually disabled group and physically handicapped group.^[15]

Shih YH and Chang CHS found that the oral health knowledge among visually impaired students were poor compared to their sighted peers^[16]. These findings are in agreement with other studies that showed limited knowledge on prevention and preventive dental measures among Saudi adults^[14]. Contrary to this, 65% of patients in this study brushed twice daily while 35% brushed only once. This observation was mainly because the patients were institutionalized. However none of the patients practiced mouthrinsing or regular flossing or had regular dental visits.

Grossi et al, and Kinane^[17,18] found that periodontal diseases were more prevalent in older age groups and they considered aging as one of the identified risk factors for periodontitis. In this study a age related changes in oral hygiene scores, gingival bleeding scores and periodontal scores was observed. However, scores between successive years of age was found not to be statistically significant.

Frail, disabled persons have limited access to dental care,

which is compounded by a shortage of dental professionals who are willing to treat these populations.^[19] Thus there is a need to include regular dental checkups as a part of the routine health checkups in the Academic Curriculum of the schools. School teachers need proper training and practical support from dentists experienced in dental health to train these disabled persons. Increasing dental school training and continuing education programmes are needed to meet this end.^[20] Chemical plaque control has been recommended as an alternative and adjunctive to mechanical plaque control in these special patient groups.

CONCLUSION:

Within the limitations of the present study, it can be concluded that the visually impaired teenagers in Mysore city have poor oral hygiene and severe gingivitis as they unsatisfactorily practice oral hygiene and have limited access to the oral health care providers. Teenagers belonging to the disability groups inculcate habits under the influence of surroundings, capability and interest of parents and caretakers. The impairment leads to disability, and deprivation of these groups resulted in the subsequent poor oral hygiene and periodontal diseases. Therefore a holistic approach is needed from periodontists and other specialists to achieve satisfactory periodontal health in these subjects.

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CONFLICT OF INTERESTS:

The authors declare that there is no conflict of interests regarding the publication of this paper.

Table I: Oral hygiene index

			AGE GROUP			Total
			13-15	15-17	17-19	
OHI	Good	Count	1	0	3	4
		% of AGE Group	2.4%	.0%	15.8%	4.7%
	Fair	Count	25	14	7	46
		% of AGE Group	59.5%	58.3%	36.8%	54.1%
	Poor	Count	16	10	9	35
		% of AGE Group	38.1%	41.7%	47.4%	41.2%
Total	Count	42	24	19	85	
% of AGE Group		100.0%	100.0%	100.0%	100.0%	

Table II: Russel's periodontal index

			AGE GROUP			Total
			13-15	15-17	17-19	

RUSSEL	Normal	Count	7	2	4	13
		% of AGE Group	16.7%	8.3%	21.1%	15.3%
	Gingivitis	Count	21	18	8	47
		% of AGE Group	50.0%	75.0%	42.1%	55.3%
	SG/IP	Count	14	4	7	25
		% of AGE Group	33.3%	16.7%	36.8%	29.4%
Total	Count	42	42	24	19	
% of AGE Group		100.0%	100.0%	100.0%	100.0%	

SG – Severe gingivitis, IP – Initial periodontitis

Table III: Modified sulcus bleeding index

AGE Group	N	Mean	Std. Deviation	Minimum	Maximum
13-15	42	.5905	.46894	.00	2.80
15-17	24	.5333	.28079	.20	1.40
17-19	19	.5737	.27048	.00	1.10
Total	85	.5706	.38105	.00	2.80

Table IV: Oral hygiene habits

	Frequency	Valid Percent
Valid Toothpaste	85	100.0
der Toothpowder	0	0
Mouth rinse	0	0

Table V: Oral hygiene habits

	Frequency	Valid Percent
Valid Toothbrush	83	97.6
Finger	2	2.4
Neem Stick	0	0
Total	85	100.0

Table VI: Oral hygiene habits

	Frequency	Valid Percent
Valid Zero	0	0
Once	30	35.3
Twice	55	64.7
Total	85	100.0

Figure I: Oral hygiene index

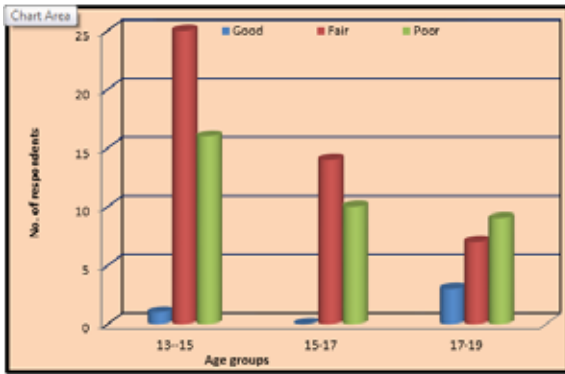


Figure II: Russel's periodontal index

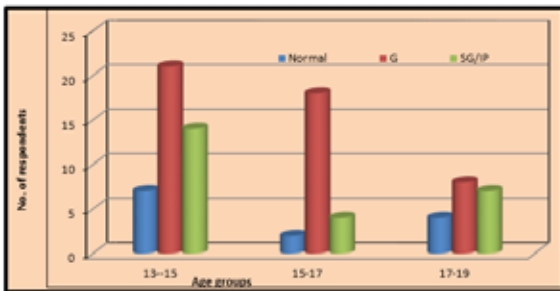
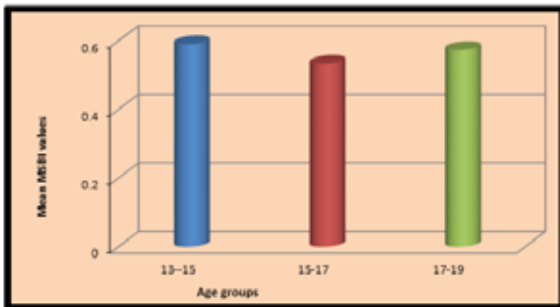


Figure III: Modified bleeding index



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