

*Full Length Research Paper*

# Oral health knowledge, practice, oral hygiene status and dental caries prevalence among visually impaired students in residential institute of Aligarh

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The study was conducted to detect the preventive and treatment modalities among visually impaired students living in a residential school of Aligarh. A total of 80 visually impaired students were involved in the study in which 55 subjects were males and 25 females. They belonged to the age group of 10 – 35 years. Maximum number of males and females belonged to 16 – 25 years of age. Most of the subjects were cleaning mouth only in the morning with the use of brush and tooth paste. Eighty six percent were having belief that use of sugar leads to dental caries. On oral examination out of total subjects 55.2% were having poor oral hygiene and only 16% were having good oral hygiene. About 28% suffered from dental caries that were having poor oral hygiene and about 57% who were having fair oral hygiene. No one suffered from dental caries that were having good oral hygiene. In disabled individuals the process of developing oral disease does not differ from non-disabled individuals. There is no difference in prevention of the disease and treatment modalities between these groups. Since blind students cannot visualize the dental plaque, motivation to keep the mouth clean is less as compared to normal individuals. Hence they need a special way to educate and motivate to keep the oral hygiene better in order to prevent dental caries.

**Key words:** Visually impaired, disabled, dental caries, oral hygiene, toothpaste.

## INTRODUCTION

Handicapped 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 or social barriers (Waldman, 1995). In disabled individuals the process of developing oral disease does not differ from non-disabled individuals. There are no differences in prevention of the disease and the treatment modalities between these groups. Students in residential schools settings rarely have the opportunity for formal dental care at the school site. Dental caries or periodontal diseases are not a priority of the disabled student's families (Tesini, 1981; Cutron, 1971). Improvements in oral health status can be achieved through on-site oral health care. More awareness of dental health care needs of these subjects is essential especially those who are visually impaired. These individuals often have worse oral health status

than the general population. They tend to have a higher incidence of dental caries and difficulty in accessing dental care (Chikte et al., 1991). The main reason for higher prevalence of dental caries in disabled individuals is the inadequate plaque removal. Visually impaired cannot visualize the plaque on the teeth surfaces so even understanding the importance of oral hygiene is difficult for them, which results in the progression of dental caries as well as inflammatory disease of the periodontium (Mann et al., 1984). Chemical plaque control is advised in visually impaired for effective plaque control as in patients suffering from cerebral palsy who cannot brush properly due to poor motor control (Nunn, 1987; Cutress et al., 1977). So, 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 students. Health care providers must have unique communication skill to deal with these special needs of visually impaired individuals. The aim of this study was to investigate the oral health knowledge, practice, oral hygiene status and the prevalence of dental

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**Table 1.** Age distribution of male and female included in the study.

Age	Male	Female	Total
10 – 15 years	10	8	18
16 – 20 years	21	15	36
21 – 25 years	23	2	25
31 – above	1	0	1
Total	55	25	80

**Table 2.** Questionnaires.

Questionnaires		Students		Dental caries		Statistical significant level
		N	%	N	%	
1. How often do you brush?	Morning and Evening	19	24.0	6	31.5	Not significant
	Morning only	61	76.0	17	28.0	
	Brush	78	98.0	21	27.0	
2. Tools of cleaning teeth.	Finger	1	1.0	1	100	Not significant
	Datun	1	1.0	1	100	
3. Use of dentifrices in teeth cleaning	Paste	70	87.5	20	28.5	Not Significant
	Powder	10	12.5	3	30.0	
4. Role of Sugar in dental caries.	Yes	69	86.0	22	32.0	Not Significant
	No	11	14.0	1	9.0	
5. Visiting Dentist.	Occasionally	6	7.5	1	16.6	Not Significant
	Never	74	92.5	22	29.7	
	Good	13	16.0	0	0.0	
6. Oral Hygiene status.	Fair	23	29.0	13	56.5	Chi Sq = 11.45 P > 0.001
	Poor	44	55.0	10	22.7	

caries among blind students in a residential school of Aligarh Muslim University, Aligarh. So in future we could increase the access for special preventive and clinical services for them on priority basis.

## METHOD

Eighty visually impaired students living in a residential place at Ahmadi school of Blind of Aligarh Muslim University have been studied to determine the oral health status, oral health practice and dental caries among them. General questionnaires, regarding oral health practice followed by a routine dental check up and questionnaires to evaluate knowledge about role of sugar in dental caries and frequency of visiting dentist were completed. They were examined by single examiner to control the examiner variability. The presence of cavitations only in the teeth was designated as dental caries. The examination was done on a simple chair and in day light with the help of mirror and probe. The data was analyzed by SPSS version 11 (Figure 4 and 5).

## RESULTS AND DISCUSSIONS

A total of 80 visually impaired students were enrolled in the study. Out of total, there were 55 males and 25

females, the subjects ranged from 10 - 35 years of age and overall mean age was 26.5 years. Maximum number of males and females belonged to 16 - 25 years of age (Table 1). All the students were asked about oral health practice, role of sugar in dental caries and frequency of visit to the dentist through the prepared questionnaires. Oral hygiene status was also examined and put in three categories viz; good, fair and poor (Table 2 and Figure 6). Greene and Vermillion method was used to analyze oral hygiene status.

Out of total 61 (76%) were cleaning mouth only in the morning 78 (98%) were using brush as tools of cleaning the mouth, 70 (87.5%) used paste as dentifrices and 69 (86%) were agreed that sugar cause dental caries. On oral health examination it was found that 13 (16%) were having good oral hygiene, 23 (28.8%) fair and rest 44 (55.2%) poor oral hygiene (Table 2).

Dental caries is the most common oral disease, which is prevalent all over the world. Dental plaque deposited over the tooth surface is the main causative factor. In order to prevent the disease, our main concern is to reduce plaque deposition on tooth surface by different means. Oral health education has been shown to have a positive impact in lowering plaque scores (Zehaati and

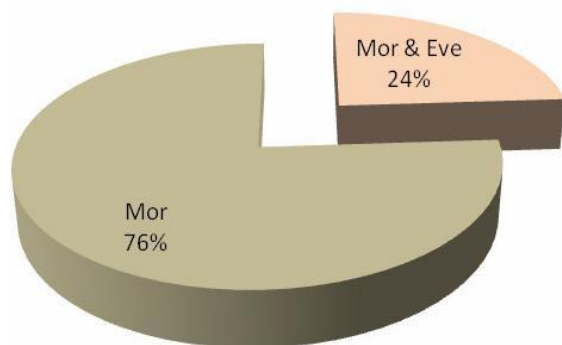


Figure 1. Time of cleaning teeth.

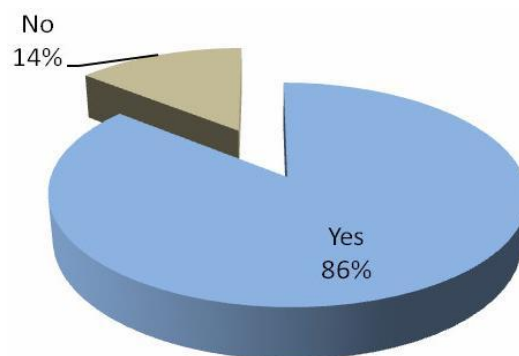


Figure 4. Role of Sugar in dental caries.

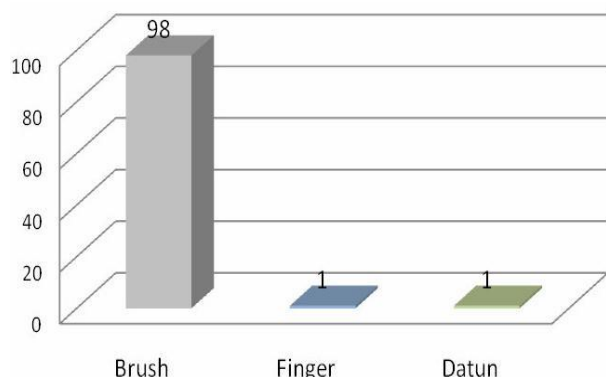


Figure 2. Tools of cleaning teeth.

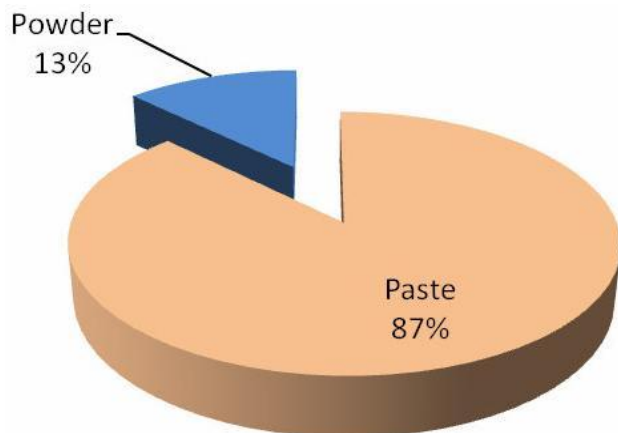


Figure 3. Use of Dentifrices.

Motlagh, 2006). In this study most of the blind students examined were having poor oral hygiene. Total 80 visually impaired students were examined out of which 44 (55%) were having poor oral hygiene and among them 22.7% were having dental caries. Twenty nine percent of blind students were having fair oral hygiene and among them 57% developed dental caries which was highest. This indicates that blindness alone is not a significant risk factor for higher prevalence of dental caries and hence by

taking care of blinds in educational set-up associated with appropriate training can result in acceptable health status, similar to normal population. The students with good oral hygiene were free from dental caries. In a study it was observed that highest rate of dental caries belonged to mentally retarded students, while the lowest rate was found amongst blind (Bhavsar and Sco, 1995). Further this was proved by Greenleg who did not find any significant relationship between dental decay and blindness among 120 blind students (Goreeleg et al., 1976). Therefore blindness alone is not responsible for dental decay as long as suitable training and education are available.

Now days a wide variety of projects have been under taken to improve public awareness and knowledge of oral health in general and periodontal health in particular (Charles, 1973). The etiology of dental caries and periodontal diseases is well known to be influenced by person's way of life (Blinkdon, 1981). Moreover, a considerable amount of information is already known to educated person about the prevention of dental caries. If these information were put into practice, it could affect there prevalence or slow down the rate at which they progress (Murry, 1983; Azriana et al., 2007).

In this study of 80 visually impaired students, there was not any significant relationship between dental caries and oral hygiene practice with type of cleaning tools viz; Toothbrush, Finger and Dataun), use of dentifrices (paste, powder), frequency of cleaning (morning and evening, morning only) and neither it was significantly related with knowledge about impact of sugar consumption on dental caries nor with visit to dentist (occasionally, never) (Figure 1-3). But the prevalence of dental caries had highly significant relation with the oral hygiene status of visually impaired students. It was also observed statistically that oral hygiene status was not significantly related with time of cleaning; tools used for cleaning mouth and dentifrices used (Table 3, 4 and 5) . Since visually impaired students cannot visualize the plaque deposit on tooth surface, therefore these visually impaired students need regular dental visit, education and motivation regarding oral health hygiene measures

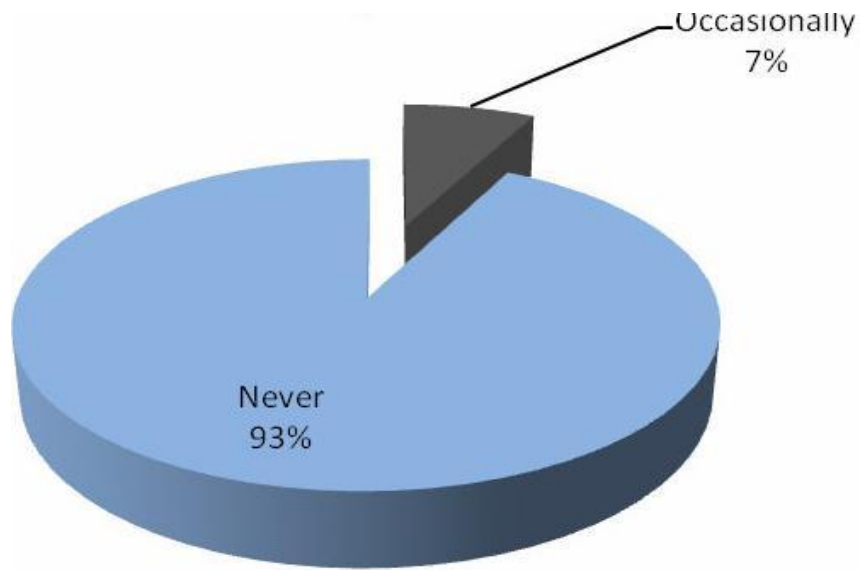


Figure 5. Visiting Dentist.

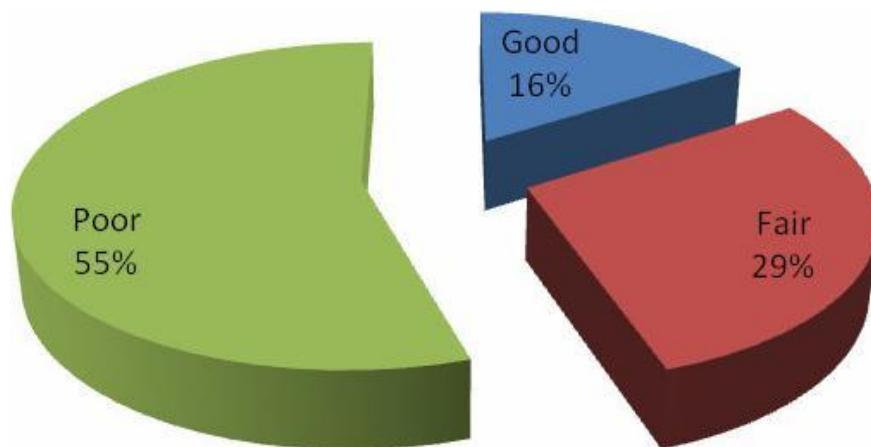


Figure 6. Oral Hygiene status.

Table 3. Status of oral hygiene in relation with tools of cleaning mouth.

Oral hygiene status	Brush	Finger	Datun	Statistical significant level
Good	13	0	0	Not significant
Fair	22	0	1	
Poor	43	1	0	

Table 4. Status of oral hygiene in relation with the use of dentifrices.

Oral hygiene status	Paste	Powder	Statistical significant level
Good	12	1	Not significant
Fair	22	1	
Poor	36	8	

**Table 5.** Status of oral hygiene in relation of time of cleaning of mouth.

Oral hygiene status	Morning and Evening	Morning only	Statistical Significant level
Good	4	9	Not significant
Fair	7	16	
Poor	8	36	

and its impact on oral as well as overall health and for this there is utmost need of conduction of oral health program in this type of residential set-up of visually impaired.

### Conclusion

If dental care and health awareness is instituted early and supported by parents, complicated dental treatment needs can be kept to a minimum. The amount of plaque removed from the teeth of disabled institutionalized students can be increased through an in service educational program. Further more detail studies are necessary to assess more effective modalities of controlling dental caries in this population.

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