

Effectiveness of Oral Health Training Session on Knowledge, Attitude, Practices and Barriers Towards Oral Health Amongst Teachers and Caregivers of Disabled Children in Bareilly, Uttar Pradesh.

Abstract:

Introduction: Special Care Dentistry aims at management and prevention of Oro-dental diseases in disabled children, who spend most of their time in rehabilitation centres or special schools. Therefore, training their teachers and caretakers on oral health promotion will help to inculcate healthy oral habits in children during their formative years of life.

Methodology: A closed-ended questionnaire evaluated the knowledge, attitude, practices, and barriers toward oral health before and after the oral health training session. The training was done using a validated training manual on oral health promotion entitled as Oral health for families with special health care needs, along with conducting workshops, and delivering dental talks. Data was obtained and statistical analysis was done.

Statistical Analysis: Evaluation of the data obtained was done twice to assess the difference between the scores before and after oral health education.

Results: Maximum participants showed significant improvement in knowledge, attitude and practices towards oral health.

Conclusion: Continuous reinforcement of knowledge, conducting workshops and oral health check-up programs is required to eradicate the barriers and bring changes in Knowledge attitude and practices towards oral health among these teachers and caregivers.

Key-words: National Education Policies for children with special needs, Knowledge, Oral health, teachers and caregivers.

Introduction:

Children with special health care needs are those who have physical, developmental, behavioural, or emotional conditions that requires more health related services of a type than their peers, commonly identified as children having more than average health service need that is expected to last more than 12 months.[1] These children are more prone to develop dental or oral diseases, due to their mental or physical limitations, and are also unable to express their pain and difficulty in maintaining their oral cavity healthy and hygienic on their own hence, they tend to develop chronic condition of any disease.

Special Care Dentistry aims at management and prevention of Oro-dental diseases in disabled children. Challenges

encountered while managing these children in dental operatory are- lack of attention, communication problems, restless behavior, hyper salivation and drooling, uncontrolled tongue movements, jerking or uncontrolled hyperactive behaviour.[2] To overcome or avoid these challenges, it is always better to take a preventive rather than therapeutic approach, by which oro-dental diseases can be prevented or

¹SVAISHNAVI SINGH, ¹SHIVANGI SHARMA,
²SATHYAJITH NAIK, ³PALLAVI VASHISTH⁴

^{1,3}At Institute of Dental Sciences, Bareilly.

^{2,4}Department of Pediatric and Preventive Dentistry, Institute of Dental Sciences, Bareilly

Address for Correspondence: Dr. Vaishnavi Singh
Affiliation: Post Graduate Student At Institute of Dental Sciences, Bareilly.

Orcid: 0000-0002-5569-0534

Address: I.D.S., Pilibhit Bypass Road, Bareilly.

Email: Vaishnavisng19@gmail.com

Received : 20 May, 2022, **Published :** 31 August, 2023

Access this article online	
Website: www.ujds.in	Quick Response Code 
DOI: https://doi.org/10.21276/ujds.2023.9.3.3	

How to cite this article: Singh, V., Sharma, S., Naik, S., & Vashisth, P. (2023). Effectiveness of Oral Health Training Session on Knowledge, Attitude, Practices and Barriers Towards Oral Health Amongst Teachers and Caregivers of Disabled Children in Bareilly, Uttar Pradesh. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 9 (special is), 08-13

terminated before entering into chronic conditions. The physical, mental, intellectual, or cognitive impairments, make it difficult to understand and learn general instructions from parents, hence they are sent either to rehabilitation centres or special schools to learn basic and day to day activities.[2,3] This validates the fact that teachers and caretakers of special children, play pivotal roles in their lives as these children spend most of their time under their guidance and care.[4] Considering the most important asset in the implementation of oral health preventive programs, it was necessary for dental fraternity to have a better understanding of the caregivers and their perception regarding dental health of such children, and understanding the barriers they face towards not seeking oral health. Therefore, this study was executed to assess the effectiveness of oral health training session on knowledge, attitude, practices and barriers towards oral health among school teachers and caregivers of disabled children in Bareilly.

To the best of our knowledge, the present article is first of its kind, which incorporates training module for the same teachers and caregivers and assesses the outcomes of the same in different phases and renders a change in the subjects.

Methodology:

PHASE-I

A formal approval was acquired from the special schools and rehabilitation centers for disabled children of Bareilly before the commencement of the study.

A closed ended questionnaire consisting of 35 questions based on demographic information, knowledge, attitude, practices, and barriers towards oral health was formulated and distributed among 52 special school teachers and caretakers of rehabilitation centers of Bareilly. Pre-assessment data was obtained (Charu Khurana, **Maganur PC et al**)^{5,6}

PHASE-II

Investigators organized oral health training session under which, Dental talks on oral health and hygiene, food and nutrition for special need children, importance of deciduous teeth, management and prevention of caries, etc., were delivered. Special Lecture was given to teachers and caregivers about how to recognize and report Child abuse in such Handicapped children.

Teachers and instructors were asked to interpret the information given by investigators, to make children understand in their sign languages, about importance of proper brushing of teeth.

Workshops were conducted for teachers and caretakers about the modification of toothbrushes for children with poor muscular control such as in case of cerebral palsy and attention deficit hyperactivity disorder, with the help of clay, self-cure acrylic and sponge balls.

Apart from the verbal instructions, reinforcement of good knowledge in children as well as their caretakers is very crucial. Hence, Fun learning games like Happy or Sad Tooth, were used to reinforce children about pros and cons of taking healthy or unhealthy diet. Fluoride Varnish and gel application was also done in these institutes.

The training of teachers and caregivers was done using a validated training manual entitled as 'Oral health for families with special health care needs.' Another manual on 'oral health promotion for school teachers' developed by the Ministry of Health and Family Welfare, Government of India, was also used in the study for providing general instructions related to management of proper oral health, hygiene and basic information about prevention of traumatic injuries to teeth in such children.

PHASE-III

After a month from Phase-II, same questionnaire was asked to be filled once again by the same study population and post intervention data was collected.

Statistical Analysis:

Comparison was made, between the pre-intervention and post- intervention scores. IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: was used to analyse the data.

Results:

1. Demographic Characteristics:

The demographic characteristics of the study population are represented in Figure 1. The mean age of the study population was 34.69 ± 9.79 years. The population was majorly females (37) i.e., 71% and majority of them were special educator (42) i.e., 80.7 %. Most of the study population belonged to Jeewandhara Rehabilitation Centre (JDDRI).

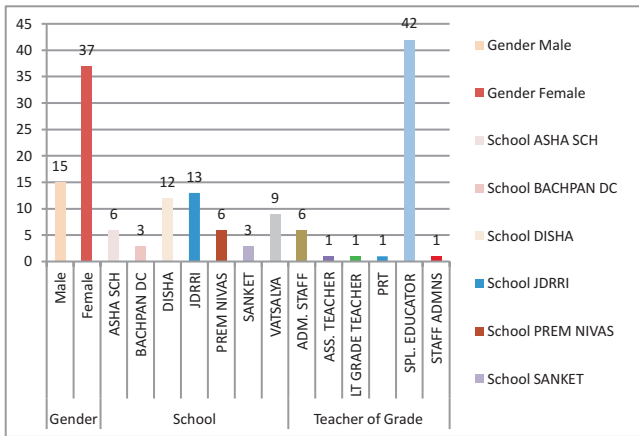


Figure 1: Demographic characteristics of the study population
 Table 1 The chi square statistics for comparison for the groups as compared between pre and post intervention showed a statistically significant improvement in knowledge-based responses.

Knowledge related question	Pre frequency	percent	Post frequency	percent	chi sq/ P value	
How many times do you brush?	a day once	0	0	0	-	
	after every meal	1	1.9	1		1.9
	twice	51	98.1	51		98.1
	don't brush	0	0	0		0
How often do you visit dentist?	once a month	16	30.8	16	30.8	
	once in 6 months	12	23.1	12	23.1	
	once in 3 months	24	46.2	24	46.2	
	once in 10 years	0	0	0	0	
Has oral health got any role in fluoride in general health?	more than one	0	0	0	7.692/ 0.006*	
	yes	36	69.2	48		92.3
	no	16	30.8	4		7.7
	don't know	0	0	0		0
What does irregular tooth brushing cause?	decay	0	0	0	-	
	gum disease	19	36.5	19		36.5
	bad breath	0	0	0		0
	stains on teeth	0	0	0		0
	nothing	12	23.1	12		23.1
	all	21	40.4	21		40.4
Why do we get dental problems?	eating sweets and ice creams	0	0	0	4.231/ 0.0267*	
	not brushing properly	22	42.3	0		0
	not rinsing the mouth	0	0	0		0
	not regularly visiting a dentist	0	0	0		0
how can you prevent dental problems	all	30	57.7	52	100	
	avoiding sweets and sticky foods	4	7.7	0	0	
	brushing properly	2	3.8	6	11.5	
	mouth rinsing after meals	27	51.9	46	88.5	
	regularly visiting a dentist	0	0	0	0	
do you know dentist can polish and clean your teeth	yes	19	36.5	0	0	
	no	40	76.9	50	96.2	
does your tooth paste contain fluoride	yes	12	23.1	2	3.8	
	no	33	63.5	47	90.4	
do you know what floss is	yes	19	36.5	5	9.6	
	no	33	63.5	49	94.2	
have you visited a dentist before	yes	19	36.5	3	5.8	
	no	33	63.5	49	94.2	
Did you come across any dental emergency in the form of tooth/teeth loss in your school premises?	yes	30	57.7	30	57.7	
	no	22	42.3	22	42.3	
If complete loss of permanent tooth occurs: do you know it can be replaced back?	yes	27	51.9	27	51.9	
	no	25	48.1	25	48.1	
If a tooth is broken do you know that the broken piece is useful?	yes	32	61.5	32	61.5	
	no	20	38.5	20	38.5	
if yes, do you know that it should be stored in either in coconut water, milk, egg white and carried to the dentist immediately	yes	19	36.5	19	36.5	
	no	33	63.5	33	63.5	
How have you students responded to oral health education?	yes	14	26.9	14	26.9	
	no	38	73.1	38	73.1	

*statistically significant

Table 1: Distribution of the knowledge-based responses of the study population

Table 2 describes the distribution of the attitude-based responses of the study population. A statistically significant difference was noted for some attitude domain related questions.

Attitude related question	Pre frequency	percent	Post frequency	percent	chi sq/ p value
regular cleaning of mouth can prevent	bleeding from gums	1	1.9	0	0
	loosening of gums	17	32.7	3	5.8
	loss of teeth	15	28.8	2	3.8
	bad smell	0	0	47	90.4
	all	19	36.5	0	0
do you think it is required to visit the dentist periodically to maintain oral health	yes	20	38.5	51	98.1
	no	32	61.5	1	1.9
do you know any other oral hygiene aid	yes	35	67.3	48	92.3
	no	13	25.0	2	3.8
are the topics related to teeth and mouth in the present school curriculum	only few	4	7.7	2	3.8
	yes	25	48.1	25	48.1
have you been trained to give education on topics related to teeth and mouth to school children	no	27	51.9	27	51.9
	yes	29	55.8	29	55.8
have you made an attempt to give education related to teeth and mouth to your students	no	23	44.2	23	44.2
	yes	24	46.2	24	46.2
do you think oral health education has benefitted your school children?	no	28	53.8	28	53.8
	yes	28	53.8	28	53.8
What are the measures you take to promote oral health in your class?	good oral health	5	9.6	5	9.6
	tooth brushing	25	48.1	25	48.1
	floss and mouthwash	0	0	0	0
	visit to dentist	0	0	0	0
	others	22	42.3	22	42.3
Does your training include first aid course?	yes	26	50.0	26	50.0
	no	5	9.6	5	9.6
if yes, did the first aid course cover the management of dental trauma? if no, have you attended any of the first aid training courses on your own?	yes	24	46.2	24	46.2
	no	28	53.8	28	53.8

*statistically significant

Table 2: Distribution of the attitude-based responses of the study population

Table 3 describes the distribution of the practice-based responses of the study population. A statistically significant increase was noted in the Post evaluation of responses as compared to pre-intervention responses

Practice related question	Pre Frequency	Percent	Post Frequency	Percent	Chi sq/ P value
how do you clean your teeth	tooth brush and tooth paste	34	65.4	50	96.2
	tooth brush and tooth powder	18	34.6	2	3.8
	finger and tooth powder	0	0	0	0
	neem sticks	0	0	0	0
How often do you change your brush?	once in 3 months	26	50.0	49	94.2
	once in 6 months	26	50.0	3	5.8
	yearly once	0	0	0	0
what amount of paste you apply on your brush	when bristles get frayed up	0	0	0	0
	full length of bristles	12	23.1	4	7.7
	half-length of bristles	40	76.9	10	19.2
do you press the paste in between the bristles	pea sized amount	0	0	30	57.7
	yes	38	73.1	49	94.2
do you rinse your after meals	no	14	26.9	3	5.8
	yes	50	96.2	50	96.2
how do you clean your tongue	no	2	3.8	2	3.8
	sometimes	0	0	0	0
If you know any other oral hygiene aid, then which one do you use?	tongue cleaner	25	48.1	47	90.4
	all	12	23.1	0	0
If yes what kind of oral health education have you given to your school children?	tooth brush	15	28.8	5	9.6
	mouth wash	16	30.8	11	21.2
	dental floss	36	69.2	17	32.7
	tooth pick	0	0	24	46.2
What methods are you employing to give oral health education to school children?	all	0	0	0	0
	about the type of teeth, function, structure and eruption	12	23.1	12	23.1
	about brushing, good dietary habits, injurious oral habits	11	21.2	11	21.2
How have you students responded to oral health education?	education about tooth decay, gum diseases, irregular teeth, their causes, treatment and prevention	21	40.4	21	40.4
	all of the above	8	15.4	8	15.4
How have you students responded to oral health education?	oral health talks	29	55.8	29	55.8
	model charts and posters	1	1.9	1	1.9
How have you students responded to oral health education?	all of the above	22	42.3	22	42.3
	favourably	17	32.7	17	32.7
How have you students responded to oral health education?	unfavourably	35	67.3	35	67.3

Table 3: Distribution of the practice-based responses of the study population

Figure 2 demonstrate a significant increase in mean scores of knowledge, attitude and practice-based post evaluation responses. For knowledge-based responses graph of mean scores of correct answers raised from 25.33 to 32.35, and from 17.48 to 18.29 for attitude-based responses. For practice-based responses, values increased from 15.4 to 16.31.

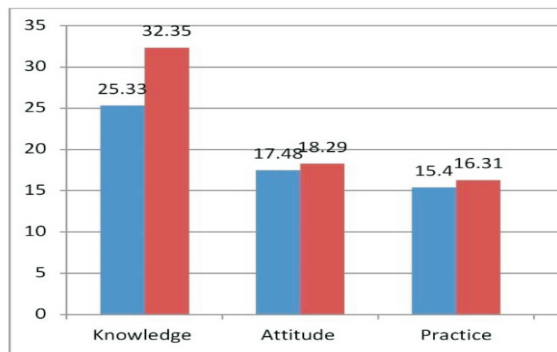


Figure:2 Comparison of mean scores for most appropriate responses in pre and post evaluation of knowledge, attitude, and practices.

Table 4 describes the barrier domain scores. The chi square values were calculated for all the variables. In pre-evaluation of data majority of participants believed inadequacy of knowledge related to oral health and long treatment hours as the chief barriers towards not seeking oral health.

Barrier Domain Score		Pre-scores		Chi sq/ P value
		Frequency	Percent	
Do you find difficulty in finding the dentist in your community?	yes	17	32.7	-
	no	35	67.3	
Do you think that the oral health knowledge included in the curriculum is inadequate in comparison with general health?	no	8	15.4	-
	yes	44	84.6	
Do you think sending the child during school hours for dental treatment is difficult?	yes	28	53.8	-
	no	24	46.2	
Do you think the distance to travel to dentist takes more time?	yes	22	42.3	-
	no	30	57.7	
what is your reason for not visiting dentist	high cost	12	23.1	-
	long treatment time	33	63.5	
	Multi visits	4	7.7	
	long waiting hours	3	5.8	

*statistically significant

Table 4: Distribution of the Barrier Domain responses of the study population.

Discussion:

American Academy of Paediatric Dentistry (AAPD) defines special health care needs (SHCN) as “any physical, developmental, mental, sensory, behavioural, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and use of

specialized services or programs.[7] Understanding a child's physical, psychological, social, cognitive, and emotional abilities is crucial to society's understanding of child development.[1,2]

In a global survey conducted by UNICEF, in December 2021, 240 million children were reported as disabled. According to the 2011 Census (2016 Update), 2.21% (2.68 Crore) of all Indians are people with disabilities.[2] According to 2011 census in India, 2.68 crore children are disabled. From a National Sample Survey (2018) report, on disabled children, only 67 % had care givers, 29.8 % did not have care givers and 3.2% children were living alone. This provides an idea how crucial it is for members of health care system, to intervene and monitor oral health related problems of this neglected section of the society.[8] Ministry of Human Resources and Development, Government of India have also signified the role of teachers in their student's lives.[9]

Working in the same direction, MHRD, G.O.I., have issued a guiding manual on 'Oral health care for teachers' and in this study also, we provided health care manual i.e., 'Oral health for families with special health care needs' to all the participants. In a study conducted by Charu Khurana et al, under the aegis of MHRD, G.O.I, to assess the effectiveness of oral health training programs on 52 Kendriya Vidyalaya teachers, significant increase in knowledge, attitude, and practices scores towards oral health were reported, which are similar to our findings[4]. Dharma Shree et al[2] in year 2005 reported good knowledge but unsatisfactory attitude and practices towards oral health in school teachers. Similar findings were reported by T V Durga Mahendra et al, in year 2019.[10] Although there are so many studies available in the literature but they are only confined to a single-phase assessment of Knowledge, attitude and Practices about oral health.

But as the present study was conducted in three phases, it provides an extended vision of the problems, their solutions and improvement within their foundation. In the present study, significant increase in mean scores of knowledge, attitude and practice-based post evaluation responses of special school teachers and caretakers were reported. For knowledge-based responses graph of mean scores of correct answers raised from 25.33 to 32.35, and from 17.48 to 18.29 for attitude-based responses. For practice-based responses, values increased from 15.4 to 16.31. A statistically significant improvement in teachers' knowledge regarding correct duration for cleaning teeth was observed. This was in line with Nyandindi et al.,[11] Sekhar et al.,[12] and Petersen et al.¹³ who also suggested a significant increase in frequency and correct duration for tooth brushing post training. This

validates the positive outcome of conducting Oral health training programs, as done in Phase-II.

In pre-evaluation of data majority of participants believed inadequacy of knowledge related to oral health and long treatment hours as the chief barriers towards not seeking oral health. Similar to our study, Najat A. Alyafei explored barriers towards oral health among caregivers of disabled children and found lack of awareness and knowledge as the main barrier towards not seeking the dental health.[14] Barriers towards oral health among society can be eliminated by continuous reinforcement of oral health and hygiene related knowledge and by motivating them to adopt a pro-oral health attitude. Pediatric dentists may approach and provide them with best preventive therapies making their dental treatment least troublesome or painful.

Recommendations:

As found in this study, Inadequate knowledge about oral health and special care of disabled children, was the main barrier towards oral health, hence a change in curriculum is required from Government. Oral health is the mirror to general health, so great emphasis should be made on science textbooks to include oral health and hygiene related chapters. National Education Policy, India (NEP, 2020) has introduced short term specialization courses to teach children with disabilities in existing framework. Future holds extensive use of newer technology in teaching and removing language barriers, increasing access for 'Divyang' (handicapped children), educational planning, context in curriculum, pedagogy, and policy. Focus of Doctors thus now requires to be shifted from active to interactive learning for such special need Children and their Caregivers.

Limitations:

As the present study was carried out in a closed setting with all the participants in proximity to each other, the contamination in answering questions during knowledge assessment could not be fully controlled; however, measures through strict invigilation were undertaken. Although all possible efforts were made to standardize the presentations and participants included in the study, another possible limitation is environmental factors such as barriers of communication and grasping power of participants, which could have modifying effects on the effectiveness of educational intervention.

Conclusion:

Significant improvements were reported in knowledge, attitude, practices and barriers-based responses related to oral health among teachers and care givers of special need children by conducting a single oral health training session.

Management of a problem cannot be always accessible or feasible to a major section of society, as the second most common barrier that participants found was long treatment hours. Therefore, a preventive approach should be taken rather than therapeutic approach to manage such children. A huge change in oral health related knowledge and practices in the society can be brought up by periodic re-evaluation and reinforcement. To tackle the barriers, a preventive approach should be taken and we need to work in a continuous & comprehensive way for the upliftment of oral health status of special need children.

References:

1. Li Huang, Gary L. Freed, Kim Dalziel. Children with special health care needs: how special are their health care needs? *Academic Pediatrics* (2020) doi: <https://doi.org/10.1016/j.acap.2020.01.007>
2. Dharmashree S, Chandu GN, Md. Shafiulla. Knowledge, attitude, Practices (KAP) towards oral health among professionals attending to the mentally disabled children in Davangere, Karnatka, India. *J Indian Assoc Public Health Dent*. 2005;5(6):5-8.
3. Ningrum V, Bakar A, Shieh TM, Shih YH. The Oral Health Inequities between Special Needs Children and Normal Children in Asia: A Systematic Review and Meta-Analysis. *Healthcare (Basel)*. 2021;9(4):410. doi: [10.3390/healthcare9040410](https://doi.org/10.3390/healthcare9040410). PMID: 33918280; PMCID: PMC8065439.
4. Shanbhag PP, Ram SM, Gupta B. Knowledge and Oral Health Attitudes among Care Providers of Children with Intellectual Disabilities: A Cross-sectional Study. *J Contemp Dent* 2014;4(2):92-98.
5. Charu Khurana. Effectiveness of oral health training programs among school teachers of India *J Edu HealthProm*(2021)636(19).
6. Maganur PC, Satish V, Marwah N, Vishwas TD, Dayanand MC. Knowledge, Attitude, and Practices of school teachers toward Oral Health in Davangere, India. *Int J Clin Pediatr Dent*. 2017;10(1):89-95.
7. Shekhar vidya. Knowledge, Attitude, and Practices of school teachers towards oral health in Pondicherry. *J Clin Diagn Res*. (2014)8(8).
8. Kenneth W. Norwood. oral health care for children with developmental disabilities. *AAP*. (2013)131(3):614-619.
9. Hsiu-yueh L. Caregiver's oral health knowledge, attitude and behaviour toward their children with disabilities. *J Dent Sci*. (2017)12(4):388-95.
10. Mahendra TVD, Mulakala V. Oral Health Knowledge and Attitude among caregivers of special children in Tribal population. *Int. j. Health sci. res*. 2019;4(4):1518-26.

11. Jagan P, Fareed N, Battur H, Khanagar S, Bhat M. Conceptual knowledge of oral health among school teachers in South India, India. *Eur J Dent* 2018; 12:43-8.
12. Sekhar V, Sivsankar P, Easwaran MA, Subitha L, Bharath N, Rajeswary K et al. Knowledge, attitude and practice of school teachers towards oral health in Pondicherry. *J Clin Diagn Res* 2014;8:ZC12-5.
13. Petersen PE, Peng B, Tai B, Fan M. Effect of a school-based oral health education programme in Wuhan city, Peoples Republic of China. *Int Dent J* 2004; 54:33-41.
14. Alyafei NA, Jaleel BNF, Mathew T. Exploring the barriers towards oral health care Perceived by parents/caregivers of children with disabilities in Qatar. *Dentistry*. 2020; 10:559.