

**Knowledge attitude and practice of oral hygiene methods among mothers caregivers of children with special care needs in dakshina kannada during covid**

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**Abstract**

**Background:** Oral health of children with special needs is dependent on their parent’s knowledge and attitude towards dental care. Thus this study aimed to assess the knowledge, attitude and practice of mothers of children with special needs.

**Methodology:** A cross-sectional questionnaire study was conducted for a period of 2 months among 50 caregivers of 3 to 17 year old children with special who visited a special care school in and around the community of Dakshana Kannada. The data were analyzed using SPSS

version 20 (Inc., Chicago, IL, USA). Descriptive statistics was carried out to calculate responses for each question. One way ANOVA was computed to compare means of knowledge, attitude and Practice with Age, Education and Income. Normality of the data was tested using Shaprowilk test.

**Results:** A poor knowledge was seen among the mothers. Education, income and age were found have a statistical significance ( $p=0.00^*$ ) on mean knowledge, attitude and practice scores.

**Conclusion:** More studies exploring the same issue need to be conducted on larger samples covering different populations so as to evaluate, which strategies will be effective and efficient in bringing about a behavior change in other/parents.

**Keywords:** Special Needs Children, Knowledge, Oral Health, Special Care

### **Introduction**

American Academy of Pediatric Dentistry (AAPD) defines special health care needs (SHCN) as “any physical, developmental, mental, sensory, behavioral, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and/or use of specialized services or programs. Oral health practices of younger children are influenced by their mother/caregiver’s knowledge and belief. A good knowledge and positive attitude toward oral health care play a vital role in preventive cycle. According to Romi jain and Oswal et al decision-making process of the parents creates a huge impact on their children’s oral and general health Oral health is a reflection of general health.[1] In general, oral health practices of younger children are influenced by their mother/caregiver’s knowledge and belief. The dental health-care services adopted by the parents for their children are of utmost importance, as it influences not only the current oral health status of the child but also acts as a backbone for the attitudes and practices. These practices developed by the child at this age are carried forward to his or her adulthood.

Improvement in children’s oral health depends on parent’s awareness and knowledge. Studies have proven that practicing good oral health at early childhood is essential so that dental norms are formed and then maintained into future.[2] Children with disabilities present increased oral pathologies, which could be

because of poor knowledge among the parents/caretakers, which, in turn, results in deterioration of the children’s oral health. These children have some developmental anomalies such as congenitally missing teeth, malocclusion, and delayed eruption; some oral habits such as lip biting, tongue thrusting, and mouth breathing; and also some self-injurious habits such as stripping of gingiva, and frenal thrusting; all of these factors add up for overall decrease in oral health in disabled children.[3] Since these children depend on their caregivers for maintenance of their oral health, poor knowledge among the caregivers acts as a prominent barrier in proper maintenance of oral health for these children.[4] Even though individuals with disability are exposed to similar standards of healthcare as the general population, these children and their families undergo various barriers to the utilization of their basic health facilities and to their inclusion in society. In addition, this stigma deepens the impact of economic poverty and further perpetuates discriminatory attitudes toward these groups. Although there are many studies to analyze the barriers of utilization of dental services among disabled children,[5-7] there are hardly any reports which depict the awareness and knowledge about oral health practices among caregivers of children with special health-care needs. It is evident from the previous studies that mothers play a vital role in their child’s life. Their health beliefs and attitude toward oral healthcare act as strong predictor for the children’s oral health care.[1,2,8] Purohit BM, Acharya S et al conducted a study on oral health status and treatment needs of children attending special schools in South India: a comparative study stating that dental caries prevalence in Karnataka is of 89.1% in special care children and main reason behind is the poor knowledge and practice of oral hygiene practice of mothers and children’s care givers. And during this pandemic most of the parents fear

to bring their child to dental clinics especially special child for regular oral screening and treatment. Hence this study is formulated to analyze the knowledge, attitude as well as practice about oral health among caregivers/mothers of children with special needs in Dakshina kannada.

### **Objectives**

- To assess the knowledge among mothers /caregivers about oral health status of their children with special needs using pre-validated questionnaire.
- To assess the attitude and practices among mothers/caregivers regarding oral hygiene of their children with special needs using pre-validated questionnaire.

### **Materials and Methods**

A cross-sectional questionnaire study was conducted for a period of 2 months among 50 caregivers of 3–17-year-old children with special needs who visited a special care school in and around the community of Dakshana Kannada. The study was conducted after obtaining a proper Institutional ethical clearance from KVGDC. Before the start of the study, a informed consent was obtained. Mothers of children with special care needs aged between 6 and 17 years, who spent more than 8 h with their children, who resides in that study population were included in the study. A single interviewer used a structured questionnaire to collect data from the participants through google e-forms. The pilot study was done among 15 parents to check the validity and reliability of the study. Here the questionnaires are sent to 15 participants to check how much they are able to understand or read the questionnaire. While validating Flesch Kincaid readability score: 65.7, Flesch Kincaid

grade level: 9.8 and Aiken's v index for each item ranges from = 0.83 to 1 (high to very high). And separately face validity is analyzed. The reliability of the study is done using Cronbach test reveals the score of 0.89 which show the study is acceptable. The questionnaire consisted of two parts: the first part had demographic details and the second part consisted of 15 questions, in which five questions were related to knowledge about oral health, two on attitude, and 8 on practices of oral hygiene. For attitude and practice questions had option as: (1) Yes, (2) No, and (3) Uncertain.[1] The sample size for the study was calculated using G power software. Version 3.0.10. Germany based on the previous study, which showed the prevalence of knowledge about oral health as 15% (0.15),[1] and the power of the study was kept as 0.80 and alpha value as 0.05; a total of 50 was obtained.

### **Scoring system**

A scoring system was developed as follows to assess the responses for the questionnaire.[1]

Good knowledge – score >7, fair: 4–6, and poor: <3;  
Good attitude – score >4, fair: 3–4, and poor: <2; and  
Good practices – score >4, and fair: 2–3, poor: <1.

### **Statistical analysis**

The data were entered into Microsoft Excel 2010 version, and the statistical analysis was computed using SPSS Inc. Released 2011. IBM SPSS Statistics for Windows, version 20.0 Armonk, NY: IBM Corp. Descriptive statistics were computed to calculate responses for each question.

One-way ANOVA was computed to compare means of knowledge, attitude, and practice with age, education, and income. Normality of the data was tested using Shapiro–Wilks test.

**Results**

Table 1: Distribution of responses of the participants to the questions

Sn.	Questions	Options	(%)
1	Do you feel oral hygiene is important in maintaining general health?	A. Yes	38.1
		B. No	36.8
		C. Uncertain	25.1
2	Did you know that the tooth paste contains” substance that reduce caries”	A. Yes	17.8
		B. No	35.2
		C. Uncertain	47
3	When do you take your child to visit the dentist	A. Only During Problems	74.3
		B. During Every 6 Months	9.8
		C. Not Particular	15.9
4	Did your child ever complaint of tooth pain	A. Yes	10.6
		B. No	66.2
		C. Uncertain	23.2
5	If yes,have you consulted a pediatric dentist	A. Yes	3.9
		B. No	78.2
		C. Uncertain	17.9
6	Do you assist your child while brushing	A. Yes	54.2
		B. No	31.3
		C. Uncertain	14.5
7	When do you change your child’s tooth brush	A.ONCE A MONTH	1.66
		B.EVERY 2-3 MONTHS	31.8
		C.ONCE THE BRISTLES FRAY OFF	66.6
8	Have you noticed any oral habits in your child [ex: breathing through mouth, teeth clenching]	A. Yes	17.1
		B. No	68.8
		C. Uncertain	14.1
9	Milk tooth do not require good care, as it is going to fall anyway	A. Yes	3.9
		B. No	78.2
		C. Uncertain	17.9
10	Did your child ever complaint of bleeding from mouth	A. Yes	12.4
		B. No	82.1
		C. Uncertain	5.5

11	.Do your child have diet restricted to certain types of food [ex:soft diet]	A. Yes	17.1
		B. No	68.8
		C. Uncertain	14.1
12	Did you know it is necessary to clean the child’s teeth after every meal	A. Yes	3.9
		B. No	78.2
		C. Uncertain	17.9
13	How do you clean your child teeth	A.FINGER	28.1
		B.TOOTH BRUSH	71.8
		C.TWIG	0.1
14	.Have you noticed any color change/covering on your child’s teeth	A. Yes	15.6
		B. No	79.1
		C. Uncertain	5.3
15	Did you know some medicines cause change in color of teeth	A. Yes	3.9
		B. No	78.2
		C. Uncertain	17.9

Table 2: Distribution of mean knowledge, attitude, and practice scores with respect to age

	30-40 yrs.	41-50 yrs.	>51 yrs.	P-value
Knowledge	4.8±1.4	3.7±1.5	4.8±1.5	0.005* (5.47)
Attitude	3.99±1.6	2.48±1.1	3.89±1.6	0.294 (1.23)
Practice	3.45±0.6	3.09±0.7	3.88±1.6	0.000* (11.43)

\*P<0.005 was considered as statistically significant

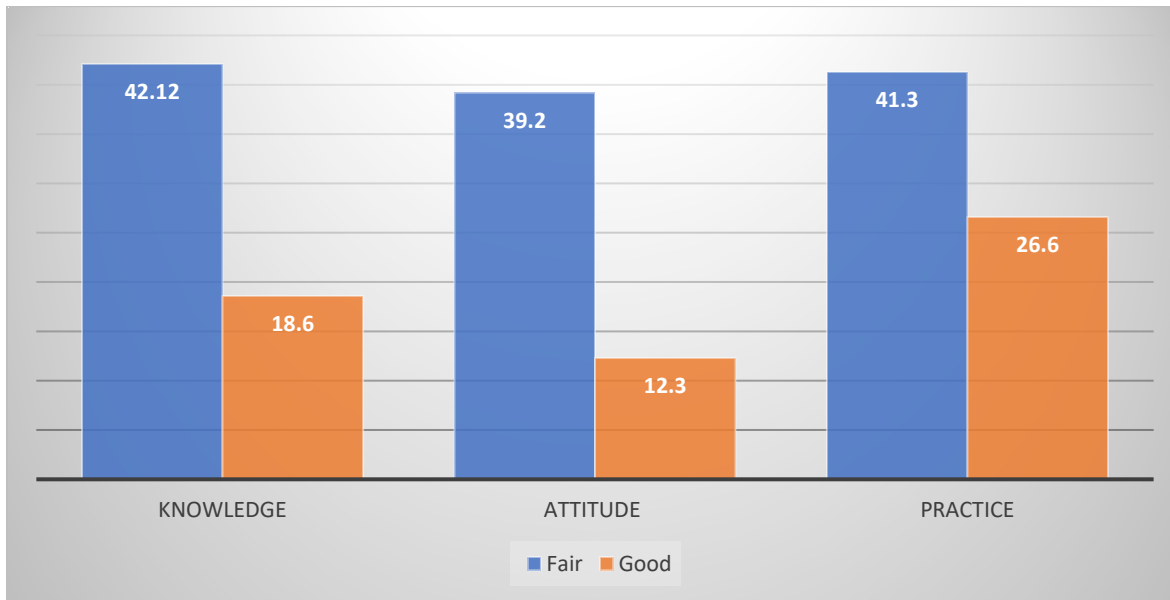
Table 3: Correlation of Knowledge, Attitude and practice

	Knowledge	Attitude	Practice
Knowledge	-	0.56 (0.001*)	0.67 (0.008*)
Attitude	0.56 (0.001*)	-	0.74 (0.002*)
Practice	0.67 (0.008*)	0.74 (0.004*)	-

Table 4-Distribution of Special Care Children

	Percentage (%)
Autism and ADHD	40.5
Cerebral Palsy	28.9
Hearing	15.7
Visual impairment	14.9

Figure 1: Distribution of Knowledge, Attitude and Practice questionnaire data representation



### Demographic information

A total sample of 50 participants were included for the study. Among the children assessed, a heterogeneous group of disabilities was seen. Table 4 shows Majority (40.5%) of them had learning disabilities such as autism and attention deficit hyperactivity disorder, 28.9% of them had cerebral palsy with intellectual disability, and remaining children had hearing (15.7%) and visual impairment (14.9%).

### Overall knowledge, attitude, and practice

From the figure 1 we can figure out majority 42.12% of the mothers had fair knowledge, 12.3% exhibited good attitude, and 26.6% showed good practices. The present study had hardly 18.6 % in the good knowledge category. About 51% of the mothers who had responded rated their child's oral health as fair, and 7.6% reported poor oral health. Responses of the mothers regarding their child's oral health, questions related to the causes of tooth decay, gum disease, and methods to prevent it are tabulated in Table 1. Mothers in the age group of 30-40 years and 41-50 years showed higher mean knowledge ( $4.8 \pm 1.5$ ) scores compared to other age group ( $P = 0.005$ ) [Table 2].

A positive correlation between knowledge and attitude as well as practice scores were seen among the study population [Table 3].

### Discussion

This cross-sectional study carried out among 50 mothers of children with special needs gave us insight about the knowledge, attitude, and practices of oral health. This study also revealed that despite a compromised general health seen among these disabled children, the mothers were trying hard to maintain the oral hygiene of these children. The results of the present study were in line with the studies conducted by where majority of the mothers (80.2%) reported sticky foods such as chocolate can cause dental caries.[9-11] However, an reduced awareness on various forms of sugary items and time of consumption of sugars which are harmful to the teeth were seen in the current study, which was further justified by Moulana *et al.* in 2012 and Chan *et al.* in 2002.[9,12] Whereas Blinkhorn *et al.* had stated in his study that 78% of mothers had awareness about dietary instructions.[13]

This highlights a presence of lacunae present in the knowledge on relationship between the different forms of sugars and time consumption with dental caries. In

addition to this, knowledge on prevention of various oral conditions was also low in this study.[8] Majority of the mothers agreed that it is essential to make regular dental visits for their children, which was similar to the results produced by Moulana *et al.*, 2012 and Chan *et al.*, 2002.[9,12] However, in contrast to the above finding, only a very few reported to follow it. The reasons attributed for the same were apprehensive attitude toward dental care, high costs, accessibility, or lack of knowledge on good oral health care. Participants had inadequate knowledge on the deciduous tooth management. Most of them (72.9%) cared least about their child's primary teeth, which was similar to the study done by Suresh *et al.*, 2010.[8] Majority of the caregivers (80%) used finger for cleaning their child's teeth. This is because of the fact that majority of our sample consisted of children with autism, who have aversion for using toothbrush for tooth brushing.[14] Mothers with higher education and income had better knowledge and attitude regarding the oral hygiene practices which is similar to a Polish study.[15] This could be because of the fact that parents with higher level of education would have appropriate access to accurate source of information and have a complete and comprehensive understanding of the information. Furthermore, parents with higher education will exhibit more positive health attitudes and render greater attention to the general and oral health of their child.[16]The present study findings are suggestive of poor knowledge about oral health among mothers of special needs children. This suggests a call for appropriate and effective oral health education program among them. With increasing change in trends of oral health maintenance, it is the need of the hour to hatch an appropriate oral health program targeting these disadvantaged populations. Emphasis should focus on improving their knowledge, as it is directly related to their oral health-care behavior.

## Conclusion

The current study presented findings that mothers of children with special needs had poor knowledge and attitude toward oral health of their children.

## Limitations

The results of the present study cannot be extrapolated, as the sample of the study was a convenient one and not a representative in nature. Further, large sample studies in multicenter need to be conducted to extrapolate the results.

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