

# Awareness, Proficiency and Barriers for Treating Children with Special Health Care Needs among Dentists of Gujarat, India- A Cross Sectional Survey

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## Abstract

**Introduction:** Children with special health care needs (SHCN) are under-resourced dental patient groups worldwide. They are more prone to develop dental caries and periodontal diseases. This may be due to the complex medical and behavioural needs of these children making them difficult population to treat in dental office.

**Aim:** To evaluate Awareness, Proficiency and Barriers for managing children with special health care needs among dentists of Gujarat, India.

**Method:** This cross-sectional survey was conducted in Gujarat state of India. A self-structured closed ended validated questionnaire was forwarded to 400 dentists which included general and specialist dentist of Gujarat. The questionnaire gathered data regarding demographics, knowledge, skills and difficulties faced by dentists to treat specially abled children. Participants responded to questionnaire survey were 246. SPSS version 20.0 was used for analysing descriptive analysis through Chi square test. P value of <0.05 was considered to be significant.

**Result:** 92.28% study population were aware of special care dentistry among which 58.13% have treated special child. Statistically significant difference was found between speciality and awareness of dental home ( $p=0.005$ ) and AAPD ( $p=0.000$ ) guidelines for managing such patients. Restorative treatment (42.04%) was most commonly rendered treatment. Greatest challenges in delivering oral care to CSHCNs were lack of adequate knowledge to manage such children majorly in general dentists (42.6%) and less priority given by parents due to prevailing systemic condition and was statistically significant ( $p=0.04$ ).

**Conclusion:** Dental care providers though relatively less confident, showed readiness and positive attitude in treating patients with SHCNs. The revision of dental curriculum seems vital to provide the dental graduates, didactic training in managing such children, Also, subsidized resources and awareness

camps for parents with SHCNs children can help overcome barriers and bridge the gap of unmet treatment needs.

**Keywords:** Special Health Care Needs Children, Barriers, Awareness, Dentists

## I. INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD) defines special health care 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.” The etiology can be either acquired from disease, trauma or environment or can be developmental and congenital that limits self-maintenance and major life activities. Care for individuals with special needs differs from routine care as it demands esoteric mastery and additional cognizance in the domain of healthcare for children with SHCNs.

Oral health of individuals has much influence on general health as well as on psychological and social behavior of person. Children with special health care needs are at higher risk of oral diseases like dental caries, periodontal diseases, and dental trauma due to poor oral hygiene, associated tooth anomalies, neurological impairment, and lack of access to specialized oral care services.<sup>1,2</sup> In case of a child with SHCNs, oral health holds prime importance as the health disability, limited manual dexterity and aftermath of certain medications predispose them to substandard oral hygiene.<sup>3-5</sup> It has been well-recognized by Jennifer in 2014 that oral health is the most forsaken health need of people with disability. McIver described five key roadblocks to access oral healthcare for children with SHCNs: (1) The primary medical care system (2) the child’s parents (3) the child himself (4) the dentist and (5) finances for oral care.<sup>6</sup>

According to Edwards and Merry in 2002, the first step towards addressing these deficiencies is identification of the aforementioned barriers. Providing oral health care to children with special needs differs from normal as it demands peculiar skills and knowledge, amplified attention and awareness along with empathy and motivation. Large and scattered population of

SHCNs children receive oral care majorly from general dentists or other specialist dentists (MDS besides pediatric dentist), due to limited number of pediatric dentists (who have expertise in managing these children).<sup>7,8</sup> There is scarce literature addressing this problem statement in Gujarat. Therefore, this cross-sectional survey was conducted to determine awareness, proficiency and barriers faced by dentists of Gujarat for treating children with SHCNs.

## II. METHODOLOGY

### *Design and Ethical Clearance:*

This Cross-sectional survey was conducted in the Gujarat state, India. Approval for the study was obtained from institutional ethical committee and the questionnaire was validated from university faculty before conducting this survey. Questionnaire were divided into two sections. First section of the survey recorded the demographic details which included age, gender, years of clinical practice and speciality (BDS, MDS besides pediatric dentist and Pediatric dentist). The second section of the survey contained questions about knowledge, skills and barriers for treating children with SHCNs. Close ended questions with yes/no or multiple choices or rate scale questions were used to obtain easy responses from 400 registered dentists in Gujarat State Dental Council selected by computer randomization system which included dentists, pediatric dentists, MDS besides pediatric dentists of Gujarat, India. Participants were requested to complete the questionnaire within a month. The response rate was 61.5 % after 2 gentle reminders.

## III. STATISTICAL ANALYSIS

Statistical analysis was done after converting the categorical data to numerical data. Data was tabulated and analyzed using Statistical Package for Social Sciences (SPSS) version 20.0. Non-Parametric Chi square test was used to determine statistically significant difference. P value of <0.05 was considered to be significant.

#### IV. RESULTS

**Demographics:** Table 1: The demographics recorded that maximum numbers of responders were between 18-25 years (65.45%), female responders (77.24%) were more compared to male responders (22.76%), majority of responders had less than 5 years of clinical experience (79.27%) and majority numbers of responders were Dentists (50%) followed by MDS besides pediatric dentists (33.33%) and least were pediatric dentists (16.67%).

**Awareness, Proficiency and Practice:** Table 2: The present study depicted that 92.28% responders were aware of special care dentistry while only 58.13% of responders had treated CSHCN and it was Statistically significant ( $p=0.016$ ). Pediatric dentists were most confident and willing in treating children with SHCNs (85.36%). Only 42.28% of the respondents were aware of rights of person with disability act 2016 which was statistically significant ( $p= 0.010$ ) finding in our study. Majority of participants 45.13% reported their undergraduate training for managing CSHCN as inadequate, 33.33% as fairly adequate and 21.54% as adequate. The statistically significant difference was associated between speciality and awareness of dental home and AAPD guidelines for managing CSHCN. About 93.9% were keen to receive schooling for management of CSHCN. Non pharmacologic behavior management techniques was the most preferred method (49%) followed by GA, LA and conscious sedation in managing CSHCN. In our study, participants stated that physically handicapped can be managed better than medically compromised followed by emotionally challenged and mentally challenged as shown in Graph 1. Furthermore, restorative treatment (42.04%) was the foremost rendered treatment followed by preventive treatment, tooth removal, pulp therapy, emergency and periodontal treatment in decreasing order of frequency (Graph 2). 28.98% dental practitioners referred CSHCN to pediatric dentist due to lack of their knowledge regarding diagnosis and management of special children.

#### Barriers faced by dentist in managing SHCNs children:

Our study shows that most common barriers encountered in treating children with SHCN was less priority given by parents due to medical condition (48.8%) and child is unable to comprehend instructions (19.5%) (Table 3). Greatest challenges for dentist in delivering oral care to CSHCN was lack of adequate knowledge and training (65.9%) followed by lack of communication with child, negative attitude and behavior of parents and lack of infrastructure and this was statistically significant ( $P=0.041$ )

It was observed that regarding SHCN, book and conferences (64.49%) followed by guidelines (53.47%) and certified courses (43.27%) were the preferred mode by participants to update their knowledge (Graph 3). Few of responders (4.90%) updates their knowledge through personal practices and experiences, working with senior doctors.

#### V. DISCUSSION

This study gathered substantial information regarding the involvement of general dentist (BDS), MDS besides pediatric dentists and pediatric dentists of Gujarat in treating CSHCNs. The response rate was 61.5% which dictated positive attitude of responders in treating children with disabilities.

It is evident from this study that most of the participants were aware about CSHCNs, however pediatric dentists had treated maximum number of children with SHCNs and they were more confident to treat them when compared to other dentists. This can be explained by the fact that they have increased patient exposure and training in this particular field during their extended tenure compared to other dentists and this could also be a reason for the statistical difference regarding the awareness of "Rights of person with Disability Act 2016". This result is in accordance with study done by Suhasini *et al.*<sup>9</sup> A statistically significant number of dentists believed that they were inadequately trained in treating children with SHCNs but 71.95% showed readiness for treating CSHCNs, regardless of their specialty which is in accordance to study done by Folakemi Orudbad.<sup>10</sup> Pediatric dentists were more aware

about the Dental Home and AAPD Guidelines for treating CSHCNs as compared to other dentists and this statistically significant difference could be due to their substantial command and training in this area.

Non-pharmacological method for behaviour management was most preferred treatment modality in contrast to sedation and general anaesthesia by maximum number of respondents and similar result was seen in the study by Ravindran *et al.*<sup>11</sup> Finances, lack of skills for risk management and unavailability of proper infrastructure might be the prime causes for the averted use of pharmacological method of behavior management. In this study, 28.94% surveyed practitioners had referred CSHCN to pediatric dentists as they were unable to diagnose the condition. The dearth of prior exposure to this category of children along with scarcity of training and knowledge in this field might be the reason for unwillingness of some dentists to manage such patients. Our study has also made effort in determining the barrier faced by dentists in treating CSHCN and found that lack of adequate knowledge and lack of communication with child were cofounding factor. Other reasons were increase treatment time, decrease financial gain and complications that may arise due to systemic condition. Our results also show that underlying medical condition was the most common barrier for parents in seeking dental care for their children which could be due to engrossment in management of systemic condition rather than dental issues until they become severe. Apart from this, other barriers faced by parents included less concern regarding care of baby teeth considering that eventually they will fall off, inability to follow the instructions by the child due to lack of understanding and additional financial burden. These findings have been supported by Dhanalakshmi and Sujatha (2016) and Duker *et al.* (2020).<sup>12,13</sup> To overcome these barriers efforts should be made to modify dental school curriculum to encourage dentist to provide didactic treatment to children with special needs without any reluctance. In our study majority of treatment rendered by

respondents was restorative treatment and least rendered was emergency treatment and periodontal treatment. This finding was contradictory to study done by Smith and Rooney where emergency services, extractions, and caries management were the commonly reported treatments.<sup>14</sup> The subjective nature of self-reported information can hold a risk for bias which could be the limitation of our study.

## VI. CONCLUSION

It can be concluded from the study that despite of lack of skills and confidence in dealing with CSHCNs, majority of the dentists showed positive attitude and willingness to learn the management of such patients. Revising undergraduate dental curriculum and Special training programmes for the dentists can boost their confidence to manage this relatively less preferred population in their practice. Supporting the Different-Ability Awareness and educational camps among the parents with special needs children can help bridge the gap of neglected oral health needs. Dental Insurance policies for different abled individual can be first step in overcoming such barriers.

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**Table 1: Demographic profile of study participants (n=246)**

Variable	Number	Percentage
<i>Age in Years</i>		
18-25	161	65.45
26-40	84	34.15
41-55	1	0.40
>55	0	0.00
<i>Gender</i>		
Female	190	77.24
Male	56	22.76
<i>Years of clinical Experience</i>		
<5 years	195	79.27
>5 years	51	20.73
<i>Speciality</i>		
BDS	123	50.00
MDS besides Pediatric Dentist	82	33.33
Pediatric Dentist	41	16.67

**Table 2: Awareness and proficiency of dentists in treating CSHCN**

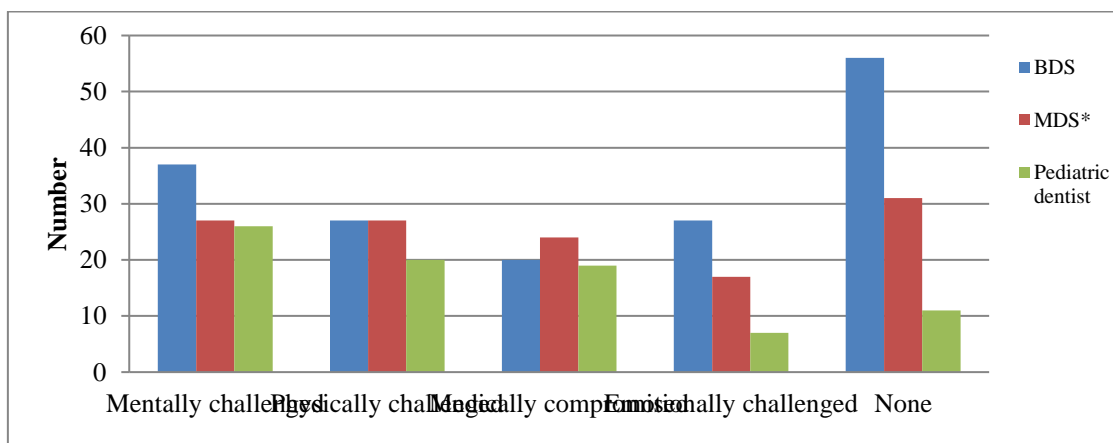
	BDS(n=123)	MDS*(n=82)	MDS(n=41)	Total(n=246)	P value
Are you aware of Special Care Dentistry?					
Yes	112(91.06)	74(90.24)	41(100)	227(92.28)	0.125
No	11(8.94)	8(9.76)	0(0)	19(7.72)	
Have you ever treated children with SHCN?					
Yes	65(52.85)	46(56.10)	32(78.05)	143(58.13)	<b>0.016</b>
No	58(47.15)	36(43.90)	9(21.95)	103(41.87)	
Are you confident and willing to treat children with SHCN?					
Yes	88(71.55)	54(65.85)	35(85.36)	177(71.95)	0.075
No	35(28.45)	28(34.15)	6(14.64)	69(28.05)	
Are you Aware of "Rights of person with Disability Act 2016"?					
Yes	48(39.02)	30(36.58)	26(63.41)	104(42.28)	<b>0.010</b>
No	75(60.98)	52(63.42)	15(36.59)	142(57.72)	

Your undergraduate training in treating children with SHCN is					
Adequate	36(29.27)	12(14.63)	5(12.19)	53(21.54)	<b>0.011</b>
Fairly adequate	44(35.77)	26(31.71)	12(29.27)	82(33.33)	
Inadequate	43(34.96)	44(53.66)	24(58.54)	111(45.13)	
Are you Aware about Dental Home for children with SHCN?					
Yes	90(73.17)	57(69.51)	39(95.12)	186(75.61)	<b>0.005</b>
No	33(26.83)	25(30.49)	2(4.88)	60(24.39)	
Are you Aware of AAPD guidelines for Management of children with SHCN?					
Yes	53(43.09)	37(45.12)	36(87.80)	126(51.22)	<b>0.000</b>
No	70(56.91)	45(54.88)	5(12.20)	120(48.78)	
Are you interested for further knowledge and training in managing children with SHCN?					
Yes	114(92.68)	76(91.46)	41(100)	231(93.90)	0.202
No	9(7.32)	6(9.54)	0(0)	15(6.10)	
your					
Preferred method to treat child with SHCN					
Non-pharmacological method	56 (45.9%)	40 (48.8%)	24 (58.5%)	120(48.78%)	
Local Anesthesia	24(19.7%)	10(12.2%)	4 (9.8%)	39(14.39%)	
Conscious Sedation	20 (16.4%)	11(13.4%)	4(9.8%)	35 (13.25%)	0.404
General Anesthesia	22 (18%)	21(25.6)	9(22%)	52 (19.69%)	

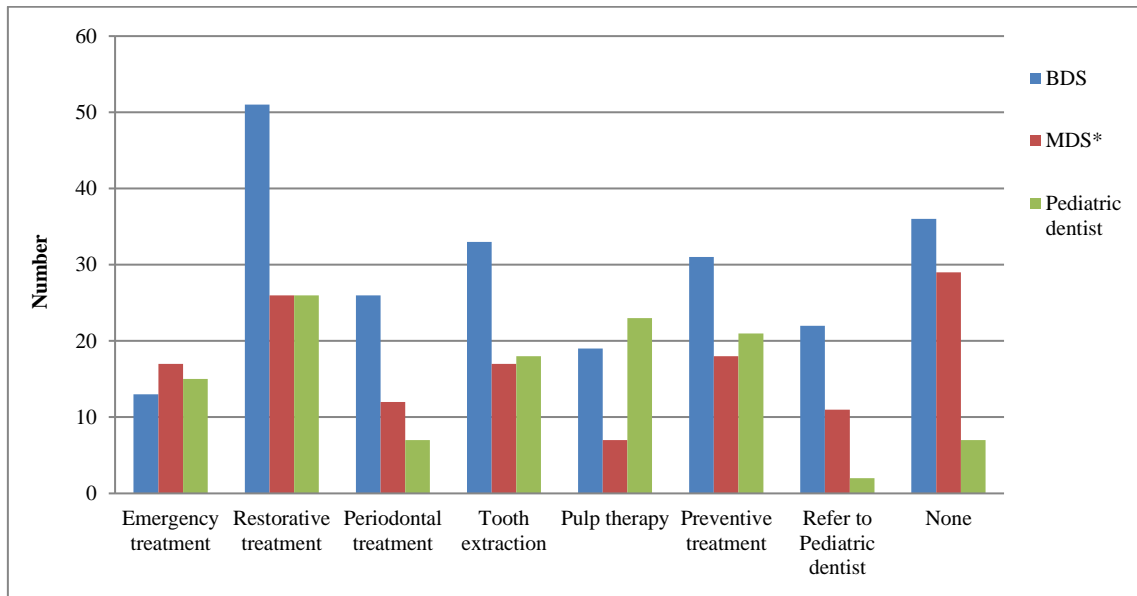
MDS\* - MDS besides pediatric dentist

**Table 3: Barriers in treating CSHCN**

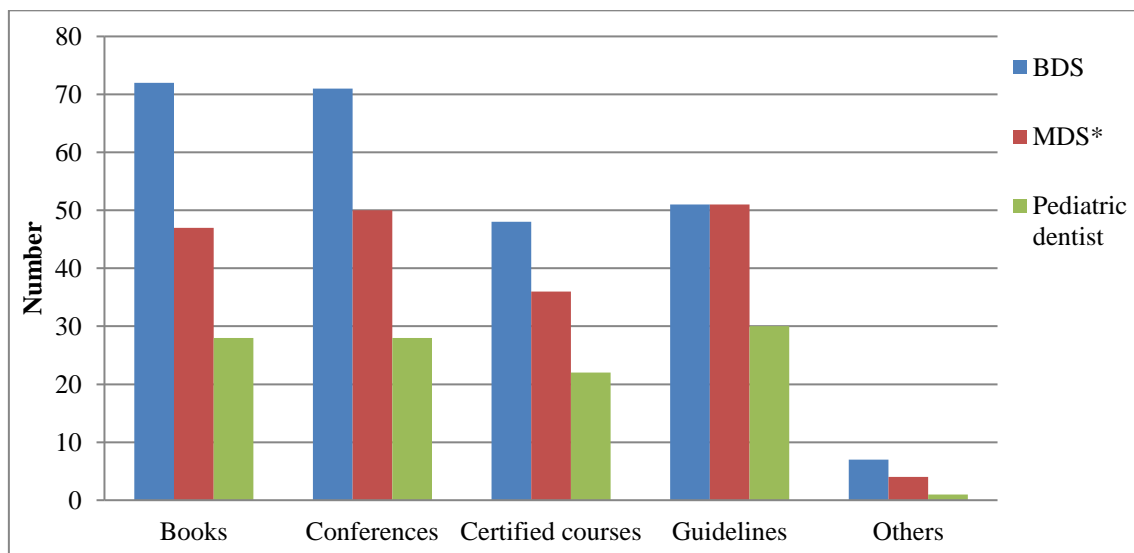
Questionnaire	Response	BDS		MDS other than pediatric dentist		Pediatric dentist		P value
		N	%	N	%	N	%	
Common Barriers in treating children with SHCN	less priority by parents due to medical condition	39	32.0	31	37.8	20	48.8	<b>0.040</b>
	Less concern for milk teeth as they eventually going to fall off	32	26.2	14	17.1	3	7.3	
	Child is unable to comprehend instructions	27	22.1	16	19.5	8	19.5	
	Multiple visits that cause financial burden to parents	11	9.0	3	3.7	5	12.2	
	Lack of accessibility	13	10.7	18	22.0	5	12.2	
Greatest challenge for dentist in treating child with SHCN	Lack of adequate knowledge and training	52	42.6	28	34.1	27	65.9	<b>0.041</b>
	Lack of infrastructure	9	7.4	9	11.0	3	7.3	
	Negative attitude and behavior of parents	16	13.1	18	22.0	5	12.2	
	Lack of communication with child	23	18.9	15	18.3	5	12.2	



**Graph 1: Types of disabilities managed by study population**



**Graph 2: Treatment rendered to CHSCN by study population**



**Graph 3: Preferred method to update knowledge**