

Knowledge, Attitude and Perception of Dentists towards Special Care Dentistry in Chennai, India

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ABSTRACT

Aim: The aim of this study was to investigate the Knowledge, attitude and perception of dentists towards special care dentistry. The objective was to evaluate the awareness of special care dentistry and its needs among dentists who were based in Chennai and also to determine the association between age range and willingness to participate in future special care training.

Method: The study was designed as an online closed ended questionnaire based study and the dentists (n=101) were contacted via email. The data collected was computerized and analysed statistically using IBM SPSS software.

Results: The frequency of the obtained data was depicted for understanding the knowledge, attitude and perception of dentists towards Special Care Dentistry (SCD). Chi-Square test was used for statistical analyses to determine the association between age range (20-30, 31-40, 41-50, and 51-60) and willingness to participate in future special care training courses. The result was statistically significant with chi-square value of 12.234 at p-value 0.007 ($p < 0.05$). The association between age range and category of patients difficult to treat was not statistically significant at p-value 0.98. The association between gender and category of patients difficult to treat was not statistically significant at p-value 0.548. The association between dentist qualification and referral to special care specialists was not statistically significant at p-value 0.318.

Conclusion: This study highlights the shortcomings in our dental curriculum as not all dentists had been mandatorily trained in delivering oral health care for special care patients.

Key words: Antibiotic prophylaxis, COVID-19, Oral health, Dentistry, Geriatric dentistry, Dental care for disabled, Dental care for chronically ill

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INTRODUCTION

The guidelines issued by American Academy of Paediatric Dentistry defines special health care needs as that "include any physical, developmental, mental, sensory, behavioural, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and or use of specialized services or programs. The condition may be congenital, developmental, or acquired through disease, trauma, or environmental cause and may impose limitations in performing daily self-maintenance activities or substantial limitations in a major life activity" [1]. Special Needs Dentistry is defined by the Royal College of Surgeons of Edinburgh as "the specialty in dentistry concerned with the oral health care of patients with special needs for

whatever reason including those who are physically or mentally challenged [2].

Studies have shown that patients with special needs for dental care are underserved [3]. And as a result showed poorer oral health [4]. The shortcomings in dental profession for delivering oral care are insufficient manpower to execute comprehensive care, unequal demographics of patient distribution, lack of empathy to patient needs and expectations, and training the unskilled personnel for risen demands and sudden needs [5]. To overcome this barrier in Special Care Dentistry (SCD) patients, one must be trained exclusively in this arena to bridge the gap. SCD is still at a nascent level in India and of late it has begun to catch up with the international dental climate.

Only very few studies are available to understand the depth of exposure in the available dental curriculum, mind set of dentists in treating SCD patients and to obtain insights regarding existing lacunae among dentists towards special care dentistry. Our team has extensive knowledge and research experience that has translated

into high quality publications [6-12]. To the best of our knowledge there are no studies from Chennai till date and hence this study was needed hence, the aim of this study was to investigate the knowledge, attitude and perception of dentists towards special care dentistry in Chennai. The objective was to evaluate the existing awareness of special care dentistry and its needs among dentists who were based in Chennai and also to determine the association between age range and willingness to participate in future special care training.

MATERIALS AND METHODS

The Knowledge, Attitude and Perception (KAP) survey was conducted among dentists based on Chennai. The study was conducted in accordance with Helsinki ethical principles after obtaining institutional ethical committee clearance of registered number IHEC/SDC/OMED-2002/21/33. The questions were framed in google forms and were reviewed by all three investigators independently before circulation among Chennai dentists. The google form was set in such a way that only one response could be recorded by the dentist after accessing through their E-mail ID to prevent multiple responses by a single dentist (Figure 1).

Special Care Dentistry survey

1. Name
2. Your Age in years:
20-30/31-40/41-50/51-60
3. Gender:
Male/Female
4. About you:
Intern/ Post Graduate student/ Faculty
5. Email ID:
6. Are you aware of the existence of Special Care Dentistry?
Yes/No/Do not know
7. Is special care dentistry a different specialization in dental sciences?
Yes/No/Do not know
8. Have you received Special Care Dentistry training in your dental curriculum?
Yes/No/Do not know
9. Do you feel Special care patients are more time consuming to treat?
Yes/No/Have not treated any
10. Would you like to learn about treating special care patients?
Yes/No
11. Your preference of terminology?
Special Care Dentistry/ Special Needs Dentistry
12. Do you find high incidence of cancellation [or] broken appointments with Special Care patients?
Yes/No
13. Do you feel lesser the need for restorative dentistry in Special care patients?
Yes/No
14. Do you feel discouraged to treat Special care patients?
Yes/No
15. Are you aware of specially designed dental chair for patients with disability?
Yes/No
16. Will you participate in future special care training courses or workshops?
Yes/No
17. Has your awareness about Special care specialty in your dental institution increased after COVID outbreak?
Yes/No
18. Will you use the information provided in educational intervention in your dental practice?
Yes/No
19. Do you follow the recommended antibiotic prophylaxis regimen while treating special care patients who are susceptible for infective endocarditis?
Yes/No/Did not treat such patients/ Not suggested any more in the UK
20. Your choice of antibiotic during infective endocarditis prophylaxis?
Amoxicillin 2g/ Cephalosporin 2g/ Clindamycin 600mg
21. Which category of patients do you find most difficult to treat?
Physical disability/ Intellectual disability/ Complex medical conditions/ Psychiatric issues/Infectious diseases/ Geriatric [Above 65 years of age]/Sensory Impairment/Pregnancy
22. You refer patients to Special care dentistry specialist because:
Uncomfortable in performing the procedure/ Unsure how to proceed with treatment/ Time consuming

Figure 1: List of survey questions circulated in Google forms.

Table 1: Frequency distribution of respondents according to age range.

Age range	Frequency	Percent
20-30	75	74.3
31-40	23	22.8
41-50	2	2
51-60	1	1
Total	101	100

Majority of the respondents were females (n=71; 70.3%) and remaining were males (n=30; 29.7%) (Table 2).

Table 2: Frequency distribution of respondents according to gender.

Gender	Frequency	Percent
Male	30	29.7
Female	71	70.3
Total	101	100

The response data was downloaded in google excel sheet format and imported into excel sheet of Microsoft office Professional Plus 2019, 64-bit system and formatted.

The data analysis was processed using IBM SPSS (statistical package for the social sciences) 23.0 software (SPSS Inc., Chicago, IL., USA). The *Chi-Square test* was used for the statistical analyses to determine the association between age range and willingness to participate in future special care training courses or workshops.

RESULTS

A total of 101 (n=100) responses were recorded. 75 (74.3%) respondents were in the age range of 20-30 years, 23 (22.8%) respondents were in the age range 31-40 years. Least frequent age range was 41-50 years and 51-60 years with 2 (2%) and 1 (1%) respondent respectively (Table 1).

Among the respondents, 55 [54.5%] were postgraduate students, 31 (30.7%) and 15 (14.9%) were private practitioners and dental faculty members respectively (Table 3).

Table 3: Frequency distribution of respondents according to qualification position.

Position	Frequency	Percent
Postgraduate student	55	54.5
Faculty	15	14.9
Private practitioner	31	30.7
Total	101	100

In relation to awareness and exposure to special care dentistry, 92 (91.1%) respondents were aware of the existence.

Only five (5%) and four (4%) respondents said no and do not know the response (Figure 2a). 47 (46.5%) respondents agree that Special Care Dentistry (SCD) is a different specialization in dental sciences whereas 37 (36.6%) and 17 respondents (16.8%) either disagree or not aware of the differentiation respectively (Figure 2b).

Regarding knowledge, 77 (76.2%) respondents have not received any SCD training in dental curriculum, only 20 (19.8%) respondents had received the SCD training, whereas 4 (4%) respondents were not aware if they had that training in their curriculum (Figure 2c).

In the perception aspect, 64 (63.4%) respondents agreed to the perception that SCD patients are time consuming to treat and only 11 (10.9%) respondents felt not time consuming. 26 (25.7%) respondents have not treated any special care patients (Figure 2d).

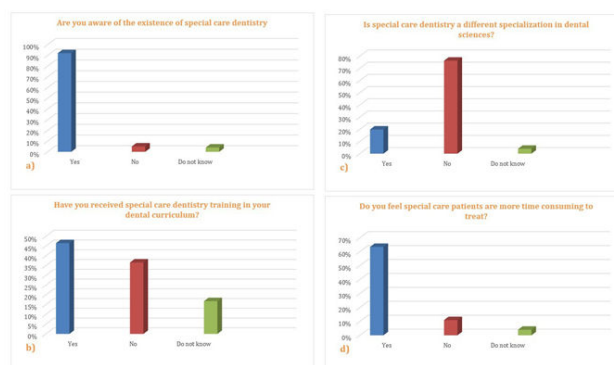


Figure 2: Graphical representation of awareness (a, b), knowledge exposure to special care dentistry (c) and perception (d) among respondents.

Interestingly, 23 respondents (22.8%) preferred the term “Special Needs Dentistry” though the terminology “Special care dentistry”, preferred by 78 respondents (77.2%) is commonly used in India. (Table 4) represents the list of survey questions for which respondents recorded their agreement or disagreement.

Table 4: Frequency distribution of survey responses by respondents to “Yes or No” questions in special care dentistry.

Survey question	Response	Frequency	Percent
Willing to learn about Special care patients	Yes	93	92.1
	No	8	7.9
Encountered high incidence of cancellation [or] broken appointments with Special Care patients	Yes	70	69.3
	No	31	30.7
Feeling discouraged to treat Special care patients	Yes	17	16.8
	No	84	83.2
Awareness of specially designed dental chair for patients with disability	Yes	63	62.4

	No	38	37.6
Feeling lesser the need for restorative dentistry in Special care patients	Yes	21	20.8
	No	80	79.2
Awareness about Special care specialty in your dental institution increased after COVID outbreak	Yes	57	56.4
	No	44	43.6
Willing to participate in future special care training courses or workshops	Yes	88	87.1
	No	13	12.9
Willing to use the information provided in educational intervention in your dental practice	Yes	97	96
	No	4	4

Though, 69.3% respondents had encountered high incidence of cancellation (or) broken appointments with special care patients and 79.2% felt the need for restorative dentistry in special care patients is lesser, 83.2% respondents did not feel discouraged to treat special care patients. Also, 62.4% respondents were aware of the existence of specially designed dental chairs for patients with disability. 92.1% respondents were willing to learn about Special care patients. However, not all were willing to pursue further learning as Willingness to participate in future special care training courses or workshops was seen in 87.1% respondents. 56.4% respondents agreed that awareness about Special care specialty in their dental institution had increased after COVID outbreak and 96% respondents agreed to use the information provided in educational intervention implemented in their dental practice.

Antibiotic prophylaxis is recommended for patients with systemic conditions who are susceptible for Infective Endocarditis (IE). The recommended drugs are Amoxicillin 2 g one hour prior to the procedure and in case of patients who are allergic to penicillin groups of drugs, Cephalexin 2 g or Clindamycin 600 mg is advised. However, the United Kingdom (UK) based National Institute for Care and Excellence (NICE) do not recommend IE prophylaxis by dentists and suggest referring to a cardiologist for follow up care. In this survey, majorly 89 of the 101 respondents (88.1%) followed the antibiotic prophylaxis regimen as per American Dental Association (ADA) guidelines. Ten respondents (9.9%) did not follow and one respondent each (1% each) responded as didn't treat such patients and not suggested anymore in the UK (Figure 3a). Most frequently prescribed was Amoxicillin 2 g (84 respondent's i.e. 83.2%). It was followed by Clindamycin

600 mg (10 respondent's i.e. 9.9%) and Cephalexin 2 g (7 respondents i.e. 6.9%) (Figure 3a, 3b).

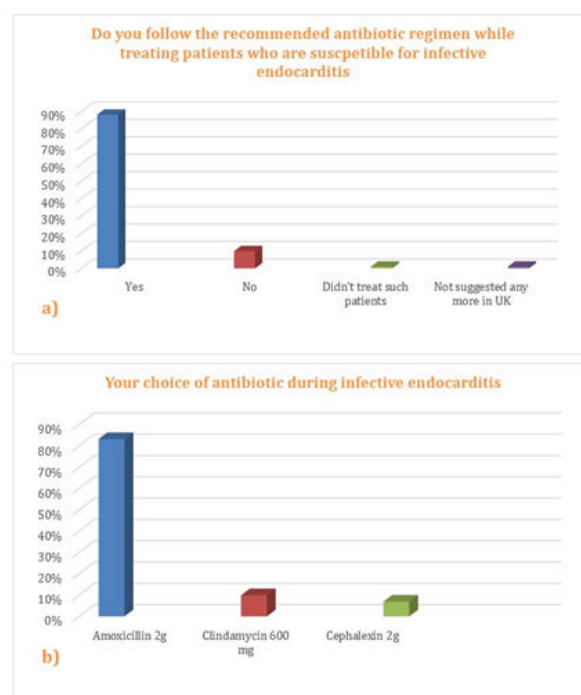


Figure 3: Graphical representation of awareness of Antibiotic prophylaxis (a) for Infective endocarditis patients among respondents and the choice of drug used (b).

Among different categories of SCD patients, psychiatric issues patients were the common category of patients difficult to treat according to 46 respondents (45.5%). The next category of patients difficult to treat was intellectual disability patients according to 25

respondents (24.8%). Twelve respondents (11.9%) responded that complex medical condition patients were difficult to treat.

The less common category of patient difficult to treat according to the respondents was sensory impairment (5 respondents 5%), Geriatric (above 65 years), physical disability and infectious disease (3 respondent's each 3% each) (Figure 4a).

The most common reason for referral to special care specialists was due to unsureness of how to proceed with treatment for SCD patients according to 50 respondents (49.5%).

The next common reason was time consumption according to 31 respondents (30.7%). The least common reason was uncomfortableness in performing the procedure as recorded by 20 respondents (19.8%) (Figure 4b).

Table 5: Association between age range of the respondents and willingness to participate in future special care training done by Chi-Square test.

	X2 value	p value
Age Range in years * category of patients most difficult to treat	12.379	0.98
Gender * category of patients do you find most difficult to treat	6.912	0.546
About respondent * patient referral to specialist	4.713	0.318
Gender * Preference of terminology	0.368	0.544
Age Range in years * Willingness to participate in future special care training courses or workshops	12.234	0.007
X ² value and p value obtained from <i>Chi square test</i> . p value ≤ 0.05 is significant.		

The associations between age range in years (20-60) and the category of patients found most difficult to treat (Psychiatric issues, intellectual disability, physical disability, pregnancy, complex medical conditions, people with more internet knowledge, sensory impairment, geriatric and infectious disease) was not statistically significant with chi square value of 12.379 at P VALUE 0.98. The association between gender (male, female) and the category of patients they found most difficult to treat (Psychiatric issues, intellectual disability, physical

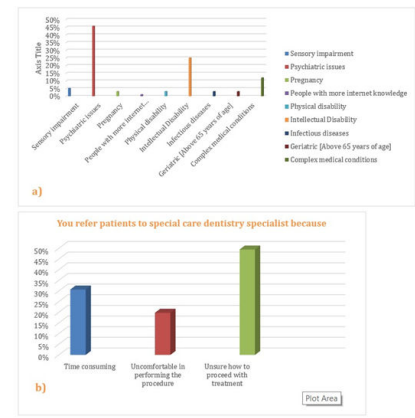


Figure 4: Graphical representation of the patient category that the respondents find difficult to treat and the reason for their referral to special care specialist.

The association between the various parameters and question were assessed using *chi-square test* (Table 5).

disability, pregnancy, complex medical conditions, people with more internet knowledge, sensory impairment, geriatric and infectious disease) was not statistically significant with chi square value of 6.912 at P-value 0.548. The association between PG student, faculty and private practitioner and reason for referring patients to specialists (time consuming, unsure how to proceed with treatment, uncomfortable in performing the procedure) was not statistically significant with chi square value of 4.713 at P-value 0.318. The association between gender

(male, female) and preference of terminology (Special care dentistry, special needs dentistry) was not statistically significant with *chi-square* value of 0.368 at P-value 0.544. The association between age range in years (20-60) and the willingness to participate in future special care training courses or workshops was statistically significant with chi square value of 12.234 at P VALUE 0.007 (p value ≤ 0.05 is significant).

DISCUSSION

Although potential barriers to oral health care for SCD patients have been identified, along with factors that may impede dental practitioners from treating these patients, there may be a difference in motivational factors for treating this population among different groups of practitioners based on the amount of exposure in the dental setting [13]. Hence, we aimed to investigate the Knowledge, attitude and perception of dentists towards special care dentistry in Chennai and to determine the association between age range and willingness to participate in future special care training.

In our study, the maximum numbers of respondents were in the age range of 20-30 years and were aware of the existence of special care dentistry (91.1%). In relation to exposure to special care dentistry, the majority of respondents (76.2%) have not received any SCD training in dental curriculum. This is similar to the findings of previous study done [14]. Where most general dentists did not think their undergraduate dental education had prepared them well enough to treat special needs patients and had they been trained, the more likely they were to treat special needs patients. However, our study differed from this study as 54.5% respondents were postgraduate students. This reason for increased awareness among postgraduates could also be based on their current dental institution of learning.

Also, 63.4% respondents had agreed that SCD patients are time consuming to treat and 25.7% respondents have not treated any special care patients, 69.3% respondents had encountered high incidence of cancellation (or) broken appointments with Special Care patients and 79.2% felt the need for restorative dentistry in special care patients is lesser. The reason for this difficulty in dental care execution was that the access to oral cavity is often restricted by reduced patient tolerance and concentration during clinical work in SCD patients.

Individuals with uncontrollable movements or uncooperative nature with disabling conditions might not tolerate the rubber dam placement and restorative procedures without aid of physical or chemical restraints like sedation. This was reflected in our study as 45.5% and 24.8% respondents felt individuals with psychiatric illness and intellectual disability issues were difficult to treat among various categories of SCD patients. Hence, the most common reason for SCD patient's referral to special care specialists was due to unsureness of how to proceed with treatment for SCD patients according to 49.5% respondents. Also, SCD patients need support from family members for transport to dental settings and

in certain cases need proxy decision making for them which might add to the reasons for high cancellation of appointments.

All the respondents had followed Antibiotic (AB) prophylaxis protocol as per American Dental Association (ADA), American Academy of Paediatric Dentistry (AAPD) and American Heart Association (AHA) guidelines. 83.2% prescribed amoxicillin whereas Clindamycin and Cephalexin were prescribed by 9.9% and 6.9% respondents respectively. This was due to the incorporation of AB protocol learning in the early undergraduate level curriculum where students were made to compulsorily follow during their clinical training.

In other studies, the dental students who had the self-perception of obtained adequate training with regard to management of special care patients had shown to exhibit increased intention to provide comprehensive dental care for these types of patients with willingness to overcome the barriers. [15-17]. Our study results were similar to the findings of other studies [18-23]. In which dentists had shown interest in obtaining training on the management of SCD patients to overcome hurdles in delivering quality care. Our study also agrees with previous study that underscores the importance of combining both, school-based education with didactic sessions and providing students the opportunity to get in personal contact with persons with special healthcare needs [24].

Previous studies had shown that the dentists had limited comprehension of the extra precautionary measures required for implementation of dental procedures in COVID situations. [25-26]. In this study, due to rigorous protocol of the institution attached, 56.4% respondents had agreed that the awareness about Special care specialty in the dental institution had increased after COVID outbreak. 83.2% respondents did not feel discouraged to treat special care patients and 92.1% respondents were willing to learn about Special care patients. It is also encouraging to note that 96% respondents agreed to use the information provided in educational intervention implemented in their dental practice [25,26].

This study also showed that there was an association between age range in years and the willingness to participate in future special care training courses or workshops as it was statistically significant at P-value 0.007 (p value ≤ 0.05 is significant). The respondents had shown their interest in learning more about special care dentistry and were willing to participate in future training for application in their dental practice.

The limitations of this study were lower validity due to close-ended questions with inflexibility, lack of depth and data collected at a single point of time. Also, like all survey studies, respondents might not be fully aware of their reasons for any given answer because of a lack of comprehensive understanding of the gravity of the question asked and sometimes even out of boredom to put effort for clear understanding before honest

answering. Another limitation was the existence of demographic restriction as all respondents were based on Chennai only. Hence multicentre study with responses recorded at different points of time is to be designed in future research studies.

CONCLUSION

Patients with special health care needs have more difficulty in obtaining dental care than any other segment of the population. Health care for special care dentistry patients need trained knowledge obtained through accessory training and also with heightened awareness, focus and acceptable well standard measures beyond routine considerations. This study highlights the shortcomings in our existing dental curriculum as not all dentists had been mandatorily trained in delivering oral health care for special care patients. This can be successfully eradicated by introducing special care dentistry in dental curriculum at the earliest and thereby removing the existing inequality in receiving rightful dental care for special care patients.

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