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Assessing Dental Students' Preparedness and Practices in Managing Special Needs Oral Healthcare.

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KEYWORDS

Dental Curriculum, Special Health Care Needs, Knowledge, Healthcare

ABSTRACT:

The provision of oral healthcare for individuals with special needs demands specialized knowledge, skills, and compassionate care. This study aimed to assess the preparedness and practices of dental students in managing patients with special healthcare needs. A cross-sectional questionnaire-based study was conducted among undergraduate dental students. The questionnaire evaluated knowledge, attitudes, and practices related to special needs dentistry. The findings revealed that while most students demonstrated positive attitudes toward treating special needs patients, there were notable gaps in practical experience and confidence levels. The study underscores the importance of incorporating focused training modules and clinical exposure in the undergraduate dental curriculum to enhance competency in providing equitable oral healthcare for all individuals.

Introduction:

Children with special needs often experience inadequate oral hygiene, resulting in higher rates of dental caries and poor periodontal conditions, raising growing concern among parents and dentists worldwide.[1] Consequently, delivering both primary and comprehensive preventive as well as therapeutic oral health services to individuals with special healthcare needs (SHCN) has become a core component of Pediatric Dentistry. This specialty demands a holistic approach, as patients with impairments often present with complex and diverse requirements. Patients with disabilities often encounter challenges in accessing dental care. Morgan *et al.* (2012) noted that nearly 90% of individuals requiring Special

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Care Dentistry (SCD) could be treated within local or primary care facilities.[2] The American Academy of Pediatric Dentistry (AAPD) emphasizes the individuality of every patient and advocates for the promotion of optimal health outcomes for all, irrespective of developmental disabilities or other special healthcare needs.[3] In a 2022 report, Alamri highlighted that, according to the World Health Organization (WHO), about 12% of the population in developing nations and around 10% in developed nations live with disabilities or special needs.[4] Poor oral hygiene is frequently observed among children with disabilities, often linked to limited motor skills or the side effects of medication. Special Healthcare Needs (SHCN) encompass physical, cognitive, developmental, mental, behavioral, sensory, or emotional conditions that require medical attention, specialized healthcare interventions, or supportive services.[2] Special Care Dentistry (SCD) focuses on delivering oral healthcare to individuals with such impairments, whether physical, sensory, intellectual, emotional, medical, or social, or a combination thereof.[1] Literature further indicates that dentists often show reluctance to provide treatment for patients with disabilities, and the availability of comprehensive dental services for this population remains insufficient.[1]

With the continuous growth of the global population, the demand for dental services among individuals with special needs is also on the rise. Polli *et al.* (2016) highlighted that as life expectancy increases, the requirement for dental care in patients with intellectual disabilities, physical impairments, and social or emotional limitations also expands.[5] The consequences of poor oral health are far-reaching, with evidence showing its impact on the overall health of children with Special Healthcare Needs (SHCN). Current research points to clear health disparities affecting this group. It is also important to recognize that many children with SHCN may not fully understand the value of preventive oral health practices, nor may they be able to cooperate effectively during dental care. For very young children, those with severe conditions, or those residing in care facilities, responsibility for oral hygiene falls on parents or caregivers. This becomes a challenge when caregivers lack adequate knowledge or awareness regarding oral health maintenance. Unaddressed dental issues often worsen due to caregivers' limited ability to recognize oral problems, children's inability to communicate pain or discomfort, and, more critically, restricted access to professional dental treatment.[6]

To date, no research has comprehensively assessed and compared the perspectives of final-year undergraduate students, interns, and postgraduate trainees across different dental specialties concerning the difficulties encountered in managing these children. Closing this knowledge gap is crucial to ensure that children with SHCN receive timely, holistic, and effective oral healthcare.

MATERIALS AND METHODS

TYPE OF STUDY - A cross-sectional study

Site of Study: This present study was conducted in collaboration with various Dental Colleges of Lucknow City. The study focused on all the Undergraduates involved in clinics and Post graduate students of the Clinical Department.

Method of collection of data

a) Duration of study: The following study was conducted from 15th September 2023 to 15th November 2023.

b) Number of Subjects: 546 (Five Hundred and Forty-six students) were selected from different dental institutions of Lucknow city.

c) Sample size: The sample size was calculated using nMaster software (version 2, CMC, Vellore). Since the study involved a finite population (i.e., approximately 4,000 undergraduate BDS students from 3rd and 4th years across dental colleges in Lucknow city), the estimation was carried out using the formula for "Single Proportion with Finite Population Correction." Based on an expected prevalence of 74.4% for readiness to allocate working hours toward the treatment of patients with special healthcare needs, with an absolute precision of 5% and a 95% confidence interval, the required sample size was determined to be 273. Considering the use of a cluster sampling technique, the sample size was further adjusted by applying a design effect of 2.

Thus, the final sample size is decided as **546**.

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Formula:

$$n = \frac{Z^2_{1-\alpha/2}\, p(1-p)}{d^2}$$

where,

p: Expected prevalence = 0.80

d: Absolute precision required on either side of the prevalence = 0.05 or 5%

Z: 1.96

The sample size adjusted for finite population is given by,

N_{Finite}= F X n

where,

F = 1 / 1 + $n/N_{population}$

N = population size = 500

d) Proposed Statistical Analysis: The data were analyzed using the Statistical Package for Social Sciences (SPSS, version 21). Categorical variables were presented as frequencies, whereas continuous variables were expressed as means with standard deviations. Suitable statistical tests were employed for inferential analysis, and a p-value of less than 0.05 was considered statistically significant.

e) Ethical Clearance and Informed Consent: The study protocol received approval from the Institutional Ethics Committee. Participant privacy and confidentiality were strictly maintained, and individual responses were not disclosed at any stage.

Inclusion Criteria:

- Students who had direct interactions with the patients.
- Students who were performing treatment on the patients
- All undergraduate students in their final year BDS and Internship who interacted with patient.
- Postgraduates students from all Clinical Departments in Dentistry.

Exclusion Criteria:

- All the undergraduate dental students of first, second and third year BDS students who do not interact with the patients
- Post-graduate students from the non-clinical departments in dentistry.
- Questionnaires that were not completely filled out were excluded.

METHODOLOGY

PILOT STUDY

To assess the feasibility of procedure and ascertain the applicability of instruments, pilot study was conducted on dental students to assess their attitude, willingness, emotional reaction and social acceptance towards patient with Special Health Care Needs.

SURVEY TOOL DEVELOPMENT

A pre-validated questionnaire adapted from the published study by Kapoor *et al.* (2019) was utilized for data collection. Following consultation with subject experts, minor modifications were introduced to ensure suitability for health professionals.[7] The reliability of the tool was confirmed using Cronbach's alpha, which yielded a value of 0.89. The structured, close-ended questionnaire comprised 32 multiple-choice items designed to evaluate knowledge (8 items), attitude (10 items), and practices (14 items) related to oral health and the management of children with special needs. The questionnaire was distributed among all participant groups, and responses were collected based on voluntary participation. The items were originally derived from the Dental Student Attitude Toward the Handicapped Scale (DSATHS), with the terminology revised—"handicapped" was replaced by "special care patients" and "handicapping conditions" by "special needs." Responses were recorded on a 5-point Likert scale.

SCORING CRITERIA	INFERENCE
1	Strongly Disagree
2	Disagree
3	Neither agree or disagree
4	Agree
5	Strongly Agree

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Further analysis of the attitude section was conducted by categorizing the items into two factors: the first factor (22 items) pertained to students' educational experiences and their perceptions of instructors, while the second factor (10 items) addressed interpersonal interactions and anticipated future engagement with special care patients. The data were computed, organized in an MS Excel spreadsheet, and subsequently submitted for statistical evaluation.

Data Collection

The survey was distributed to dental undergraduates immediately following their lecture sessions, while postgraduate students and interns were approached within their respective specialty departments. Participants were provided with an introduction explaining the purpose of the study and assuring the confidentiality of their responses. The survey began with the following statement: "This survey assesses dental students' attitudes toward patients with disabilities, including physical, mental, or other types of impairments."

RESULTS

This study was carried out in Lucknow to assess the attitudes and practices of dental students regarding the provision of oral healthcare services to patients with special healthcare needs.

For this purpose, five hundred forty-six dentists were sent questionnaire through mail and were asked to fill the form. The result of the present study is discussed in sections described as follows:

Table 1: Demographic Profile of Survey Participants (*n*=546)

		Frequency	Percent
Gender	Females	404	74%
	Males	142	26%
Marital status	Married	37	6.8%
	Unmarried	509	93.2%
Academic year	BDS	257	47.1%
	Intern	110	20.1%
	MDS	179	32.8%

In Table 1: Out of 546 students 47.1% were BDS students, 20.1% were interns and remaining 32.8% were MDS postgraduates. In our study population, 74% were female and 26% were male, with the majority (93.2%) being unmarried.

Table 2: Knowledge Responses Regarding Special Care Dentistry (n=546)

Knowledge responses concerning Special Care Dentistry				
		Yes	Don't know	No
Special care dentistry represents a distinct specialty within the field of dental sciences.	n	329	109	108
	%	60.3%	20.0%	19.8%
Special precautions must be taken when providing treatment to patients with special needs.	n	546	0	0
	%	100.0%	0%	0%
Our curriculum covers lectures that deal with patient with special needs you to deal	n	322	82	142
	%	59.0%	15.0%	26.0%
	n	191	60	295

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Techniques for managing patients with special needs are demonstrated practically in the clinic by experienced faculty.	%	35.0%	11.0%	54.0%
Are you familiar with dental chairs and clinics specifically designed for patients with disabilities?	n	130	82	334
	%	23.8%	15.0%	61.2%

In Table 2: Only 60.3% of students recognized special care dentistry as a distinct field, while 20% were unaware, and 19.8% disagreed. Approximately 59% felt that their curriculum should include lectures on managing patients with special needs, whereas 26% disagreed. Regarding practical training, around one-third of students (35%) agreed that they had been trained in techniques to manage patients with special needs, 11% were unsure, and 54% disagreed. Awareness of specially designed dental chairs and clinics for patients with disabilities was low, with only 23.8% reporting familiarity, and 61.2% did not believe such facilities were necessary. Given the growing demand for specialized dental care and increased public awareness, incorporating Special Care Dentistry into the dental curriculum appears increasingly justified. Importantly, all participants agreed that special precautions should be taken when treating patients with special needs.

Table 3: Knowledge responses concerning Institutional provision for special care patients (n= 546)

Knowledge responses concerning Institutional provision for special care patients				
		Yes	Don't know	No
3a	N	197	105	244
	%	36.1%	19.2%	44.7%
3b	N	226	93	227
	%	41.4%	17.0%	41.6%
3c	N	491	22	33
	%	89.9%	4.0%	6.0%
3d	N	442	22	82
	%	81.0%	4.0%	15.0%
3e	N	96	198	252
	%	17.6%	36.3%	46.2%
3f	N	132	70	344
	%	24.2%	12.8%	63.0%
3g	N	269	66	211
	%	49.3%	12.1%	38.6%
3h	N	344	120	82
	%	63.0%	22.0%	15.0%

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In Table 3 Evaluation of the attitudes of the clinical students, dental interns towards working, facilities provided and setting up a separate waiting room was done. Parking space (36.1%), Interior ramps (41.4%), Wheelchairs (89.9%), Wheelchair lifts (81%), Disabled friendly dental chairs (17.6%), Separate counters and OPD facilities (24.2%), Signs and boards (braille and raised letters) (49.3%), Disabled-friendly toilets (63%). Many agreed on the above facilities being provided to special healthcare needs patient.

Table 4: Repartition of the respondent's self-declared frequency of attitude toward special care patients (n= 546)

Repartition of the respondent's self-declared frequency of attitude toward special care patients					
			Agree	Undecided	Disagree
Factor I: Students educational experience and perception of instructor	My education has taught me to enjoy working with special care patients.	n	109	162	275
		%	20.0%	29.7%	50.4%
	Educators who teach me seem to be well versed in the psychological, social, and emotional characteristics of the special care patients	n	144	115	287
		%	26.4%	21.1%	52.6%
	The educational experiences I have received have really helped me to interact with special care patients	n	86	156	304
		%	15.8%	28.6%	55.7%
	The program for treatment of the special care patients at my school is really good	n	160	160	226
		%	29.3%	29.3%	41.4%
	My instructors seem nervous and reluctant to treat the special care patients	n	37	90	419
		%	6.8%	16.5%	76.7%
	The teachers at my school do not seem to know very much about special care patients	n	546	0	0
		%	100.0%	0%	0%
	My educational experience has taught me tremendous amount about the dental needs of the special care patients	n	180	146	220
		%	33.0%	26.7%	40.3%
	My educational experience has helped me to enjoy being with special care patients	n	81	233	232
		%	14.8%	42.7%	42.5%
	My educational experience has taught me to dislike the special care patients	n	220	147	179
		%	40.3%	26.9%	32.8%
	My educational experience has taught me very little about the dental needs of the special care patients	n	254	113	179
		%	46.5%	20.7%	32.8%
	My educational experience helped me to better empathize with special care patients	n	178	140	228
		%	32.6%	25.6%	41.8%
	My educational experience provided me with a positive attitude toward the special care patients	n	178	104	264
		%	32.6%	19.0%	48.4%
		n	210	53	283

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	My educational experience made me confident to work with special care patients	%	38.5%	9.7%	51.8%
	My educational experience helped me better understand how to treat the special care patients	n	164	87	295
		%	30.0%	15.9%	54.0%
	My educational experience has no helped me to understand special care patients.	n	304	63	179
		%	55.7%	11.5%	32.8%
	My teachers really demonstrate enthusiasm about working with special care patients	n	179	65	302
		%	32.8%	11.9%	55.3%
	My teachers have shown me how to enjoy working with the special care patients	n	182	51	313
		%	33.3%	9.3%	57.3%
	My teachers have not shown me how to respond to the needs of the special care patients	n	312	47	187
		%	57.1%	8.6%	34.2%
	My teachers are not very excited or interested in the treatment of the special care patients	n	313	45	188
		%	57.3%	8.2%	34.4%

In Table 4: Only 20% students agreed that their education had taught them to enjoy working with special care patients whereas 50.4% disagreed. Mostly 54.6% disagreed that educators were well versed in the psychological, social, and emotional characteristics of the special care patients. Nearly, 15.6% agreed that educational experiences had really helped them to interact with special care patients. Only 29.3% students agreed that the program for treatment of the special care patients at their school was really good. Majority of students (76.7%) disagreed that their instructors were nervous and reluctant to treat the special care patients. All participants (100%) felt that teachers at their school did not seem to know very much about special care patient. About 33% agreed that their educational experience have taught them tremendous amount about the dental needs of the patients. Furthermore 40.3% agreed that their educational experience have helped them to enjoy being with patients. Only 32.8% disagreed that their experience has taught them very little about the dental needs of the patients. Majorly 42.8% students disagree that their educational experience helped them to better empathize with patients. Also 48.4% felt that educational experience provided them with a positive attitude toward the patients. About 52.8% disagreed that their educational experience made them confident to work with patients with special healthcare needs. Majorly 54% disagrees that their educational experience helped them better understand how to treat the patients with special healthcare needs. Maximum students (54%) agree that their educational experience did not help them to understand the patients, 55.3% disagreed that their teachers really demonstrate enthusiasm about working with patient with patients with special healthcare needs. Out of the total population 33.3% agreed that their teachers have shown them how to enjoy working with the patients with special healthcare needs. Around 57.1% agrees that their teachers have not shown them how to respond to the needs of the patients. Also, 57.3% students agree that their teachers were not very excited or interested in the treatment of the patients with special healthcare needs.

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Table 5: Repartition of the respondent's self- declared frequency of attitude toward special care patients (n=546)

Repartition of the respondent's self-- declared frequency of attitude toward special care patients					
			Agree	Undecided	Disagree
Factor II: Interpersonal and future interactions with the special care patients	I am not interested in learning anything else about special care patients	n	311	45	190
		%	57.0%	8.2%	34.8%
	In the private office, a separate waiting room could be provided for disfigured patients	n	516	9	21
		%	94.5%	1.6%	3.8%
	Dental services for the special care patients should only be provided in a hospital	n	74	99	373
		%	13.6%	18.1%	68.3%
	The more severe the special needs, the lesser the need for restorative dentistry	n	42	135	369
		%	7.7%	24.7%	67.6%
	When working with the special care patients. I don't care to understand what they are feeling	n	67	64	415
		%	12.3%	11.7%	76.0%
	I care about future dental treatment of the special care patients	n	61	172	313
		%	11.2%	31.5%	57.3%
	Very little sensitivity is required when interacting with the special care patients	n	199	172	175
		%	36.4%	31.5%	32.1%
	Working with the special care patients is a very enjoyable experience	n	331	125	90
		%	60.6%	22.9%	16.5%
	I would not particularly desire special care patients in my practice	n	271	87	188
		%	49.6%	15.9%	34.4%
	Patients with special needs make me uneasy	n	103	172	271
		%	18.9%	31.5%	49.6%
	I dislike working with special care patients	n	164	231	151
		%	30.0%	42.3%	27.7%
	Dental treatment of the special care patients is very discouraging	n	273	87	186
		%	50.0%	15.9%	34.1%
	When working with special care patients, I find it hard to respond to them	n	55	62	429
		%	10.1%	11.4%	78.6%

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In Table 5: Majorly 57 % were not interested in learning anything else about special care patients. Nearly, 94.5% agreed that in the private office, a separate waiting room could be provided for disfigured patients. More than half (68.3%) students disagree that dental treatment to special needs patients be provided in a hospital setting. Majorly 76% students felt that the need to care about the patients and understand their feelings and 60.6% students enjoyed working for patients with special healthcare needs. Almost half of the population felt that working with these patients was discouraging. Only 10.1% population found it hard to respond to them.

DISCUSSION

Disabilities in children with special needs have a significant impact not only on the individuals themselves but also on their families, communities, and the delivery of healthcare services.[8] Providing care to these patients is particularly challenging, as it requires addressing their specific needs while also testing the clinician's professional skills in managing patients who require extensive and careful handling.[9] Special Care Dentistry involves providing dental care customized to the unique needs of patients with disabling medical conditions or psychological limitations, requiring considerations beyond standard practice. Surveys of healthcare providers serve as an important tool for evaluating both healthcare practices and the contexts in which care is delivered.[10] Thus, the current research was a cross-sectional study that aimed at exploring the view of the dental practitioners regarding the provision of oral healthcare to children with special healthcare needs and to identify the barriers and challenges clinicians face in treating this population.[11]

A pre-validated questionnaire with tested reliability was used, employing a Likert scale for scoring, making it a potentially valuable tool for further research in India. This scale is designed to assess opinions, attitudes, or behaviors and consists of a statement or question followed by a series of five or seven response options. Respondents select the option that best reflects their perspective on the statement or question.[12]

According to Joshi *et al.* (2015), the original Likert scale consists of a set of statements related to a real or hypothetical situation under study. Participants indicate their level of agreement with each statement, typically ranging from "strongly disagree" to "strongly agree," using a metric scale.[13] This approach allows respondents to choose from a range of possible answers, making Likert scales particularly effective for capturing the degree of agreement or nuanced feelings regarding a topic.[14] *The results of the present study indicated that over half of the participants (60.3%) recognized special care dentistry as a distinct specialization within dental science, while the remaining participants either were unsure (20%) or disagreed (19.8%).* These results were in accordance with the studies conducted by Poornachitra *et al.* (2022),[6] Kapoor *et al.* (2019).[7] In contrary, the percentage (60.8%) was low as compared to a study done among Australian students (84.4%) and Malaysian students (96.9%) in regards to special care dentistry being a different specialization.[3] As mentioned by Dao *et al.* (2005) increased awareness among postgraduates could be based on their current dental institution of learning. The dental students who had the self-perception of obtaining adequate training with regard to management of special care patients also showed increased intention to provide comprehensive dental care for these types of patients with willingness to overcome the barriers.[13]

All of the participants in our study (100%) agreed that special precautions are to be taken while treating a patient with special needs. In line with the above observation, most interns and final-year undergraduates felt that their dental education had not adequately prepared them to manage patients with special needs, and those who had received training were more likely to treat such patients. However, our study differed, as 54.5% of the respondents were postgraduate students. Additionally, we found that providing care for patients with special healthcare needs (SHCN) requires specific precautions, consistent with the findings of the American Academy of Pediatric Dentistry (AAPD) in 2023.

Patients with special healthcare needs (SHCN) present unique challenges in behaviour management, requiring careful consideration of factors such as developmental stage, educational level, cognitive abilities, and cooperation in clinical settings. Identifying triggers of uncooperative behaviour and applying appropriate calming strategies are essential for effective care. Furthermore, understanding the patient's adherence to routines, ongoing therapies, and any necessary accommodations is critical for optimal treatment delivery.[3]

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Our research underscores the importance of utilizing both basic and advanced behavior guidance techniques when treating patients with SHCN. These techniques enable dentists to navigate the complexities associated with managing this patient population effectively. In certain cases, protective stabilization may be required, especially for patients exhibiting aggressive, uncontrolled, or impulsive behaviors, or when conventional behaviour guidance techniques are insufficient.

However, it is imperative to obtain consent before employing such techniques to ensure the safety and well-being of the patient. The results were in accordance with the study conducted by Namie *et al.* (2020) in which 59% of the participants agrees whereas 26% disagreed that curriculum covers lectures dealing with patient with special needs. Dental institutions are the feeders for the future clinicians that will be managing this population. The continuity of the training from the feeder till the end facilities such as the clinics and hospitals are essential. Dental education has the capacity to bridge the gap between capable clinicians in handling the SCD oral health scenario and the treatment of SCD patients. On the contrary results showed that there is a need to cover lectures in the curriculum.[15]

Therefore, incorporating diverse teaching modalities to train dental students is essential. Kleinert *et al.* (2007) reported that interactive, computer-based multimedia and virtual patient simulations significantly improved both students' knowledge and their perceived difficulty in managing patients with special needs. They suggested that such tools can effectively support accreditation standards, although they acknowledged that teaching communication skills for this patient group remains challenging and that these methods alone may not be sufficient. It is very important, that different teaching methods are considered by all Universities when designing their Special Care Dentistry curriculum.[16]

The techniques to deal with the patient with special needs are being demonstrated practically in the clinic by experienced faculty. The results are in accordance with the study conducted by Special Care Dentistry Association (2018).[16] Behavioural management techniques commonly employed in pediatric dentistry can often be adapted for patients with special needs, particularly those with intellectual disabilities. Positive reinforcement should be provided throughout the procedure, and instructions may need to be repeated depending on the patient's cognitive level. For patients with limited prior dental experience, direct observation—such as watching a video or observing another patient being treated—can be beneficial. Allowing a caregiver to demonstrate procedures and permitting the patient to explore the dental chair, air-water syringes, and lights can help reduce anxiety. Patients who are able to communicate should be encouraged to ask questions.[3]

Tell-show-do and distraction techniques are also effective in managing patients with special needs. The tell-show-do method involves explaining the procedure using language the patient can understand, demonstrating the procedure, and then performing it as described, which helps familiarize the patient with the treatment and sets expectations for the appointment. Alternatively, distraction techniques can divert the patient's attention to something soothing or enjoyable (AAPD, 2019).[16]

Dental chairs have undergone numerous modifications over the years to enhance patient comfort and accommodate special needs. Analysis of various designs indicates that traditional headrests have often hindered comfort. Additionally, transferring patients from a wheelchair to the dental chair can be physically demanding (Paul, 2014). To address these challenges, chairs can be modified to be more disability-friendly while still suitable for general use—for example, by designing a detachable body rest that can be fitted to a ramp structure for general patients and removed for wheelchair users.[5]

Results of the present study depicted that majority of post graduates agreed to the fact that the following services [Parking space, inferior ramps, wheelchairs, wheelchair lifts, Disabled- friendly dental chairs, separate counters and OPD facilities, signs and boards (Braille and raised letters) Disabled- friendly toilets, Sedation/ Anesthesia] should be rendered to the patient with special healthcare needs followed by interns and Undergraduates respectively. These are in accordance with the study conducted by Krishnan et al. (2018). According to Harmonized Guidelines and Space Standards for Barrier Free Environment for Persons with Disability and Elderly Persons (Government of India Ministry of Urban

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Development, 2016) all the mentioned services should be installed in a dental clinic.[1]

A review of the literature indicates that the first dental chair was invented in 1790 by Josiah Flagg. Over time, dental chairs have undergone numerous modifications to improve patient comfort and meet diverse needs. Examination of various designs suggests that traditional headrests have often posed a barrier to optimal patient comfort.[16]

CONCLUSION

In conclusion, the attitudes and practices of dental students in the treatment of special healthcare needs (SHCN) patients reflect a critical aspect of dental education and the broader healthcare landscape. The journey towards providing equitable, compassionate, and effective dental care for individuals with SHCN is multifaceted, requiring a combination of educational initiatives, policy reforms, and shifts in societal perspectives. Through an exploration of the attitudes and practices

of dental students, several key themes emerge, shedding light on both the progress made and the challenges that lie ahead.

In tandem with attitudes, the practices of dental students reflect the application of knowledge, skills, and clinical competencies in the delivery of dental care to SHCN patients. Practical considerations encompass a wide range of factors, including clinical techniques, communication strategies, and interdisciplinary collaboration. Proficiency in adapting treatment protocols, accommodating sensory sensitivities, and managing behavioral challenges are integral components of providing high-quality care to individuals with diverse healthcare needs. Moreover, effective communication with patients, caregivers, and healthcare providers is essential for establishing trust, ensuring informed consent, and facilitating coordinated care across various settings.

However, despite the importance of positive attitudes and practices, dental education and training programs face several challenges in adequately preparing students to care for SHCN patients. Limited exposure to diverse patient populations, inadequate curricular content, and a lack of standardized training protocols are among the barriers that hinder the development of competence in this area. Moreover, attitudinal barriers such as unconscious bias, fear of the unknown, and misconceptions about disability may persist within dental education environments, necessitating targeted interventions to promote cultural humility and foster an inclusive learning environment.

Addressing these challenges requires a multifaceted approach that encompasses educational, institutional, and systemic reforms. Integrating disability awareness and oral health equity into dental curricula, incorporating experiential learning opportunities, and promoting interprofessional collaboration can enhance the preparedness of dental students to serve SHCN patients effectively. Furthermore, fostering a culture of diversity, equity, and inclusion within dental schools and clinical settings is essential for nurturing a workforce that reflects the values of compassion, respect, and social responsibility.

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