



Assessment of Knowledge Attitude and Practice about 'SADE' among Dental Undergraduate Students

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ABSTRACT

Background: The dental setting can be a source of significant anxiety, particularly for individuals with sensory sensitivities, such as those with autism spectrum disorder (ASD) or sensory processing difficulties. Sensory Adapted Dental Environments (SADE) have been developed to reduce anxiety and improve patient cooperation by modifying environmental stimuli. Despite growing evidence supporting their effectiveness, little is known about the awareness and attitudes of undergraduate dental students toward SADE.

Objective: This study aims to assess the knowledge, perception, and attitudes of undergraduate dental students regarding the implementation and importance of sensory-adapted dental environments in clinical practice.

Methods: A cross-sectional survey was conducted among 201 undergraduate dental students from multiple academic years using a structured questionnaire. The survey assessed students' awareness of SADE, their attitudes toward its effectiveness, and their willingness to apply such adaptations in future clinical settings. Descriptive statistics and comparative analyses were used to interpret the results.

Results: While 72% of participants were unfamiliar with the concept of SADE prior to the study, 85% acknowledged its potential benefits after being introduced to its principles. Students expressed strong support for implementing sensory modifications to accommodate patients with special needs. However, many reported a lack of formal training or exposure to SADE practices during their education.

Conclusion: There is a positive attitude among dental students toward the use of sensory-adapted environments, but a significant knowledge gap exists. Integrating SADE concepts into undergraduate dental curricula may enhance students' preparedness to deliver inclusive, patient-centered care.

Keywords: Anxiety, Down Syndrome, Sensory.

Introduction

Dental anxiety is a common issue that affects a significant portion of the population, particularly

among children and individuals with special healthcare needs. Traditional dental environments—characterized by bright lights,

loud equipment, and unfamiliar smells—can be overwhelming and contribute to heightened levels of stress and behavioral challenges during dental visits. To address these concerns, the concept of the Sensory Adapted Dental Environment (SADE) has been introduced as an innovative approach to improve patient comfort and cooperation during dental treatment.

SADE involves modifying the dental clinic environment to reduce sensory overstimulation through elements such as dimmed lighting, calming music, weighted blankets, and visual distractions. These adaptations have been shown to significantly lower anxiety and improve the overall dental experience, especially in patients with autism spectrum disorder (ASD), sensory processing disorders, or severe dental phobia.

As future oral healthcare providers, undergraduate dental students' knowledge, attitudes, and readiness to work in sensory-adapted settings are crucial to the wider implementation and success of SADE in clinical practice. Understanding their perceptions not only helps in identifying gaps in dental education but also informs curriculum development to ensure students are prepared to offer inclusive and patient-centered.

This study aims to assess the awareness, understanding, and attitudes of undergraduate dental students toward the Sensory Adapted Dental Environment and to evaluate their perceived competence and willingness to integrate such modifications into their future practice.

Methodology

Aim: To Assess the knowledge attitude and practice about 'SADE' among Dental undergraduate students.

Objectives

1. To evaluate the level of knowledge among Dental students regarding 'SADE' Based on Year of study.
 2. To evaluate the level of knowledge among Dental students regarding 'SADE' based on gender.
- Study design and area: A cross-sectional study was carried out at Mamata Dental College, Khammam, Telangana.

Study Population: The healthcare students included a total of 201 dental students of all years.

Study Instrument: A protested offline questionnaire was given consisting of 13 questions each participant had to fill in their demographic data like name, gender, age, and year of study. Participants had to select one option from the answers provided against each question.

Sampling Methodology: The Sampling methodology used is convenience Sampling.

Inclusion Criteria: Students who were present on the day of study and were willing to participate are included.

Exclusion criteria: Students who were absent on the day of the study and who did not give their consent were excluded.

Organizing the study: The study was designed in a paper-based version of the self-administered questionnaire of 13 questions focusing on knowledge and awareness includes the sections of demographic data.

Result

A total of 201 students in this study with females 68.7 % males 31.3% AGE of participants ranging from 19 to 24 years in this study females were more likely to demonstrate perception. Significantly interns showed greater familiarity with advanced applications than 1st, 3rd, and 4th year students.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	201	19	24	21.99	1.202

Gender		Frequency	Percent
Valid	Male	63	31.3
	Female	138	68.7
	Total	201	100.0

Year of Study		Frequency	Percent
Valid	I BDS	50	24.9
	III BDS	35	17.4
	IV BDS	60	29.9
	INTERNS	56	27.9
	Total	201	100.0

Distribution and comparison of responses based on gender

Item	Response	Males		Females		Chi-Square value	P value
		n	%	n	%		
Q1	1	53	32.3	111	67.7	2.637	0.451
	2	6	40	9	60		
	3	2	14.3	12	85.7		
	4	2	25	6	75		
Q2	1	3	14.3	18	85.7	6.336	0.096
	2	11	44	14	56		
	3	39	34.5	74	65.5		
	4	10	23.8	32	76.2		
Q3	1	3	30	7	70	4.898	0.179
	2	39	32.8	80	67.2		
	3	10	45.5	12	54.5		
	4	10	20.4	39	79.6		
Q4	1	6	50	6	50	2.656	0.448
	2	23	31.1	51	68.9		
	3	16	33.3	32	66.7		
	4	18	26.9	49	73.1		
Q5	1	9	47.4	10	52.6	2.995	0.224
	2	7	24.1	22	75.9		
	3	47	30.7	106	69.3		
	4	0	0	0	0		
Q6	1	18	28.6	45	71.4	3.023	0.221
	2	25	39.7	38	60.3		
	3	20	26.7	55	73.3		
	4	0	0	0	0		
Q7	1	6	31.6	13	68.4	0.754	0.860
	2	6	24	19	76		

	3	31	31	66	68		
	4	20	20	40	66.7		
Q8	1	6	60	4	40	4.558	0.205
	2	9	32.1	19	67.9		
	3	44	30.3	101	69.7		
	4	4	22.2	14	77.8		
Q9	1	12	60	8	40	13.310	0.001*
	2	47	31.8	101	68.2		
	3	4	12.1	29	87.9		
	4	0	0	0	0		
Q10	1	5	62.5	3	37.5	10.264	0.016*
	2	9	42.9	12	57.1		
	3	41	33.3	82	66.7		
	4	8	16.3	41	83.7		
Q11	1	6	66.7	3	33.3	6.915	0.075
	2	45	31.9	96	68.1		
	3	4	28.6	10	71.4		
	4	8	21.6	29	78.4		
Q12	1	6	66.7	3	33.3	8.745	0.03*
	2	12	21.8	43	78.2		
	3	30	36.1	53	63.9		
	4	15	27.8	39	72.2		
Q13	1	26	32.9	53	67.1	8.505	0.037*
	2	6	50	6	50		
	3	22	38.6	35	61.4		
	4	9	17	44	83		

P≤0.05 is statistically significant

Distribution and comparison of responses based on year of the study

Item	Response	I BDS		III BDS		IV BDS		INTERN		Chi-Value	P-Value
		n	%	n	%	n	%	n	%		
Q1	1	33	20.1	25	15.2	49	29.9	52	31.7	16.874	0.154
	2	8	40	6	30	4	20	2	10		
	3	5	35.7	2	14.3	5	35.7	2	14.3		
	4	4	50	2	25	2	25	0	0		
Q2	1	9	42.9	4	19	3	14.3	3	14.3	35.568	0.001*
	2	11	44	9	16	4	16	5	20		

	3	14	12.4	14	12.4	42	37.2	41	36.3		
	4	16	38.1	42	19	11	26.2	7	16.7		
Q3	1	6	60	6	10	2	20	1	10	15.262	0.227
	2	22	18.5	18	15.1	39	32.8	36	30.3		
	3	9	40.9	2	9.1	5	22.7	5	22.7		
	4	13	26.5	9	18.4	13	26.5	14	28.6		
Q4	1	4	33.3	2	16.7	3	25	3	25	7.305	0.837
	2	18	24.3	11	14.9	26	35.1	16	21.6		
	3	13	27.1	9	18.8	13	27.1	12	25		
	4	15	22.4	13	11.9	18	26.9	25	37.3		
Q5	1	8	42.1	2	10.5	6	31.6	2	10.5	12.662	0.124
	2	11	37.9	10	17.2	9	31	4	13.8		
	3	31	20.3	23	15	45	29.4	50	32.7		
	4	0	0	0	0	0	0	0	0		
Q6	1	18	28.6	8	12.7	26	41.3	10	15.9	12.655	0.124
	2	18	28.6	14	14.3	16	25.4	19	30.2		
	3	14	18.7	13	17.3	18	24	27	36		
	4	0	0	0	0	0	0	0	0		
Q7	1	10	52.6	2	10.5	7	36.8	0	0	22.630	0.031*
	2	6	24	5	20	8	32	6	24		
	3	22	22.7	14	14.4	32	33	28	28.9		
	4	12	20	14	15	13	21.7	22	36.7		
Q8	1	8	80	1	10	0	0	1	10	27.567	0.006*
	2	8	28.6	6	21.4	9	32.1	4	14.3		
	3	27	18.6	22	15.2	48	33.1	45	31		
	4	7	38.9	6	5.6	3	16.7	6	33.3		

Q9	1	10	50	8	15	5	25	2	10	11.931	0.154
	2	29	19.6	22	14.9	47	31.8	46	31.1		
	3	11	33.3	5	15.2	8	24.2	8	24.2		
	4	0	0	0	0	0	0	0	0		
Q10	1	1	12.5	3	37.5	3	37.5	1	12.5	20.541	0.058*
	2	10	47.6	1	4.8	6	28.6	2	9.5		
	3	25	20.3	18	14.6	39	31.7	38	30.9		
	4	14	28.6	13	16.3	12	24.5	15	30.6		
Q11	1	3	33.3	4	44.4	2	22.2	0	0	21.183	0.048*
	2	27	19.1	22	15.6	43	30.5	45	31.9		
	3	4	28.6	1	7.1	5	35.7	3	21.4		
	4	16	43.2	8	8.1	10	27	8	21.6		
Q12	1	3	33.3	2	22.2	2	22.2	2	22.2	3.919	0.985
	2	11	20	9	16.4	17	30.9	16	29.1		
	3	19	22.9	11	13.3	26	31.3	25	30.1		
	4	17	31.5	13	14.8	15	27.8	13	24.1		
Q13	1	12	15.2	12	15.2	24	30.4	27	34.2	17.566	0.130
	2	2	16.7	8	25	5	41.7	2	16.7		
	3	17	29.8	5	8.8	18	31.6	17	29.8		
	4	19	35.8	10	18.9	13	24.5	10	18.9		

P≤0.05 is statistically

Discussion

Sensory Adapted Dental Environments (SADE) have emerged as an effective strategy to enhance dental care experiences for individuals with sensory processing challenges, particularly children with autism. These environments incorporate modifications to reduce sensory stimuli such as bright lights, loud noises, and

strong smells that can cause distress during dental procedures.

Studies have shown that SADE can significantly decrease anxiety and distress in patients by adapting to the physical dental environment using tools such as dimmed lighting, calming music, visual distractions, weighted blankets, and aromatherapy. This not only improves patient

cooperation but also allows dental professionals to perform procedures more efficiently and effectively.

Furthermore, SADE contributes to a more inclusive healthcare model by acknowledging and addressing the unique needs of neurodiverse populations. Implementation of SADE can also positively impact caregivers and parents, who often face difficulties accessing quality dental care for their children with special needs.

Despite the benefits, challenges remain. These include the cost and logistics of retrofitting existing clinics, training dental staff in sensory-friendly practices, and the need for further research into long-term outcomes and standardization of sensory adaptations. More high-quality, controlled studies are needed to fully understand the effectiveness across various patient populations and types of dental procedures.

Conclusion

SADE represents a promising approach to reducing dental anxiety and improving oral healthcare access for individuals with sensory sensitivities, especially children with autism. By creating a calming and patient-centered environment, SADE not only enhances the dental experience but also promotes equity in healthcare delivery. Ongoing research and investment are needed to support widespread adoption and to develop evidence-based guidelines for sensory adaptations in dental settings.

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