International Journal Dental and Medical Sciences Research
Volume 6, Issue 5, Sep - Oct 2024 pp 483-487 www.ijdmsrjournal.com ISSN: 2582-6018

Assess the Knowledge and Awareness of Conscious Sedation as Behavioural Management Technique in Pediatric Dental Setup among Undergraduate Students in Bhopal City

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Submitted: 20-10-2024 Accepted: 30-10-2024

ABSTRACT: AIM : To Assess the knowledge and awareness of conscious sedation as behavioural management technique in Pediatric dental setup among undergraduate students in Bhopal city
MATERIALS AND METHODS: The present cross-sectional study was carried out among 529 undergraduates in Bhopal city. A google form was prepared and an online link was created and shared in different groups. The questionnaire included questions regarding patients indication & contraindication, equipment required, Deciding factor for the use of conscious
sedation, perception of conscious sedation, formal training received, conscious sedation as a valuable technique etc. The questions were structured to assess the knowledge, awareness and towards, perception of conscious sedation among Undergraduates. Students data were collected, readings were tabulated, analysed and the results were obtained.
RESULTS: The result was analysed using SPSS Software. A total 529 studentswere participated in the study among which 172(males) and 357 (females). A total 57.0% of students answered that children with negative Frankel Rating behaviour were indicated for conscious sedation.40.5% answered that patients age and weight were deciding factor for the use of same. 60% answered that oxygen delivery system and pulse oximeter are the equipment used for same .58.2% answered that they need a formal training for inhalation sedation.96.6% answered that conscious sedation can be used as a valuable technique.
CONCLUSION: The present study reveals a limited level of awareness and knowledge about conscious sedation, so it is an attempt to increase knowledge and awareness among undergraduate students as well as to shows that there is a need for dental education institutions to integrate comprehensive training on this technique on a large scale.

KEYWORDS: Survey ,Knowledge , Awareness , Nitrous oxide sedation

I. INTRODUCTION

Intense fear and anxiety related to dental treatment are frequently observed in pediatricpatients, with significant potential for negative impacts like missed appointments, delayed care, and compromised oral health.[1] Evaluating patients' anxiety levels accurately is crucial for managing and treating them effectively during dental procedures.[2] There are two main approaches to address this anxiety: non-pharmacological methods and pharmacological methods, such as conscious sedation using nitrous oxide/oxygen, oral or intranasal sedatives like midazolam, intravenous sedation with midazolam, and general anesthesia.[3]It is important to understand that conscious sedation should not replace behavior-shaping techniques but should be used along side them to reduce fear and anxiety,

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making behavior more manageable.[4] Conscious sedation is defined as a minimally depressed level of consciousness, allowing the patient to maintain an airway and respond to stimuli.[5] The American Academy of Pediatric Dentistry (AAPD) recognizes nitrous oxide/oxygen inhalation as a safe and effective sedation method for anxiety reduction and pain relief during dental procedures.[6]Inhalation sedation is recommended for patients with dental fears, anxiety, special needs, gag reflex issues, difficulty achieving local anesthesia, and cooperative children undergoing lengthy procedures. Therefore, this study aims to evaluate the knowledge and awareness of undergraduates regarding conscious sedation in Bhopal city.[7]

II. METHODOLOGY

The present study was a questionnaire based cross-sectional study carried out among 529 Undergraduates in Bhopal city. The study plan was approved by the institutional ethical committee. A Online google form was prepared and link was sent in different groups. The questionnaire included questions regarding patients indication & contraindication, equipment required, deciding factor for the use of conscious sedation, perception of conscious sedation, formal training received, conscious sedation as a valuable technique etc and the questions were structured to assess the knowledge, awareness and towards, perception of conscious sedation among undergraduates student. Data were collected, tabulated, analyzed and the results were obtained.

III. RESULTS

The result was analyzed using SPSS Software version. A total 529 students were participated in the study among which 172(males) and 357(females). A total 57.0% of students answered that children with negative Frankel Rating behaviour were indicated for conscious sedation.40.5% answered that patients age and weight were deciding factor for the use of inhalation sedation. 60% answered that oxygen delivery system and pulse oximeter are the equipments used for same .58.2% answered that they need a formal training for inhalation sedation. 96.6% stated conscious sedation as a valuable technique (Table 1) &(Table 2)

Table 1: Distribution of knowledge regarding conscious sedation among undergraduates

	Third year	Final year	Interns	Total
Que 1. Have you received any formal training				
YES	12.1%	58.6%	55.0%	41.8%
NO	87.9%	41.4%	45.0%	58.2%
Que 2. What type of patient are indicated for conscious sedation (Frankel Rating Scale)				
Definitely negative	14.3%	39.6%	59.2%	35.3%
Negative				
	85.7%	57.7%	34.2%	62.0%
Both				
	0.0%	2.6%	6.7%	2.6%
Que 3. List potential contraindication for conscious sedation in dental patient				
Respiratory complaints				
	30.8%	54.2%	49.2%	45.0%
Known allergy				
	3.8%	4.8%	6.7%	4.9%
Recent history of substance abuse				
	9.9%	5.7%	5.8%	7.2%
Others				
	43.4%	26.9%	24.2%	31.9%
Combination of 1 and 2				
	12.1%	8.4%	14.2%	11.0%
Que 4.What factors to be considered while deciding the use of conscious sedation in pediatric patients ?				

Anxiety				
	19.2%	26.4%	25.0%	23.6%
Difficulty in co-operating				
	10.4%	22.5%	26.7%	19.3%
Pain management				
	45.6%	21.6%	19.2%	29.3%
Uncomfortable or invasive procedure				
	6.0%	2.6%	5.0%	4.3%
Combination				
	18.7%	26.9%	24.2%	23.4%
Que 5.How familiar are you with dosage and administration routes of common sedative agents used in dentistry ?				
Inhalation				
	25.3%	33.5%	30.0%	29.9%
Oral (by mouth)				
	14.3%	15.0%	15.0%	14.7%
Intramuscular				
	7.7%	3.1%	1.7%	4.3%
Intravenous				
	1.1%	1.3%	0.0%	0.9%
Combination				
	51.6%	47.1%	53.3%	50.1%
Que 6. In your opinion what are the significant benefits of using conscious sedation in pediatric patient?				
Reduced patient anxiety				
	14.4%	18.1%	15.3%	16.2%
Increased efficiency of dental procedures				
	13.3%	13.2%	15.3%	13.7%
Enhanced patient comfort				
	2.8%	3.5%	3.4%	3.2%
Decreased pain perception				
	4.4%	2.2%	1.7%	2.9%
Reduced gag reflex in patients				
	3.3%	2.2%	4.2%	3.0%
Combination				
	61.9%	60.8%	60.2%	61.0%
Que 7. Are you aware of importance of obtaining informed consent from patient undergoing conscious sedation?				
Yes				
	87.4%	74.9%	75.0%	79.2%
No				
	12.6%	25.1%	25.0%	20.8%
Que8. What factors do you consider when deciding to use conscious sedation in pediatric patients?				
Patient's age and weight				
	39.0%	39.2%	45.0%	40.5%
Cooperation level of the child				
	30.2%	27.8%	25.0%	28.0%
Complexity of the procedure				
	10.4%	14.1%	10.0%	11.9%
Previous dental experience of the child				
	7.1%	8.4%	8.3%	7.9%

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Parent/Guardian preference	6.0%	6.6%	4.2%	5.9%
Combination	7.1%	4.0%	7.5%	5.9%

Table 2: Perception of undergraduate students regarding conscious sedation

	Interns	Final year	Third year	Total
Que 1. Do you feel that conscious sedation training provided during your BDS Program adequately prepared you for real world scenarios?				
Yes	87.4%	74.9%	75.0%	79.2%
No	12.6%	25.1%	25.0%	20.8%
Que 2. What are your overall perceptions of conscious sedation as valuable technique in dentistry ?				
Yes	47.3%	94.7%	95.0%	78.4%
No	52.7%	5.3%	5.0%	21.6%
Que 3. Do you think conscious sedation as a valuable technique in dentistry				
Yes	97.3%	94.3%	96.7%	95.8%
No	2.7%	5.7%	3.3%	4.2%
Que 4. Do you think conscious sedation should be a standard part of dental procedures				
Yes	97.3%	90.3%	91.7%	93.0%
No	2.7%	9.7%	8.3%	7.0%
Que 5. Would you be interested in additional training or continuing education related to conscious sedation in pediatric dentistry				
Yes	94.5%	91.2%	94.2%	93.0%
No	5.5%	8.8%	5.8%	7.0%

*=Significant; NS=Not Significant

IV. DISCUSSION

Conscious sedation in pediatric dentistry involves administering medication to help children relax and remain calm during dental procedures while maintaining their ability to respond to verbal cues.[9] It is typically achieved through medications like nitrous oxide (laughing gas), oral sedatives, or intravenous drugs, tailored to the child's age, weight, and medical history.[10] This approach ensures a safe and comfortable dental experience, minimizing anxiety and promoting cooperation for both the child and the dental team.[9,10]

The majority (79.2%) of graduates from BDS course (Bachelor of Dental Surgery), who underwent conscious sedation training, found this training to be effective in preparing them for real-world situations. Conscious sedation is highly valued in dentistry, with approximately 78.4% of the population recognizing its importance. This technique enhances patient comfort, improves treatment outcomes, and promotes access to dental care, all while maintaining a strong emphasis on safety. Among interns, 45.6% cited that anxiety was a reason for using conscious sedation, whereas only 19.2% and 29.3% of third and fourth-year students, respectively, reported anxiety as a factor. Notably, 55.0% of interns reported receiving some formal training, a significantly higher proportion than the 12.1% reported by others. Only, 41.8% reported receiving formal training in the form of CDE, lectures in their institute. Additionally, 62.0% of students believed that children with

negative Frankel Rating scale scores were suitable candidates for conscious sedation. Nearly half (45%) of the participants identified respiratory complaints as a potential contraindication for conscious sedation. A majority (61%) of the total population viewed conscious sedation as beneficial for various reasons. Furthermore, 79.2% of students considered informed consent crucial for conscious sedation procedures.

According to a study by Karthiga Devi G et al. (2017), 37% of dental practitioners lack adequate knowledge about conscious sedation, including various sedative techniques[3]. A similar finding was observed in the current study, where 52% of practitioners were found to have insufficient knowledge regarding conscious sedation.

The current research demonstrated that 94% of undergraduate students are interested in receiving training for conscious sedation. A similar study conducted by Shaikh and Pudi (2023) reported that 92.4% of undergraduates expressed willingness to undergo training for conscious sedation to enhance patient management.[11]

The current research demonstrates that 95.8% of participants see conscious sedation as a valuable technique. The study led by Monisha K (2017), it was discovered that 73% of dental professionals held a favorable view towards conscious sedation.[4]

V.CONCLUSION

The present study reveals the average knowledge and awareness among undergraduates. The level of practise to offer sedation in children among practitioners should increase hence teaching and practise can be done in an undergraduate level. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent dentistry. Improving knowledge and awareness of conscious sedation will not only enhance the safety and efficacy of dental procedures but also contribute to the overall quality of care provided to patients.

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