

PARENTAL AWARENESS AND ACCEPTANCE OF CONSCIOUS SEDATION IN PEDIATRIC DENTISTRY: A CROSS - SECTIONAL STUDY IN MALAPPURAM POPULATION, KERALA

Pedodontics

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ABSTRACT

Introduction: Dental anxiety is frequently encountered among children and often leads to avoidance of dental visits and lead it to deterioration of oral health. Conscious sedation is commonly employed in dental practice to reduce anxiety and improve cooperation, thereby enhancing the overall treatment experience. However, insufficient parental knowledge and awareness regarding conscious sedation may limit their willingness to provide consent for its use in pediatric dental care. **Aim:** The aim of the study is to evaluate the awareness and acceptance of conscious sedation among parents of Malappuram population in Kerala. **Objective:** To evaluate the awareness and acceptance of conscious sedation among parents of pediatric dental patients and to identify sociodemographic and experimental factors influencing their attitude and decision making regarding its use. **Method:** A questionnaire in English/Malayalam was provided to 300 parents who accompanied their child for treatment in the Department of Pediatric and Preventive Dentistry of Educare Institute of Dental Sciences, Chattiparamba Malappuram. The questionnaire comprises of knowledge about conscious sedation, awareness of conscious sedation, previous experience with sedation acceptance levels and demographic details. The questions included both yes or no and multiple choice formats. Some questions were presented as statements and respondents were asked to indicate whether they agree or disagree. **Results:** A total of 300 questionnaires were collected. Although most participants had no prior experience with pharmacological behaviour management technique like conscious sedation. Almost half of them showed a high awareness level towards the use of conscious sedation in dentistry. There is a significant association between children who have undergone conscious sedation treatment and increased level of awareness about the procedure among their parents.

KEYWORDS

Conscious Sedation, Parental Awareness, Paediatric Population

INTRODUCTION

One of the reason children often avoid dental treatment is the anxiety they feel from anticipating pain.¹ According to Malamed, dentistry has historically been associated with fear, anxiety, and pain, though dentists themselves should not be viewed as sources of pain.² Pain is an unpleasant emotional experience initiated by harmful stimuli and mediated through specialized neural networks of cortical and subcortical centers.³ Dental treatment-related anxiety can be managed by non-pharmacological methods such as the tell-show-do technique and desensitization etc. Pharmacological management involves inhalation sedation with a nitrous oxide-oxygen mixture, oral or intranasal sedation with midazolam, intravenous sedation with midazolam, and general anesthesia.

Conscious sedation aims to reduce fear and anxiety to enable dental treatment and is intended as an adjunct to, rather than a replacement for, behaviour-modification techniques.¹ Despite the well-established clinical use of nitrous oxide, there is a lack of data regarding parental awareness and acceptance of conscious sedation. Therefore, the purpose of this study was to evaluate the awareness and acceptance of conscious sedation among parents of paediatric dental patients and to assess the association between sociodemographic factors and parental knowledge regarding conscious sedation.

AIM

The aim of the study is to evaluate the awareness and acceptance of conscious sedation among the parents.

OBJECTIVES

1. To evaluate the awareness & acceptance of conscious sedation among parents of pediatric dental patients.

2. To identify association between socio-demographic factors and knowledge of parents about conscious sedation.

MATERIALS AND METHODOLOGY

A quantitative research methodology was used to collect information regarding demography, existing knowledge, opinion, and its potential benefits in managing anxiety and completing the treatment. The participants were the parents of children aged between 2 and 12 years who reported for dental treatment in the Department of Pediatric and Preventive Dentistry, Educare Institute of Dental Sciences, Chattiparamba, Malappuram. A questionnaire in English or Malayalam was provided to parents who accompanied their children for the treatment. The questionnaire comprised of 17 questions or statements with multiple choice type responses. The questionnaire comprised of knowledge about conscious sedation, awareness about conscious sedation, attitude towards the procedure, and also the basic demographic information such as occupation. A total of 300 participants who fulfilled the inclusion criteria were included in the study.

INCLUSION CRITERIA

Parents of children aged between 2 & 12 years.
Parents from children who were Malappuram population

EXCLUSION CRITERIA

Parents of children aged more than 12 years.
Parents of children who were not from Malappuram population.

The questionnaire was prepared in accordance with previous studies. The questionnaire was pretested to ensure that respondents could understand the questions and respond in a consistent manner. Basic demographic information was collected along with past sedation

experience with categorical response types. Data were entered into a spreadsheet and statistics was generated using SPSS 21.0 for MAC (SPSS Inc. Chicago, IL, USA). Percentage statistics was generated for all categorical variables. Cross tabulations and independent Chi-square statistics were used to examine relationships between categorical variables in the questionnaire. $P < 0.05$ was considered statistically significant.

RESULTS

A total of 300 questionnaires were collected. The characteristics and demographics of the survey study group are shown in Table 1. Regarding the parents highest level of occupation, 28.3% of parents were skilled workers and shop keepers while unemployed parents were 15.7%. Almost 95% of the child patients are free of any systemic disease. Nearly 61% of respondents informed their child had no previous history of dental treatment. Previously sedated children were very few making only 10 % of total patients.

Table 1: Distribution of occupation of participants

Characteristics	N(%)
Parents occupation	
Legislators, senior officials and managers	1(0.3)
Professionals	16(5.3)
Technicians and associate professionals	14(4.7)
Clerks	26(8.7)
Skilled workers and shop	85(28.3)
Skilled agricultural and fishery workers	48(16.0)
Craft and related trade workers	19(6.3)
Plant and machine operators and assemblers	21(7.0)
Elementary occupation	23(7.7)
Unemployed	47(15.7)
Systemic disease of child	
Yes	15(5.0)
No	285(95.0)
Previous History of dental treatment	
Yes	183(61.0)
No	117(39.0)
Previous history of conscious sedation treatment	
Yes	30(10.0)
No	270(90.0)

Awareness questions regarding conscious sedation are summarized in Table 2. About 80.7 % of the parents never heard about conscious sedation behaviour management technique for dental treatment. Approximately 53.3% of parents were unaware that conscious sedation is a safe and commonly used technique in paediatric dental care. Only 39.7% of the parents have the awareness about the potential benefits of conscious sedation, such as managing anxiety. 36.3% of the parents believed that conscious sedation is safer than general anesthesia for minor dental procedures.

About 30.7% of participants knew that conscious sedation enables the child to breathe on their own and respond to commands. 57.7 % of the participants believed that conscious sedation is only needed for uncooperative or anxious children. In our study most of the parents almost 66.3% had an opinion conscious sedation can help make the dental experience less traumatic for their child. Very few patients (18%) expressed fear about conscious sedation could affect their child's future health.

Table 2. Questions regarding awareness towards conscious sedation

SI no	Parents opinion regarding conscious sedation	N(%)
1	Have you heard about conscious sedation in dental procedures?	
	Yes	58(19.3)
	No	242(80.7)
2	According to your understanding conscious sedation	
	Make the child unconscious	49(16.3)
	Keeps the child awakened but relaxed	251(83.7)
3	Are you aware that conscious sedation is a safe and commonly used technique in children?	
	Yes	58(19.3)
	No	160(53.3)
	Not sure	82(27.3)

4	Are you aware of the potential benefits of conscious sedation, such as managing anxiety and completing treatment?	Yes	119(39.7)
		No	181(60.3)
5	Do you believe conscious sedation is safer than general anesthesia for minor dental procedures?	Yes	109(36.3)
		No	54(18.0)
		Not sure	137(45.7)
6	Do you know that conscious sedation allows the child to breathe on their own and respond to commands?	Yes	92(30.7)
		No	104(34.7)
		Not sure	104(34.7)
7	Do you think conscious sedation is only needed for uncooperative or anxious children?	Agree	173(57.7)
		Disagree	127(42.3)
8	Do you believe conscious sedation can help make the dental experience less traumatic for your child?	Agree	199(66.3)
		Disagree	101(33.7)
9	Do you think conscious sedation can affect your child's future health?	Yes	54(18.0)
		No	104(34.7)
		Not sure	142(47.3)

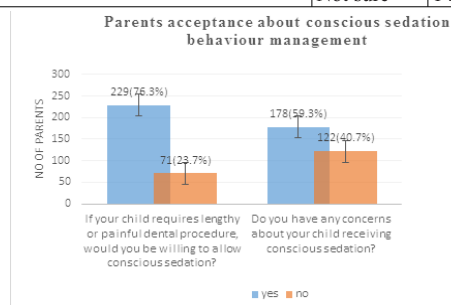


Figure 1. Parent's acceptance toward conscious sedation treatment for their child

Table 3 shows almost 70% of the child patient in this study had a history of conscious sedation treatment. High awareness level about conscious sedation in dentistry was higher among parents whose child had a history of conscious sedation treatment. There was a statistically significant association between high awareness level and previous history of conscious sedation treatment among their child patient.

Table 3: Variables associated with awareness level of parents regarding conscious

SI no	Characteristics	Awareness Level		p value
	Occupation of parent	Low	High	
1	Legislators, senior officials and managers	0(0.0)	1(100.0%)	0.388
	Professionals	8(50.0)	8(50.0)	
	Technicians and associate professionals	3(21.4)	11(78.6)	
	Clerks	13(50.0)	13(50.0)	
	Skilled workers and shop and market sales workers	45(52.9)	40(47.1)	
	Skilled agricultural and fishery workers	26(54.2)	22(45.8)	
	Craft and related trade workers	13(68.4)	6(31.6)	
	Plant and machine operators and assemblers	13(61.9)	8(38.1)	
	Elementary occupation	13(56.5)	10(43.5)	
	Unemployed	24(51.1)	23(48.9)	
2.	Presence of systemic disease for child patient			0.958
	Present	8(53.3)	7(46.7)	
	Absent	150(52.6)	135(47.4)	
3.	History of dental treatment			0.202
	Present	91(49.7)	92(50.3)	
	Absent	67(57.3)	50(42.7)	
4.	History of conscious sedation treatment			0.009
	Present	9(30)	21(70)	
	Absent	149(55.2)	121(44.8)	
5.	Positive attitude towards usage of conscious sedation /acceptance conscious sedation			0.002
	Positive	109(61.2)	69(38.8)	
	Negative	49(40.2)	73(59.8)	

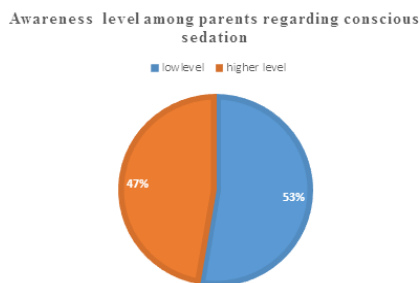


Figure 2. Parent's awareness level toward conscious sedation treatment for their child

DISCUSSION

The interaction among the dentist, child and parent is continually evolving. Parents play a central role in making decisions regarding dental treatment, including the selection of treatment options and the manner in which they are delivered. Moreover, parents significantly influence a child's attitudes and expectations toward oral health through their behaviour and communication. Therefore, it is important to understand which dental treatment techniques are acceptable to parents and to identify the factors that affect their acceptance or rejection of specific approaches.¹

In the present study 36.6% of the participants have a positive attitude towards the pharmacological behaviour management. But in contradictory to our finding a study conducted in Kuwait by Muhammed et al. (2011). most of the school children parents favoured non pharmacological techniques.⁷ Among 300 parents in the present study about 80.7% had limited awareness regarding conscious sedation. These findings are consistent with a study by Bhandari R et al. (2018). which reported that only 3% of the parents had a prior knowledge of the term conscious sedation.¹ In the study about 83.7% believed that the purpose of conscious sedation is to keep the child awakened but relaxed and about 49% believed that the purpose is to make the child unconscious.¹

This finding is inconsistent with the study by Thimmegowda et al. (2024). where initially most of the parents believed that the purpose of conscious sedation was to put the child into a sleep like state similar to the general anaesthesia during treatment.⁶ However, after receiving instructions, the majority of the population strongly disagreed with this belief. A similar study was conducted by Bhandari et al. (2018). shows only 40% parents thought that sedation was used to put the child to sleep during treatment.¹

In a study by Eaton et al., the third most acceptable technique by parents was general anaesthesia. Modern parents are willing to abdicate disciplinary actions and opt for pharmacological techniques.¹⁴ In our study 36.3% believe that conscious sedation procedure is safer than general anaesthesia for minor dental procedures. In the present study about 53.3% of parents did not believe conscious sedation was safe for the children this finding is similar to the study conducted by Thimmegowda et al. (2024) where initially 98.25% parents did not believe conscious sedation was safe for their children. However, following intervention, nearly all participants agreed it was a simple and safe procedure.⁶

CONCLUSIONS

Although most participants had no prior experience with pharmacological behaviour management technique like conscious sedation, almost half of them showed a high awareness level toward the use of conscious sedation in dentistry. There is a significant association between children who have undergone conscious sedation treatment and increased level of awareness about the procedure among their parents. Parents who were unfamiliar with conscious sedation were thoroughly informed about the procedure and its implications. Parents who are already aware of the conscious sedation procedure are identified and utilized as role models to train and guide those unaware.

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REFERENCES

- 1) Bhandari R, Thakur S, Singhal P, Chauhan D, Jayam C, Jain T. Parental awareness, knowledge, and attitude toward conscious sedation in North Indian children population: A questionnaire-based study. *Indian J Dent Res.* 2018 Sep-Oct;29(5):693-7.)
- 2) Oueis HS, Ralstrom E, Miriyala V, Molinari GE, Casamassimo P. Alternatives for hand over mouth exercise after its elimination from the clinical guidelines of the American Academy of Pediatric Dentistry. *Pediatr Dent* 2010;32:223-8.
- 3) Bennett CR. Conscious sedation: An alternative to general anesthesia. *J Dent Res* 1984;63:832-3.
- 4) White J, Wells M, Arheart KL, Donaldson M, Woods MA. A questionnaire of parental perceptions of conscious sedation in pediatric dentistry. *Pediatr Dent* 2016;38:116-21.
- 5) Malamed SF. Emergency medicine in pediatric dentistry: Preparation and management. *J Calif Dent Assoc* 2003;31:749-55.
- 6) Thimmegowda U, Nahyan M, Sathyendra S, Geetha AN, Sreekumar S, Shakuntala BS. Assessment of parental knowledge, attitudes and perceptions towards conscious sedation: a quasi-experimental study. *J Clin Diagn Res.* 2024 Jan;18(1):ZC54-ZC58.
- 7) Muhammad S, Shyama M, Al-Mutawa SA. Parental attitude toward behavioral management techniques in dental practice with schoolchildren in Kuwait. *Med Princ Pract* 2011;20:350-5.
- 8) Murphy MG, Fields HW Jr., Machen JB. Parental acceptance of pediatric dentistry behavior management techniques. *Pediatr Dent* 1984;6:193-8.
- 9) Lawrence SM, McTigue DJ, Wilson S, Odom JG, Waggoner WF, Fields HW Jr., et al. Parental attitudes toward behavior management techniques used in pediatric dentistry. *Pediatr Dent* 1991;13:151-5.
- 10) Alammouri M. The attitude of parents toward behavior management techniques in pediatric dentistry. *J Clin Pediatr Dent* 2006;30:310-3.
- 11) Malamed SF. Emergency medicine in pediatric dentistry: Preparation and management. *J Calif Dent Assoc* 2003;31:749-55.
- 12) Dionne RA, Yagiela JA, Coté CJ, Donaldson M, Edwards M, Greenblatt DJ, et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. *J Am Dent Assoc* 2006;137:502-13.
- 13) Alkandari SA, Almousa F, Abdulwahab M, Boynes SG. Dentists' and parents' attitude toward nitrous oxide use in Kuwait. *Anesth Prog* 2016;63:8-16.
- 14) Eaton JJ, McTigue DJ, Fields HW Jr., Beck M. Attitudes of contemporary parents toward behavior management techniques used in pediatric dentistry. *Pediatr Dent* 2005;27:107-13.