



KNOWLEDGE AND AWARENESS ABOUT THE PRACTICE OF 'CONSCIOUS SEDATION' IN PEDIATRIC DENTISTRY AMONG UNDERGRADUATE DENTAL STUDENTS

Gayathri Krishnan*	Third year Postgraduate student, Department of Pedodontics and Preventive dentistry, Thai Moogambigai Dental College and Hospital, Chennai. *Corresponding Author
Sharanya Ravindran	Senior Lecturer, Department of Pedodontics and Preventive dentistry, Thai Moogambigai Dental College and Hospital, Chennai.
Srinivasan Neduntheru Narasimhan	Undergraduate student, Department of Pedodontics and Preventive dentistry, Thai Moogambigai Dental College and Hospital, Chennai
Joyson Moses	Professor and Head, Department of Pedodontics and Preventive dentistry, Thai Moogambigai Dental College and Hospital, Chennai

ABSTRACT **INTRODUCTION:** Conscious Sedation is a minimally depressed level of consciousness that retains the patient's ability to maintain a patent airway independently and simultaneously respond to physical stimulation and verbal commands.
AIM OF THE STUDY: To evaluate the knowledge and awareness about the practice of Conscious sedation in Paediatric dentistry among undergraduate dental students.
MATERIALS AND METHODS: A questionnaire containing 14 close ended questions assessed the knowledge of 114 undergraduate dental students regarding the practice of conscious sedation in paediatric dentistry.
RESULTS: The study results revealed that , 81.6% of the students had insufficient knowledge to practice sedation in children and they were willing to attend workshops to upgrade their knowledge.
CONCLUSION: The study emphasizes the need for additional workshops to be conducted in the undergraduate dental education curriculum regarding the guidelines and techniques to practice sedation in dentistry.

KEYWORDS : Knowledge, Conscious sedation, dental students, workshops

INTRODUCTION

People with dental anxiety avoid their routine dental care due to their amplified worries or fears. This fear might originate from a previous traumatic dental experience, peer influence or due to other reasons. Dental anxiety can be managed by non-pharmacological methods like behaviour therapy, desensitization or by pharmacological methods like conscious sedation using inhalation sedation (nitrous oxide/oxygen mixture), oral or intranasal sedation , intravenous sedation and general anaesthesia.¹

Conscious sedation is defined as "A technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. " The level of sedation must be such that the patient remains conscious, retains protective reflexes and is able to understand and respond to verbal commands.^{2,3} The sedation of children is different from that of adults while the former is performed to control the behaviour of the child for safe completion of the dental procedure.⁴ The various modes of sedation are inhalation, oral, intravenous and intramuscular. The American Academy of Pediatric Dentistry (AAPD) recognizes nitrous oxide/oxygen inhalation as a safe and effective mode of sedation to reduce anxiety, produce analgesia. Indications for use of nitrous oxide/oxygen analgesia/anoxiolysis include:

1. a fearful, anxious, or obstreperous patient.
2. certain patients with special health care needs.
3. a patient whose gag reflex interferes with dental care.
4. a patient for whom profound local anaesthesia cannot be obtained.
5. a cooperative child undergoing a lengthy dental procedure.⁵

Conscious sedation is an integral practice of Paediatric dentistry. It is

Table I - Response of the students to the Questionnaire

Question	Response	Frequency	Percent	Valid Percent	Cumulative Percent
What do you think is the main advantage of conscious sedation over general anaesthesia?	Minimally depressed level of consciousness	27	23.7	23.7	23.7
	Airway and cardiovascular function are maintained without assistance	39	34.2	34.2	57.9
	Patient is responsive during the procedure	37	32.5	32.5	90.4

definitely necessary that dental students should have an adequate theoretical knowledge and practical experience of basic dental sedation techniques for management of child patients . Thus, the aim of this study was to evaluate the knowledge and awareness about the practice of Conscious sedation in Paediatric dentistry among undergraduate dental students.

MATERIALS AND METHODS

A cross sectional questionnaire based study was conducted among the undergraduate dental students of Thai Moogambigai Dental College and Hospital, Chennai. The study was approved by the institutional review board and ethical clearance was obtained to conduct the study. The participation of the students in the survey was voluntary. The survey was conducted in a random sample of 114 dental students who were pursuing their internship. A self-administered questionnaire containing 14 close ended questions was prepared, checked for its reliability and was distributed among the students. The duly filled questionnaires were collected next day from the respondents. The data obtained in the study was tabulated and subjected to statistical analysis using the statistical package for social sciences (SPSS) software.

RESULTS

All the 114 students who participated in the study revealed that they were aware of the terms " Sedation " and "Conscious sedation" in Paediatric dentistry. Table 1 depicts the responses of the participants for the other queries in the questionnaire which were asked to assess their knowledge and awareness regarding the practice of Conscious sedation in Paediatric dentistry. Overall, 81.6% of the students reported that their knowledge is insufficient to practice sedation in children and they were willing to attend workshops to upgrade their knowledge in the field.

	Recovery rate is fast	11	9.6	9.6	100
Are you aware of the Indications and contra indications of sedation in Paediatric dentistry?	Yes	53	46.5	46.5	46.5
	No	61	53.5	53.5	100
According to Frankel's behaviour rating scale, when do you recommend the use of conscious sedation in children?	Positive child	35	30.7	30.7	30.7
	Negative child	48	42.1	42.1	72.8
	Definitely negative child	31	27.2	27.2	100
What is the commonly employed mode of sedation in paediatric dentistry?	Inhalation	67	58.8	58.8	58.8
	Oral sedation	28	24.6	24.6	83.3
	IM injection	19	16.7	16.7	100
Are you aware of the pharmacological agents used in sedation?	Yes	79	69.3	69.3	69.3
	No	35	30.7	30.7	100
Are you aware of the armamentarium used in sedation?	Yes	45	39.5	39.5	39.5
	No	69	60.5	60.5	100
Do you think it is safe to use sedation in children?	Yes	87	76.3	76.3	76.3
	No	27	23.7	23.7	100
Are you aware of the potential complications of sedation in dentistry?	Yes	62	54.4	54.4	54.4
	No	52	45.6	45.6	100
What do you think is the Common complication of sedation in dentistry ?	Airway obstruction	55	48.2	48.2	48.2
	Anaphylaxis or anaphylactoid reaction	23	20.2	20.2	68.4
	Aspiration	10	8.8	8.8	77.2
	Nausea and Vomiting	26	22.8	22.8	100
Are you aware of the management of medical emergencies in dental office?	Yes	73	64	64	64
	No	41	36	36	100
Do you think your knowledge is sufficient to practise sedation in children?	Yes	21	18.4	18.4	18.4
	No	93	81.6	81.6	100
Are you willing to attend demonstrations or workshops for upgrading your knowledge on the use of sedation in children	Yes	93	81.6	81.6	81.6
	No	21	18.4	18.4	100

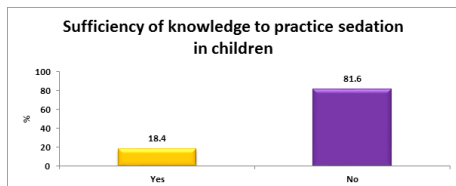


Figure 1 - Sufficiency of Student's knowledge to practice sedation in children

DISCUSSION

Pain and anxiety are crucial elements in dentistry. Evidence has suggested that patients with dental anxiety will benefit from conscious sedation in the performance of their treatments.⁴ All the participants of the present study revealed that they are aware of the terms "sedation" and "Conscious sedation" in dentistry. This finding is similar to the study conducted by Kalaiselvi and Santhosh in 2017 among 120 undergraduate dental students wherein all the participants who took part in the study were aware of the term sedation and its use in dental practice.⁶ Conscious sedation and general anaesthesia are two significant behavioural control techniques employed in paediatric dentistry. On query related to the main advantage of Conscious sedation over General anaesthesia, the maximum response (34.2%) was obtained for the reason that airway and cardiovascular function are maintained without assistance in Conscious sedation.

Regarding the indications and contraindications of sedation in paediatric dentistry, 46.5% of students were aware while 53.5% were not aware of the same. Frankl's Behaviour Rating Scale, developed in 1962 is one of the most widely used behaviour rating scale in paediatric dentistry. It consists of four behaviour categories ranging from definitely positive to definitely negative which are assigned by the

treating clinician and can be applied at various stages during treatment.⁷ When relating to Frankel's behaviour rating scale, conscious sedation is generally indicated to a positive or a definitely positive child.⁸ While in the present study, only 30.7% of students reported that conscious sedation can be performed in a positive child, 42.1% and 27.2% chose the rating ,negative child and definitely negative child respectively. This response shows that the students were actually unaware of the right indications of conscious sedation in children.

In the current study, 58.8% of students were aware that nitrous oxide sedation is the most commonly employed mode of sedation in children and 69.3% were aware of the pharmacological agents used in sedation. Conscious sedation employs a wide array of armamentarium like flow meters, suction catheters, airway equipments, emergency drugs and various other monitoring devices. Only 39.5% of students reported that they are aware of the armamentarium used in sedation practice.

Regarding the safety for the use of sedation in children, 76.3% of students reported that it is safe to use sedation in children. Also, 48.2% of the students in the present study were aware that airway obstruction is the commonly occurring complication in sedation, which occurs mainly due to enlarged tonsils or adenoids in children. Medical emergencies are unexpected and unavoidable circumstances confronted in dentistry and it is mandatory for every dentist to be aware of the management of medical emergencies in the dental operatory. But in the current study, 36% of students reported that they are unaware of the management of medical emergencies in the dental office.

Leitch and Girdler (2000) assessed the quantity and quality of dental undergraduate teaching in conscious sedation in the dental schools of the United Kingdom and Ireland. The conclusions made from the study were that, the students received inadequate hands-on sedation

experience, and the authors suggested that undergraduate sedation training must improve if conscious sedation is to become the principal alternative to general anaesthesia in dental practice.⁹ Similarly, in the present study, 81.6% of students reported that their knowledge regarding the practice of conscious sedation is insufficient and hence they are willing to attend workshops for upgrading their knowledge for use of sedation in children.

CONCLUSION

Conscious sedation, a method with a wide safety margin can be used effectively in managing dental fear and anxiety. This study highlighted the lack of knowledge regarding the practice of conscious sedation in children among undergraduate dental students. The study also exhibited the positive attitude of the students that they displayed for improving their knowledge in the field. Hence, more emphasize should be given in the dental education curriculum regarding the guidelines and techniques to practice sedation in dentistry.

REFERENCES

1. Krishna Priya V et al. Conscious Sedation in Pediatric Dentistry: A Review. *International Journal of Contemporary Medical Research*.2016;3(6).
2. A Conscious Decision: A Review of the Use of General Anaesthesia and Conscious Sedation in Primary Dental Care. Report of a Group Chaired by the Chief Medical and chief dental officer. Department of health (2000)
3. Training in Conscious Sedation for Dentistry. Dental Sedation Teachers Group (2005)
4. Monisha.K, Ashish.R.Jain and Dhanraj. Knowledge attitude and practise on conscious sedation in children among dental practitioners. *International journal of current advanced research*. 2017;6(4):3033-3036
5. Guideline on use of Nitrous Oxide for Pediatric Dental Patients; AAPD Reference Manual. 2009;32:163-5.
6. Kalaiselvi Perumal, Santhosh Kumar MP. Knowledge and Attitude among Dental Undergraduate Students towards Sedation in Dental Practice. *International Journal of Pharmaceutical Sciences Review Research*.2017;44(1):62-65
7. Frankl SN, Shiere FR, Fogels HR. Should the parent remain with the child in the dental operatory? *Journal of Dentistry for children*. 1962;29:150-63.
8. Richard J Mathewson, Robert E Primosh. *Fundamentals of pediatric dentistry*. 3rd edition. Chicago. Quintessence Books. 1995.
9. Leitch JA, Girdler NM. A survey of the teaching of conscious sedation in dental schools of the United Kingdom and Ireland. *Brazilian Dental Journal*. 2000; 188:211-216.