

# Knowledge and attitude regarding the use of conscious sedation for dental procedures among the interns of dental colleges in Chennai city – A cross sectional survey

Yamuna V<sup>1</sup>, Lalithambigai G<sup>2</sup>, Madan Kumar PD<sup>3</sup>

1 Intern,  
Ragas Dental College and Hospital,  
Chennai.  
2 Senior lecturer, 3 Professor and Head,  
Department of Public Health Dentistry,  
Ragas Dental College and Hospital,  
Chennai.

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## ABSTRACT

**Aim:** Conscious sedation is one of the evolving techniques in dentistry. It is useful to deliver treatment to patients without discomfort and it is non-invasive. The use of conscious sedation is found to be increasing day by day in the dental practice. Hence the present study was conducted to assess knowledge and attitude regarding the use of conscious sedation for dental procedures among the interns of dental colleges in Chennai.

**Material and Methods:** A cross sectional web based survey was conducted among 123 interns of various dental colleges in Chennai. A questionnaire was used to collect the data from the study participants by creating a link in Google and responses were obtained. **Result:** Majority (96.7%) were aware that conscious sedation could be used as an alternative technique to achieve anaesthesia in delivering dental procedure. Although 87.8% of them have been taught about conscious sedation in their curriculum, most of them (83.70%) had not assisted dentists/ anaesthetists at the time of delivering conscious sedation. More than two third of the responders have not attended any Continuing Dental Education (CDE) programs regarding conscious sedation. **Conclusion:** Knowledge about the conscious sedation is less among the target population and their attitude for gathering information is high.

**Keywords:** Conscious sedation; Dental Interns; Knowledge; Attitude

## Introduction

Pain is one of the most common barriers that affect patients' behaviour to seek dental treatment. In dentistry there are various techniques ranging from non invasive to invasive, involved daily in the management of pain. Behavioural management and modification starts from the first appointment and includes both non pharmacological and pharmacological pain management methods. The non-pharmacological methods include verbal and nonverbal communications, desensitization, modelling, contingency management, audio analgesia, biofeedback, voice control, aroma therapy, humor, hypnosis, coping, relaxation implosion therapy and aversive conditioning.<sup>1</sup> Although these techniques are feasible, it will consume lot of valuable time of dentist and also have legal implications.

The pharmacological methods include premedication, conscious sedation, local anaesthesia and general anaesthesia. Local anaesthesia is widely used for various dental treatment like extraction of teeth, implant placement, root canal treatment, bone sounding, etc. but it has inherent drawbacks like pain, anxiety, failure to secure complete anaesthesia, needle stick injury, infection, trismus and nerve injury.<sup>2</sup>

Among the other pharmacological methods, General anaesthesia is indicated in patients with certain physical, mental or medically compromising condition, patients allergic to local anaesthesia, patients who have sustained extensive orofacial trauma, fearful, uncooperative and anxious patient.<sup>1</sup> Though the treatment success is high with general anaesthesia, it requires skilled, trained personnels and special equipments with hospital set-up to deliver it.

Due to various limitations in different techniques, a new technique has emerged to deliver successful dental treatment. Patients who have a real fear of dental treatment and those who are faced with the prospect of an unpleasant and possibly distressing procedure rightfully expect less stressful option for sedation. One such technique which was introduced early and gaining popularity in the present day is CONSCIOUS SEDATION.

According to American Dental Association, Conscious Sedation is defined as a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintains an airway and responds appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.<sup>3</sup>

Conscious sedation is indicated in patients who cannot cooperate, patients lacking psychological and emotional maturity and anxious patients. This technique utilizes nitrous oxide or midazolam and depresses the consciousness of the patients which makes dentists to deliver treatment without waste of time and without the demand of hospital set-up. The major limitation of conscious sedation, inspite of its advantages in dentistry, is that it is available only to the hands of trained anaesthetists and also has complications like cardiac arrest, methemoglobinemia and diffusion hypoxia.<sup>4</sup>

Since conscious sedation is riveting, furthering daily and a reassuring technique, its knowledge among the budding dentists is important. Therefore Dental Council of India introduced conscious sedation into the dental curriculum. Yet the live demonstrations and clinical experience are restricted to handful of postgraduate dentists of certain specialities.

Hence it is clearly necessary to find out what young dental students think about the use of conscious sedation in routine dental practice which is still an unanswered question. This has paved way to conduct the present study to assess the knowledge and attitude regarding conscious sedation among interns of various dental colleges in Chennai.

## Materials and Methods

A cross sectional web based questionnaire study was done among the interns of dental colleges in Chennai. The questionnaire containing eighteen questions to assess the knowledge and attitude about conscious sedation was

prepared. An invitational email was sent to ten Dental Colleges in Chennai. The invitational email included a link to the web survey (<http://goo.gl/forms/CZmH6lg7jA>). Voluntary consent was obtained from the responders. Remainder link was sent through email. A total of 300 interns were approached and among them 123 (41%) interns replied and their responses were collected directly in GOOGLE DRIVE. Data was analyzed using SPSS version 11.0 for frequency and percentages. Ethical clearance and permission to conduct the study was obtained from the college authorities.

## Results

In this study, a total of 123 interns participated out of which 20 were males and 103 were females. Table 1 shows the distribution of Dental Interns knowledge and attitude regarding conscious sedation. All responders were aware that local anaesthesia was the commonly used technique to deliver dental care. With regard to the common difficulties faced in various anaesthetic techniques, the options were equally shared by the respondents between anxiety of needle injury, failure to secure anaesthesia and complaints of persistent pain after the injection by the patient.

Majority of responders had come across the term conscious sedation and 87.8% of them have been taught about conscious sedation in their curriculum.

A large number of interns (96.7%) were aware that conscious sedation can be used as an alternative technique to achieve anaesthesia in delivering dental procedure. But among them only three fourth were aware about the applications of conscious sedation in dentistry. Protocol approved by Dental Council of India to use conscious sedation was not known to majority (80.5%) of the study population.

Wide range of confusion exists among the set-up used to deliver conscious sedation because one third opted for hospital set-up only and remaining two third for both clinic and hospital set-up. This confusion also extended regarding persons legally entitled to deliver conscious sedation.

Three fourth of interns (83.7%) have not assisted dentists/anaesthetists at the time of delivering conscious sedation and almost all the responders have not attended any Continuing Dental Education programs regarding conscious sedation. But at the same time many respondents were interested in gathering more information regarding conscious sedation. Among those interested, 68.6% use internet and remaining use textbook as source to gather information about conscious sedation. As to the complication and advantages of conscious sedation, the responders' opinion varied widely.

## Discussion

A key factor in delivering safe, effective, and pleasant dental care lies in efficient management of patient behaviour. It is important for a dental practitioner to perform quality oral health care in an anxious patient by

proper selection of sedation technique amongst the array of various non-pharmacological and pharmacological techniques recommended.<sup>1</sup>

In addition to tailoring various behavioral management techniques (BMT) to the individual patient, it is also important for dental practitioners to utilize techniques consistent with their level of professional education and clinical experience.<sup>5</sup> One such promising technique is conscious sedation which allows a dentist to work quicker and in a more focused manner, diminishing the chance of mechanical error and improving the quality of dental care with lesser dental appointments.

Knowledge of the perceptions of the dentist is useful in assessing awareness and misapprehensions regarding the same. This may serve as a guide for future research and understanding the barriers for using sedation in dentistry. There are very few studies reported worldwide regarding this aspect. Hence the present study assessed the knowledge and attitude regarding the use of conscious sedation for dental procedures among the interns of dental colleges in Chennai city.

Our study showed that Local Anaesthesia was the commonly used technique to deliver dental care to the patients. But it has many drawbacks like anxiety, pain, failure to secure anaesthesia and difficulty in administering it to children. Due to all these road blocks, it was essential to get introduced with and trained with more fascinating, advancing and promising technique – Conscious sedation. Introduction of conscious sedation in medicine especially in the field of dentistry pushes the field to much higher level. This helps to handle the uncooperative patients in easier way with lesser wastage of time.

The present study showed that 87.8% of responders were taught about conscious sedation in their curriculum similar to study done by Kumar VDet al.<sup>6</sup> Though it is present in current dental curriculum, its coverage was not appreciable for the emerging dentists to meet with the challenges, atleast in assisting dentists or physicians while delivering conscious sedation.

About 16.3% of interns have assisted dentists /anaesthetists at the time of delivering conscious sedation which was higher than study reported earlier.<sup>6</sup> In the present study only handful of dentist (4.1%) have attended "Continuing Dental Education" programs regarding conscious sedation. This reveals only a few institutions offer training in conscious sedation in its undergraduate course, in line with the recommendations of the American Dental Association.

To conclude, while the knowledge of students towards conscious sedation is less, the attitude of students in gathering information regarding conscious sedation is on the rise. Hence, in addition to concentrating the various aspects of conscious sedation in curriculum, demonstrations and hands-on procedure as diploma or

short term courses for conscious sedation will give deeper insight and experience to the emerging dentists and better equip them to handle pain in dentistry.

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Table 1: Knowledge and attitude towards conscious sedation among Dentist

Knowledge towards conscious sedation	Gender		Total
	Males (%)	Females (%)	Frequency (%)
Commonly used anaesthetic technique in dentistry			
1. Local anaesthesia	20(100)	103 (100)	123 (100)
2. General anaesthesia	0 (0)	0 (0)	0 (0)
3. Any other	0 (0)	0 (0)	0 (0)
Set up is/are used to treat patients under conscious sedation			
1. Clinic set up	4 (20.0)	6 (5.8)	10 (8.1)
2. Hospital set up	6 (30.0)	39 (37.8)	45 (36.6)
3. Both clinic and hospital set up	10 (50.0)	58 (56.3)	68 (55.3)
Conscious sedation as an alternative technique to achieve sedation in dentistry			
1. Yes	19 (95)	100 (97.0)	119 (96.70)
2. No	1 (5.0)	3 (2.9)	4 (3.3)
Awareness of Protocol prescribed by DCI			
1. Yes	6 (30.0)	18 (17.4)	24 (19.50)
2. No	14 (70.0)	85 (82.5)	99 (80.5)
Persons legally entitled to use conscious sedation to treat patients			
1. Dentists only	0 (0.0)	2 (1.9)	2 (1.6)
2. Anaesthetists only	11 (55.0)	38 (36.8)	49 (39.8)
3. Dentists and anaesthetists	9 (45.0)	63 (61.1)	72 (58.5)
Awareness about conscious sedation applications in dentistry			
1. Yes	9 (45.0)	65 (63.10)	74 (62.20)
2. No	10 (50.0)	35 (33.9)	45 (37.8)
The most common agent used in conscious sedation			
1. Nitrous oxide	18 (90)	89 (86.4)	107 (87)
2. Halothane	2 (10)	14 (13.5)	16 (13)
Interest towards gathering knowledge about conscious sedation			
1. Yes	19 (95.0)	100 (97.0)	119 (96.70)
2. No	1 (5.0)	3 (2.9)	4 (3.3)
Source of information about conscious sedation?			
1. Internet	14 (70.0)	69 (66.9)	83 (68.6)
2. Textbooks	6 (30.0)	29 (28.1)	35 (28.9)
3. Any other	0 (0)	3 (2.9)	3 (2.5)
Complications in delivering dental care to patients under conscious sedation			
1. Diffusion hypoxia	6 (30.0)	32 (31.0)	38 (30.9)
2. Methemoglobinemia	2 (10.0)	10 (9.7)	12 (9.8)
3. Transient amnesia	0 (0)	20 (19.4)	20 (16.3)
4. All the above	10 (50.0)	30 (29.1)	40 (32.5)
5. None of the above	2 (10.0)	11 (10.6)	13 (10.6)
<b>Attitude towards conscious sedation</b>			
Common difficulty while using various anaesthetic technique for the delivery of dental care to the patients			
1. Anxiety of needle injury	11 (55.0)	38 (36.8)	49 (39.8)
2. Failure to secure anaesthesia	6 (30.0)	36 (34.9)	42 (34.1)
3. Patient complaints of persistent pain after the treatment	3 (15.0)	26 (25.2)	29 (23.6)
4. Any other	0 (0)	3 (2.9)	3 (2.4)
Participation of dental students in CDE programs regarding conscious sedation			
1. Yes	0 (0)	5 (4.8)	5 (4.10)
2. No	20 (100.0)	98 (95.1)	118 (95.9)
Assistance for dental procedure done under conscious sedation			
1. Yes	2 (10.0)	18 (17.4)	20 (16.30)
2. No	18 (90.0)	85 (82.5)	103 (83.7)
Conscious sedation is more advantageous than other techniques in dental practice?			
1. Yes	13 (65)	98 (95.1)	91 (74)
2. No	7 (35)	25 (24.2)	32 (26)
If yes, advantages in delivering dental care to the patients?			
1. Useful to treat anxious patients at different ages	3 (15.0)	12 (11.6)	15 (14.4)
2. Non-invasive procedure	0 (0)	7 (6.7)	7 (6.7)
3. Relatively long procedures can be done safely	1 (5.0)	3 (2.9)	4 (3.8)
4. Increases patient comfort	0 (0)	6 (5.8)	6 (5.8)
5. All the above	11 (55.0)	61 (59.2)	72 (69.2)
Technique preferred for anxious children in delivering dental care			
1. Behavioural management like HOME	12 (60.0)	42 (40.7)	54 (43.9)
2. Conscious sedation	8 (40.0)	60 (58.2)	68 (55.3)
3. Any other	0 (0)	1 (0.9)	1 (0.8)