

# Knowledge and Awareness among Dental Practitioners Regarding Current Pediatric Conscious Sedation Practice in the central region of India: A Questionnaire-Based Survey

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## Abstract:

### Aim:

To assess the knowledge, attitude and practice of general and specialist dental practitioners of Nagpur city of Central India regarding current conscious sedation practice in children.

### Materials and Methods:

An online cross-sectional survey was conducted among 200 general and special dental practitioners in Nagpur city. The questionnaire comprising of 19 questions was sent to 200 Dental practitioners in Nagpur, via google form.

### Results:

A total of 200 dental practitioners (43% males, 57% females) voluntarily participated in this survey. Statistical analysis revealed that 73% of dentists felt that there was not enough knowledge and awareness among dentists regarding the use of sedation in clinical practise. Inadequate education and training for sedation are the reasons that 61% of dentists do not perform sedation while 20% faced issues in patient acceptance forum degrowing conscious sedation. Dentists mostly prefer sedation for severe anxiety, mental illness, and medically compromised patients.

Among the survey 63% do not done any sedation practices while 23% had done some kind of sedative practices. 93% of practising dentists preferred inhalation with nitrous oxide sedation. 28% prefer inhalational and local anaesthesia for sedation in children. These figures suggest that there is a lack of formal sedation training among dentists in India

### Conclusion:

Lack of appropriate education and knowledge is one of the main causes for not using sedation as common treatment tool among most dentists. To create more awareness among dentist hands on courses must be done at regular interval and diploma courses should be included.

**Clinical significance-** Scope for dental association to make the Dental practitioners and patients aware and include guidelines and techniques to train the upcoming dentists for excellent practice in paediatric dentistry.

**Keywords:** conscious sedation, children, dental practitioner.

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## I. Introduction:

According to the World Health Organization (2012), dental decay affects 60% to 90% of school-aged children and nearly all adults globally (1). Both children and adults have traditionally found dental treatment to be a frightening experience. The two phenomena of dental phobia and behavioral management disorders (BMP)

are strongly connected. The incidence of dental anxiety among children and adolescents worldwide ranges from about 5% to roughly 24%, according to numerous surveys (2). Increased levels of caries and BMP are linked to dental anxiety; however, not all children with dental anxiety will have BMP. According to one study, BMP was only present in 60% of children with dental phobia (1).

The provision of adequate anxiety control is an integral part of the practice of dentistry. The General Dental Council has indicated that this is both a right for the patient and a duty placed on the dentist. Dental anxiety and fear of dental treatment in children are considered to be the main reasons for management problems and avoidance of dental care (2). These problems sometimes require the replacement of conventional treatment with more complicated alternatives, such as sedation or general anesthesia (GA) (3). Therefore, sedation and analgesia are often essential because dentistry is often strongly associated with fear, anxiety, pain, and apprehension in both children and adults.

Additionally, the treatment of individuals who are both mentally and physically challenged frequently necessitates the use of sedative treatments to alleviate pain and anxiety (4). As a result, the use of sedation as a technique in dental care is becoming more and more crucial, and more practitioners may need to advance their skills in this field. It has been demonstrated that conscious sedation administered orally, intravenously, or inhaled is frequently an efficient and secure substitute for general anaesthesia (GA) (4, 5).

The administration of nitrous oxide (N<sub>2</sub>O) and oxygen (O<sub>2</sub>) for outpatient oral and maxillofacial surgical procedures is a well-recognized and accepted practice. Lytle and Yoon reported that N<sub>2</sub>O was used more frequently than local anesthesia and was second only to O<sub>2</sub> as the most commonly used agent for dental outpatient anesthesia (2). Because of the widespread use of N<sub>2</sub>O, it is not surprising that it has been used in conjunction with intravenous sedation (2).

To the best of our knowledge, there is no information in the literature about the practice of sedation in Nagpur. As such, we developed an electronic survey, sent via Google Form to dentists regardless of speciality, to collect data and information on the scope and many aspects of the sedation services performed in dental offices in Nagpur. We hope that this information can be compared with data reported for other countries and will be of particular use to those in the dental profession, health care workers, patients, and regulatory agencies. Further, as the number of dentists and specialist dental practitioners (SDPs) in different dental specialties in Nagpur has dramatically increased during the last decade, it is hoped that the findings of the present study will shed light on which sedation practices have been adopted in dental colleges and private dental practices and on whether there is consistency in the instructions relevant to this important dental procedure.

#### Population and Methods:

A quick online cross-sectional study was conducted among 200 general dental practitioners in India with approval sought from IEC. The questionnaire was sent to 200 general and special dental practitioners the study objective and questionnaire were sent to pedodontists via "Google Forms". A Questionnaire was prepared and validated. The closed-ended questions were sent to participants to collect responses. There was active participation from all the pedodontists. Data were obtained from the participants using a semi-structured self-administered and validated questionnaire which included details on knowledge, attitude, and practice toward the conscious sedation.

## II. Materials and Methods:

The current study was a cross-sectional survey conducted in Swargiya Dadasaheb Kalmegh Smruti Dental college and Hospital, Nagpur amongst the Dental practitioners in and around Nagpur city to assess their knowledge, awareness and practice of conscious sedation of the children. A nineteen item English-language questionnaire, which was a modified version of the questionnaire was developed and pretested in a group of Pedodontics. The final questionnaire consisted of nineteen multiple choice questions regarding the conscious sedation meant to assess the knowledge. The survey was administered to the dental practitioners in various private and governmental Dental hospitals, clinics, polyclinics in and around Nagpur.

#### Inclusion Criteria:

- Dental surgeons currently working in dental clinic and hospital of Nagpur, Maharashtra (INDIA).

#### Exclusion Criteria:

- Currently not working in any dental practice.
- Clinical experience less than 3 years.
- Undergraduate students not completed their dental course.

## III. Result:

At the end of the survey 200 general and specialist dentist participated. In this study 58% were female and 41% were male; 35% BDS graduate while 65% where the specialist practioners. 60% have less than 5-year practice 24% have 5 to 10 years of practice and 9.7% have more than 10 years of practice 51.5% where practicing in some University or Hospital 35% were practicing in a dental private setup,

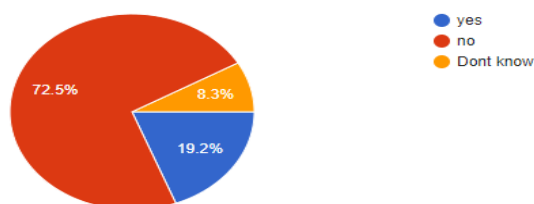
When asked about treating a child 24% choose pharmacological way and 76% choose non pharmacological way to treat child. 76% feel that there is enough Knowledge and awareness among Dentist regarding use of sedation in clinical practice (Dig 1), in which 66% felt that there are issues in provide education and training for sedation at under /Post graduate level (Dig 2).

Most of practitioner preferred sedation in severe anxiety (82%), Physical impairment (45%), medically compromised (55%), Developmental disorder and mental illness (42%) patients followed by patients having Needle phobia (24%), Marked gag reflex (25%), Mild anxiety (19%), Cognitive impairment and Sensory impairment (16%). 64% dental practitioner preferred paediatric dentist over general anesthesia for giving sedation.

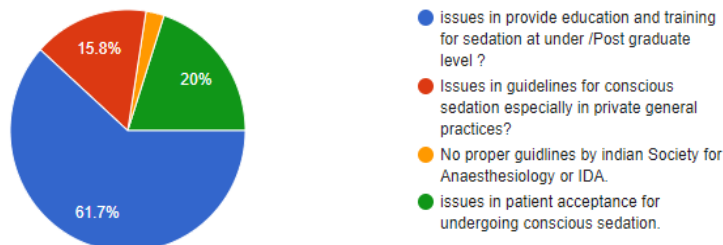
Dentist practising conscious sedation gain knowledge as post graduate program were 82% (19 practioners), whereas 11% practitioner did special course for it. When asked Reason for not practice conscious sedation 80% practitioner stated that they did not obtain any training program in this field. At the end of the questionnaire 99% non-sedation practitioner showed positive attitude for learning and incorporating conscious sedation in their dental practice.

When asked about sedation agent used, 92% preferred N<sub>2</sub>O gaseous with local infiltration in children in the primary care and hospital settings, in which 41 % preferred 70:30 N<sub>2</sub>O:O<sub>2</sub> combination. (Dig-3). Midazolam was drug of choice for 35% practioners.

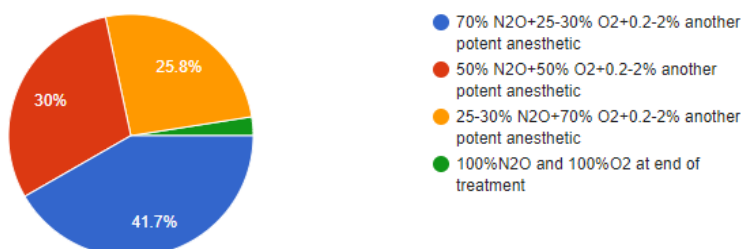
PIE DIAGRAMS –



Dig -1: Do you feel there is enough Knowledge and awareness among Dentist regarding use of sedation in clinical practice?



Dig -2 Issues regarding plans to promote sedation practice.



Dig -3 Commonly used N<sub>2</sub>O sedation is mixture of?

#### IV. Discussion:

Conscious sedation is one of the safest methods for effectively treating dental fear and anxiety. Conscious sedation plays an important role in pediatric dentistry as it provides easy control of the child's behavior during chairside procedures (Nathan 1989).

Our study aims to access the knowledge and awareness of conscious sedation among dental practitioners. In which 58% were female and 42% were male participants, of whom 35% were BDS graduates and the

remaining 75% were specialists. 66% have more than 3 but less than 5 years of clinical practice, 25% have 5-10 years of practice, and 7% have more than 10 years of practice.

In our study, 75% of practitioners say non-pharmacological treatments for behavior management are the best option. Wali A et al. found in their study that the most popular technique for managing children was "tell-show-do," which was reported by 213 (93% of dentists) as their most commonly used behavioral management strategy, followed by 149 (69% of dentists) (3). Alsoleihat F et al. found that the technique dentists were least comfortable with was hand-over-mouth; seven (3%) dental surgeons reported feeling uncomfortable with hand-over-mouth techniques, followed by five (2%) with the papoose board (4).

In our study, 64% have not done any type of sedation practice, while 36% have done sedation, in which 82% received sedation training as part of their post-graduate studies, and among this group, 47% have done additional hands-on courses. This suggests that even though dentists receive some level of training in the use of sedation, many lack the knowledge and confidence to utilize this form of behavioral management.

A lack of education and training in sedation practices is a problem for 66% of respondents, while patient acceptance during unconscious sedation is a problem for 15%. In the study conducted by Monisha et al., 80% of dental practitioners have adequate knowledge, 20% are not aware of conscious sedation, 73% of dental practitioners show a good attitude towards conscious sedation, whereas 27% do not, and 90% of dental practitioners do not practice conscious sedation in children, whereas 10% do. (6,7)

When asked about the selection of patients for sedation, 67% prefer the use of sedation for mild anxiety. 69% used sedation for severe anxiety. Sedation was used in 65% of cases of mental illness. Sedation is used by 51% of medically compromised patients.

In terms of preference for ways of sedation in children, 26% preferred inhalation and local anesthesia; 13% preferred inhalation; and only 12% preferred oral sedation. Inhalation sedation using nitrous oxide is the most recommended choice for conscious sedation in children. Nitrous oxide (N<sub>2</sub>O) is an attractive agent for pediatric procedural sedation because it provides a rapid onset and offset of sedation. Most research has used 50% N<sub>2</sub>O, and there have been concerns regarding the variability of the sedation provided (2). A study done by Sarah et al. reported that only 12 (6%) of the dental surgeons preferred to use nitrous oxide as a behavioral management technique (7). Another study's results reported that 159 (73%) of the dental surgeons were totally comfortable with the nitrous oxide sedation technique (8).

When asked about the concentration of N<sub>2</sub>O<sub>2</sub>, 48% selected 75% n<sub>2</sub>O<sub>2</sub> and 35% o<sub>2</sub> mixture, 30% selected 50% conc of n<sub>2</sub>O<sub>2</sub> and o<sub>2</sub>, and 20% selected 30% n<sub>2</sub>O<sub>2</sub> and 75% o<sub>2</sub>. The study carried out by Kharouba J. et al. shows that when N<sub>2</sub>O concentrations exceed 50%, an anesthetic effect occurs. While 60% and 70% N<sub>2</sub>O concentrations were found to be equally effective, the use of 70% concentration resulted in increased adverse events. Considering these findings, N<sub>2</sub>O at 60% concentration appears optimal, more effective than 50%, and safer than 70% for children who were not cooperative enough to complete dental treatment at 50% concentration (9).

When asked why they were not practicing conscious sedation, 80% said they had received no training in this field, which is dangerous for patients and a costly practice. Patients disagree about the use of sedation in dental practice. poor sedation facilities where the reason is a lack of well-trained assistance or nerves

Only a few of the dental practitioners (29%) have undertaken treatments for patients under conscious sedation. A greater percentage of the dental practitioners do not have any practical knowledge or hands-on experience. A study conducted in 1998 demonstrated the quantity and quality of lectures on conscious sedation in the dental schools of the UK and Ireland for the first time (Leitch and Girdler 2000).

Dental sedation is not typically offered in clinical settings due to perceived inadequacy in sedative knowledge, a lack of equipment, and expense. Also, it has been noted that dentists' lack of sedation understanding affects how they provide and use dental sedation (10). Even though the majority of participants had a reasonable level of sedative expertise, most felt that their understanding of sedation in dentistry was insufficient, hence they did not use it. These results might suggest that the nation's dental practitioners lack confidence in using sedation since they have more theoretical than practical understanding about it (3).

This study may have limitations because it did not include dentists who were involved in administrative tasks and were not actively practising in clinics. Hence, this might have resulted in selection bias, which would have limited the applicability of our findings. However, if clinical practise is taken into account, this survey offers an accurate picture of sedation knowledge and usage in the field of dentistry in the Nagpur district. Despite the fact that the majority of dental practitioners have a rudimentary understanding of sedation in dentistry, this study demonstrates that very few have received rigorous sedation training. In general, little is known about sedatives. The biggest barriers to performing sedation are a lack of equipment, inadequate practical knowledge, and high costs. It is thus recommended that, to overcome this ignorance of sedation in dentistry, continuing professional education programs for dental professionals be organized by the appropriate authorities.

**Limitation:**

Validity of the responses could be biased owing to the respondent's willingness to answer particular questions

**V. Conclusion:**

Regardless of the level of education, the general practitioners of Nagpur lack most of the knowledge required for the use of conscious sedation. Keeping this in mind the present scenario, it was recommended that education regarding conscious sedation should be incorporated in Dental curriculum to increase awareness among practitioners. Also, it is the responsibility of the Dental association to make the Dental practitioners and patients aware of this situation. Dental studies should include guidelines and techniques to train the upcoming dentists for excellent practice in paediatric dentistry.

**Financial or other Competing Interests:**

None

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