

# Perceptions of dentists, dentistry undergraduate students, and the lay public about dental sedation

## Percepção de cirurgiões-dentistas, acadêmicos de odontologia e público leigo sobre sedação em odontologia

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### ABSTRACT

Sedation is an option for controlling fear and anxiety related to a visit to the dentist. The goal of this study was to capture, by means of a questionnaire, the perceptions of twenty dentists, twenty dental students and twenty lay people concerning the use of sedatives in a dental environment. The responses were evaluated using the quantitative-interpretative method. Dentists: 75% had knowledge of sedatives in a dental setting, but their actual use was mentioned by only three. As far as the use of sedatives by dentists is concerned, one considered it "risky" and 19 were favorable. Two affirmed that sedation does not present risks. Eighteen said they would be able to react to a medical emergency. Dental students: 60% said they were aware of the topic, in theory. Nineteen expressed interest in the topic. Fifteen claimed there were risks associated with the technique. Twelve (60%) have the theoretical knowledge to deal with a medical emergency in the dental office. Lay public: Seven (35%) responded that they felt some discomfort during dental treatment, because of fear (n=6) and equipment noise (n=2). Five said they would go to the dentist more often if there was a way to reduce the discomfort. Half of those interviewed indicated that they knew what sedation was. Sixteen favored using it for dental treatment. Seven

thought that there were no risks when sedation is carried out. It was concluded that few participants in any of the three categories felt confident about the topic, though they demonstrated interest. The population in general felt optimistic, while practicing dentists and dental students complained of a lack of exposure to the subject at dental school.

**Uniterms:** Conscious sedation; Social perception; Dental education.

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## RESUMO

A sedação constitui-se em opção no controle do medo e da ansiedade relacionados à visita ao dentista. Propôs-se captar a percepção de 20 cirurgiões-dentistas, 20 acadêmicos de odontologia e 20 leigos sobre a utilização de recursos sedativos em ambiente odontológico, através da aplicação de formulários. As respostas foram avaliadas através de método quantitativo-interpretativo. Cirurgiões-dentistas: 75% tinham conhecimento do uso de sedativos em consultório odontológico, sendo que sua prática efetiva foi mencionada por apenas três. Quanto ao uso de sedativos por dentistas, um considerou "arriscado" e 19 manifestaram-se favoráveis. Dois afirmaram que a sedação não oferece riscos. Dezoito disseram saber reagir frente a emergência médica. Acadêmicos de odontologia: 60% admitiam conhecer o tema, em teoria. Dezenove expressaram interesse no assunto. Quinze afirmaram haver riscos associados à técnica. Doze (60%) tinham o conhecimento teórico para conduta frente a uma emergência médica no consultório. Público leigo: Sete (35%) responderam que sentiam algum desconforto no tratamento odontológico, representado pelo medo (n=6) e o ruído dos equipamentos (n=2). Cinco disseram que iriam mais freqüentemente ao consultório odontológico se houvesse algum meio para reduzir o desconforto. Metade dos entrevistados relatou saber o que é sedação. Dezesseis foram favoráveis à sua realização para tratamento odontológico. Sete julgaram que não há riscos quando se faz sedação. Concluiu-se que poucos participantes, dentro das três categorias, estiveram seguros com relação ao assunto, embora tenham demonstrado interesse. A população em geral sentiu-se otimista, enquanto que CDs e acadêmicos queixaram-se da pouca vivência do tema nas faculdades.

**Unitermos:** Sedação consciente; Percepção social; Educação em odontologia.

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## INTRODUCTION

Sedation of dental patients is a controversial topic in the Brazilian context because it involves the intersection of dentistry and medicine.

While the debate continues about regulating the pharmacological approach to patient behavior<sup>4,6,7,8,9,17</sup> and about the different terms to designate stages of sedation<sup>1,2,3,19,20</sup>, inadequate attention has been paid to stress and pain in the dental office, probably due to the technical bias in professional dental education. Leaving aside nitrous oxide, other forms of sedation, such as oral benzodiazepines, are little used.<sup>18</sup>

Among the many questions that could be asked, it is clearly necessary to find out what dental practitioners and students think about the use of sedatives in their routine practice, as well as the idea lay people have about the subject. This is important in view of the fact that in the culture there is a certain mystique regarding human anesthesiology. In addition, there do not appear to be any studies about this published in Brazil.

Thus, the goal of this study was to study the perceptions of dentists, dental students, and the lay public concerning sedation and analgesia in the dentist's office.

## **MATERIAL AND METHODS**

After approval of the project by the Research Ethics Committee of the Federal University of Goiás (protocol 021/2002) the following were invited to participate in the study (convenience sample): twenty dental surgeons in general practice in offices in Goiania, Goiás. Ten were located in central neighborhoods (five women and five men) and ten in further-out neighborhoods (five men and five women). Twenty dental students were chosen from among students over 18 at the Federal University of Goiás Dental School (four students from each class, first to fifth years). Ten were women and ten were men. Twenty patients without dental training (lay public), over 18, literate, were contacted in the waiting rooms of the Federal University of Goiás Dental School. Those who, for whatever reason, did not fill out the questionnaire completely, dental assistants, denturists, and dental hygienists were excluded from the study.

After having the study explained to them, and after signing an informed consent agreement, each participant received a special questionnaire depending on his category (dentist, dental student, or lay public), including personal data and topical questions - [figure 1](#). The questionnaire was filled out by the subject in the presence of one of the researchers, who was available to answer any questions. For some questions, more than one response was possible. The researchers then picked up the questionnaire, looked it over briefly and explained any question that had remained unclear. At this point the researcher was available to briefly answer questions about the topic.

After the data had been collected, they were tabulated and analyzed using quantitative-descriptive techniques and response frequencies were converted to percentages. Since comparison among groups was not sought, some interviewee quotations were transcribed, providing an example of qualitative research methodology.

## RESULTS

### Profile of the 60 interview subjects

The dentists' ages varied from 23 to 56 years old (mean of 33.4, median of 28). The majority (n=12) had graduated from institutions in Goiás: Federal University of Goiás (n=11) and the Anapolis Dental School (n=1). The others graduated from institutions in the states of Sao Paulo (n=4), Minas Gerais (n=2), and the north/northeast of Brazil (n=2). Time since graduation ranged from 0.7 to 30 years (mean of 9.3 years, median of 5 years).

The dental students, divided among the five years of the Federal University of Goiás dental program, ranged in age from 18 to 27 (mean of 21.4, median of 21.5).

Lay people ranged in age from 19 to 60 years old (mean of 36.4, median of 35.5). Eight had attended or finished elementary school, ten had attended or finished high school and two had attended or finished university. Eight were undergoing dental treatment, eight had undergone it during the last year and the rest had last been to the dentist two years (n=2) or seven years ago (n=2).

### Lack of knowledge about sedation

Knowledge about the subject of sedation was explored in the three subject populations, and general percentage data are available in [Table 1](#).

The fifteen dentists who claimed to have this knowledge produced a total of 23 quotations about the source of this information: undergraduate (n=6) and/or graduate (n=5) classes, continuing education classes (n=4) hospital traineeships (n=4) and through complementary reading (n=4).

Among the students, a yes answer was unanimous among fourth- and fifth-year students, and varied in the other classes. As far as exploration of the topic in dental school is concerned, only nine (45%) recalled any, with the classes cited being pharmacology (n=4), taught in the second year, and the unit in child dentistry (n=4), a fifth-year subject which involves pediatric dentistry (babies), preventive orthodontics and special patients. One student did not indicate where the subject had been covered. However, none of the interviewed students had practiced or observed such a procedure in dental school (100%).

Half of the lay interviewees said they knew what sedation was. Quotations involved medication (n=6), sleep (n=2) unconsciousness (n=1), tranquilizing action (n=4), forgetting (n=1), intravenous administration (n=1), administration by inhalation (n=1) and general anesthesia (n=1). After a brief explanation of sedation by the researcher, six people claimed to have been sedated for an outpatient (endoscopy) or hospital procedure (surgery). It is interesting to point out that half of these people had previously claimed that they did not know the meaning of sedation.

Considering this comment by a 19-year-old female dental student, which is representative of other observations from the questionnaires, there is a general unsureness about this topic, knowledge about which seems superficial and very similar to a layman's: "This subject is not discussed or explained very much in dental

school, which may reduce its importance for practitioners and dental students (...) Some practical experience in the dental school clinics would be necessary.

### **Sedation practice in the dentist's office**

The dentists who actually used sedation in their offices ([Table 1](#)) reported having used oral benzodiazepine in surgical or pediatric dental cases without observing any adverse effects. Among the dentists who reported that they did not use sedation, eight had never felt the need to use sedatives, and four of these did not use them probably because they had not had the appropriate technical training.

The other four dentists who did not see such a need claimed to have knowledge of the subject acquired in undergraduate, graduate, or continuing education classes or complementary reading. They had also not referred patients to specialists trained in this type of intervention. One of these, however, who had been out of dental school for three years, said that "it hasn't been necessary yet." The second, four years after graduation, considered the use of sedatives by dentists as an "alternative method to provide dental care in special conditions." The third, who graduated sixteen years ago, stated that sedation does not offer risks and found its use for special patients "normal and advisable."

The fourth, graduated two years ago, claimed to have had a post-graduate course in the subject and that there are no risks when sedation is performed. In addition, he commented that "we should have better classes in dental school and practical knowledge of the subject."

Looking at some more responses about the need to use sedatives, nine dentists wrote that, while they did not practice the technique themselves, they dealt with cases where sedation was indicated by making referrals (n=3), joint action with the physician (n=2), by using a non-pharmacological remedy such as physical restraint (n=1), or psychological conditioning (n=1) in addition to citing pharmacological resources such as "conventional analgesia" (n=1) and "oral ansiolitic" (n=1).

As far as the use of sedatives by dentists is concerned, the dentists that were favorable ([table 1](#)), predicated its use on: adequate indication for the procedure, (n=11), necessary professional training (n=9), equipment availability (n=3), observation of regulations (n=1), and practice working as a team (n=1). As a dentist of 28 years' standing put it: "I am in favor of the use of sedatives by trained dentists, with technical and scientific knowledge, a specialized team, and adequate equipment and environment."

Most dental students favored the use of sedatives by dentists ([Table 1](#)), to improve treatment (n=5) and patient well being (n=3), but based on a correct indication for sedation (n=5), including uncooperative and/or special needs patients (n=8) and pain control (n=1). This group also mentioned the need for adequate education/training in the use of the technique (n=3) and for an evaluation of the risk of such a procedure (n=2).

Lay people were asked if they felt any discomfort during dental treatment. Seven (35%) responded affirmatively, citing as causes fear of anesthesia, pain, or the drill (n=6), as well as the discomfort caused by equipment noise (n=2): "I'm scared because I think it is going to hurt and I won't be able to stand it" (lay female, 23).

However, only five people said that their number of trips to the dentist would increase if there were some way of reducing discomfort: "Ah, if there were some other way taking care of teeth without that noisy drill and without anesthesia..." (Lay female, 50).

Most laypeople were in favor of dentists' use of sedation ([Table 1](#)), commenting on the ease of treatment in this situation (n=1), the need to use it appropriately (n=5), the need to be treated by a competent professional (n=1), and that it should not cause problems (n=3). Thus, arguments such as the following were raised: "This is a subject that needs to be discussed among the various professionals in the area" (lay female, 35); "I'm only afraid of sedation when it is done by unqualified personnel" (lay male, 40).

### **Sedation risks**

The possibility of risks associated with the sedation procedure was cited by the majority of those interviewed in all three groups ([Table 1](#)).

Since risks in sedation involved emergency measures, dentists and dental students were asked about their competence to act in these situations. Eighteen dentists said they knew how to react in the event of a medical emergency, and that they had acquired this knowledge in class (n=16) or during hospital training (n=4). However, due to the lack of clinical experience in dealing with situations where the life of the patient is at stake, the respondents seemed insecure in their answers. This response from a 23-year-old dentist is representative: "I hope I don't need to actually use my knowledge."

The twelve (60%) students who claimed to know what to do in emergencies reported that their knowledge was merely theoretical (n=8), and that it came through undergraduate work (n=4) and/or from events (n=8), or through complementary reading (n=1).

## **DISCUSSION**

Working in teams is an important focus in all areas of professional activity. However, much needs to be done in terms of attention to health. This study, through a quantitative approach with an interpretive/qualitative focus, attempted to highlight an aspect of anesthesiology applied to dentistry from the human point of view.

An awareness of the perceptions about sedation in dentistry of people potentially involved was useful in identifying questions and misapprehensions inherent in the subject which will be useful as a guide to future research and publications.

The results showed that the level of knowledge about sedation increased following the sequence of lay people to dental students and dentists, and was directly proportional to being in favor of its use and to the notion of associated risks. That is, lay people, for example, tended to know the least about the subject, and were thus not great supporters of the technique, but even so they underestimated its risks.

This view is consistent with the meaning of myth in philosophy: "a form of thought opposed to logical thought and science<sup>14</sup>."

However, there were alarming flaws in the conceptualization of the terms associated with pain and anxiety control in the dentist's office, especially among non-lay people. Moderate (conscious) sedation is defined as the minimum state of consciousness depression, pharmacologically induced, and controlled, which permits the maintenance of protective reflexes, maintains the patient's capacity to keep the airways clear independently and continuously, and permits an appropriate response from the patient to a physical stimulus or verbal command. Analgesia, on the other hand, is the reduction in the ability of the patient to perceive pain as harmful, and does not necessarily induce an altered level of consciousness<sup>1,2,3,19,20</sup>.

For dentists and dental students alike, knowledge about sedation is theoretical, but not grounded in practical training, with the consequent limited experience in pharmacological control of patient fear and anxiety.

It is important to point out that some lay people, who affirmed that they did not know the meaning of sedation, had actually been sedated for medical procedures. This suggests a possible flaw in patient-professional communication. Patients are often subject to techniques whose purpose and even risks they are unaware of.

In this respect, Fleisher, et al.<sup>15</sup> (1999) developed and tested an Anesthesiology Report, containing information about the anesthetic technique and medicines used, which was given to the patient upon release. This resulted in the patient perceiving a better quality of treatment.

As far as the practice of sedation in the dentist's office is concerned, the need for professional competence in carrying out dental procedures under sedation in selected cases was cited by all three categories of participants. Only the dentists mentioned the need for adequate equipment, as well as the need to regulate the procedure and teamwork.

In this aspect, we agree with Ranali<sup>18</sup> (2000), who raised the following points of discussion in reference to this topic: training of the dentist, the danger of using inappropriate equipment and the involvement of teaching institutions having experienced personnel and adequate infrastructure. However, we feel that it is indispensable to add a commitment of dental professional associations in defending responsible activities by dentists.

As far as institutional commitment to teaching is concerned, a large number of dentists and dental students expressed dissatisfaction with the amount of attention given to the topic in undergraduate courses.

At present, it is known that UNICAMP covers inhalatory nitrous oxide sedation in its undergraduate course and that some institutions offer training for dentists in line with the recommendations of the American Dental Association<sup>22</sup>. At the Federal University of Goias, the Pediatric Dental Sedation Study Group (NESO) has existed since 1998 through a partnership between the dental and medical schools.

Physical restraint, cited by some dentists as an alternative to sedation, while culturally accepted in Brazil, in the United States is considered an advanced child-behavior control method in the dental office, as is the use of sedatives. The use of nitrous oxide is categorized as the basic method.<sup>1</sup> This categorization of physical restraint probably has to do with ethical/legal questions regarding child abuse, which are a priority in the United States.

In this study, it was concluded that not all patients who felt discomfort in a dental environment would go to the dentist more often if the reported discomfort or fear were reduced or suppressed. On the other hand, Dionne, et al.<sup>11</sup> (1998), in telephone interviews with 400 Americans, concluded that nearly 30% were to some extent nervous about going to the dentist. These authors also observed that the majority of fearful patients would seek dental care more frequently if conscious sedation or general anesthesia were regularly made available.

Cesar, et al.<sup>5</sup> (1999), on the other hand, observed that 62.8% of their sample had declared that they had not "gone to the dentist" in the previous twelve months, but that "fear of the dentist" was the reason for only 3.2%.

However, fear and pain are strongly associated with the image of the dentist, most markedly for people between 20 and 30. In this age group, the dentist is referred to as a necessary evil, a punishment, and associated with sensations of stress and anxiety. For those over 50, the dentist appears as a better trained professional, probably because these people had experienced the dental care of an earlier period<sup>10</sup>.

The indications for sedative use in dentistry are controversial<sup>24</sup>. One must also be attentive to the contraindications, which may be summarized as cooperative patients with a minimal need for treatment and pre-existing medical conditions which would rule out sedations, such as pregnancy, certain syndromes, obstructive respiratory problems, etc<sup>1</sup>.

Considering adult patients, the routine use of sedatives is limited to impacted third molar surgery, though Yagiela<sup>26</sup> (1999) reminds us that there are many other dental procedures which are stressful for the patient: implants, apicetomies, complex periodontal operations, etc.

Wilson, et al.<sup>24</sup> (2002), in an evaluation of clinical and academic experiences in pediatric dentistry training programs in American dental schools, observed that 1% to 20% of the population treated in these programs needed sedation.

However, Eid<sup>12</sup> (2002), in an important observation, concludes that 99% of child patients treated by post-graduate students in an American university did not need sedation. Among the children from 1 to 5 years old for whom sedation - oral midazolam - was prescribed, the success rate was 70%. Nitrous oxide was only prescribed for individuals eight to eighteen years old in the initial sessions, with non-pharmacological conditioning techniques used thereafter.

Graduates tended to have greater theoretical knowledge of medical emergencies than students. This is most likely due to continuing education courses which dentists have more chance to attend. It is fundamental that undergraduate courses should

offer periodical theoretical and practical training to dental students concerning basic life support.

Considering adverse events possibly related to sedation in a dental environment, the AAPD (American Association of Pediatric Dentistry) reports no cases of death in a pediatric dental practice which correctly followed the determined protocol and guidelines<sup>23</sup>.

However, when the professional does not pay adequate attention to the possible effects of association of sedatives and other aspects which can present risks to the patient, sedation can be lethal, as happened with two American children in dental and medical settings in the last four years<sup>21</sup>.

The picture that emerges from these data - which reflect a particular population sample but with proportional results similar to those of other studies<sup>11</sup> - is one of equivalent insecurity among the dentists and dental students interviewed. We may need to change the way we teach dentistry in view of emerging new tendencies. This would contribute to the transformation of statements such as that of Fontes<sup>16</sup> (1995), for whom "we have a medicine with more than 50 specialties, with each one dealing with a part of a system, or even of one organ (...). The dentist doesn't even imagine that hanging at the end of a tooth there is a human being."

Feigal<sup>13</sup> (2001) expects that health professionals will do their part to provide more humane care, associating healthcare with pharmacological and technological advances and thus improving the necessary procedures and lessening misunderstanding between the professional and the patient and his family.

However, as was mentioned by several study participants and as has been referred to in the literature for some time, it is fundamental to stimulate productive discussion among the different individuals involved, and to place the priority, rather than on progress in healthcare practice, on the human being.

## **CONCLUSIONS**

- There were flaws in the conceptualization of terms association with pain and anxiety control in the dental office by dentists, dental students, and laypeople.
- For dentists, knowledge of sedation was preeminently theoretical.
- Dentists and dental students alike complained of the limited coverage of the subject in dental school.
- Not all patients who felt discomfort in the dental environment would go to the dentist more often if the related discomfort and fear were reduced or eliminated.
- The need for professional competence in carrying out dental procedures under sedation was cited by the dentists, dental students, and laypeople.

- Few participants in any of the three categories were comfortable with the subject, although they demonstrated interest.

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