

# Assessment of Parent's Preference to General or Local Anesthesia for Children undergoing Dental Treatment

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## ABSTRACT

**Background:** Investigators have begun to address the relationship of parental satisfaction with dental care for children since the dentist/physician and the patient are all aware of the services being provided. These determining characters are essential for compliance of the patient, as patient satisfaction is directly related to health-related issues, needs, and practice. Patient satisfaction has an important role in determining the utilization of the healthcare services and the compliance behavior of the patients. Factors which can influence the patients' decision to seek care and follow through to the completion of the treatment process can affect the physiologic and functional outcomes of the treatment. Hence, this survey was done to evaluate parent's preference to general or local anesthesia in their children's dental treatments.

**Materials and methods:** In this survey, a modified and adapted questionnaire from a previously tested survey that was used to assess parental satisfaction with dental treatments under general anesthesia in pediatric dentistry, was used to assess parents' preference to general or local anesthesia. Parents whose children were going to undergo treatments in Department of Pedodontics, Saveetha Dental College, was issued with this questionnaire and clinical examination of teeth present and treatment to be done was examined.

**Results:** Ninety-seven percent of the parents preferred local anesthesia to general anesthesia. Parents preferred general anesthesia most only in case child below the age of 3 and when multiple settings are required of and their knowledge about anesthesia and its side effects was found to low and preferred local anesthesia in most cases.

**Conclusion:** Parents play a unique role in dental care and over all well being of the child. Some parents and dental practitioners prefer the presence of a parent with their child during the delivery of in-office dental care. Parents are aware of their child's previous dental experiences and are also aware of the child's interest and fear. Most of the parent's preference was to local anesthesia (97%) and preferred general anesthesia under given circumstances.

**Keywords:** Children, Dental treatment, Parent's preference.

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## INTRODUCTION

Dental caries, also known as tooth decay, is breakdown of teeth due to the activities of bacteria.<sup>1</sup> The cavities may be a number of different colors from yellow to black.<sup>2</sup> Caries was stated to be high among children in a study which was done in rural India.<sup>3-6</sup> Age group 8 to 10 years showed higher caries than age group 6 to 7 years. Poor oral health, in particular children with chronic illness, can be a risk factor for severe, even life threatening complications. Good oral health and dentition is important for efficient mastication, speaking and of course, cosmetically for smiling. If left untreated, dental caries can lead to pain and infection.<sup>7</sup>

Caries if untreated, may result in aggravated problems, such as pain, suffering, odontogenic infection, early loss of teeth and space loss that might later on require more extensive and expensive treatments.<sup>8-11</sup>

The crucial stages for the development of dental fear occur during childhood and adolescent years.<sup>12-14</sup>

Therefore, an objective of dental care is to lead children step-by-step through the provision of dental care so that they can develop a positive attitude toward dentistry. Dental care for children is usually facilitated by the use of behavioral management techniques coupled with the use of local anesthesia. However, the various behavior management techniques used must be tailored to the individual patient and practitioner. When techniques fail or when treatment needs are extensive, general anesthesia for dental care in children is sometimes necessary to provide safe, and effective treatment.

The paternalistic approach to medical decision-making is moving towards a greater extent. The parents are well educated about the procedures and the local *vs* general anesthesia to be administered.

General anesthesia is the agents that induce various degrees of analgesia; depression of consciousness, circulation, and respiration; relaxation of skeletal muscle; reduction of reflex activity; and amnesia.<sup>15,16</sup> There are two types of general anesthetics, inhalation and intravenous. Studies have revealed that there is a higher preoperative mortality rate in children compared with adults.



Within the pediatric population, preoperative mortality is higher in neonates and infants compared with older children.<sup>17-20</sup> General anesthesia carries a risk of mortality,<sup>21</sup> and is also associated with postoperative morbidity, such as postoperative pain, nausea, vomiting, sleepiness or weakness.<sup>22,23</sup>

Local anesthesia is the drugs that block nerve conduction when applied locally to nerve tissue in appropriate concentrations. They act on any part of the nervous system and on every type of nerve fiber. In contact with a nerve trunk, these anesthetics can cause both sensory and motor paralysis in the innervated area. Their action is completely reversible.<sup>24</sup>

Complication of local anesthesia includes: anesthetic toxicity, postoperative soft tissue injury, allergic reactions, and paresthesia.<sup>25</sup> The aim of this survey is to evaluate the parent's preference of local or general anesthesia for the dental procedures to be done on the children. The opinion of the parents on the anesthesia to be administered on their children and the reason if their preference is to be evaluated.<sup>26</sup>

## MATERIALS AND METHODS

Ethical approval was obtained from the institute. Ethical code is SRB/STUG15/65. The selected population consisted of parents whose children were below the age of 10 years and reported to dentist for general checkup

or children having decay or pain. This research was conducted in Department of Pedodontics, Saveetha Dental College, Chennai, from January 2015 to May 2015. We modified and adapted to a questionnaire from a previously tested survey.<sup>26</sup>

The parents of the children were given the questionnaire. An informed consent was acquired from the parents who agreed to take part in this survey.

After receiving an informed consent from the parents, the parents proceeded with the questionnaire.

The questionnaire included questions, such as name, age, sex, reason for the visit to the dentist, associated medical conditions, parents preference to general or local anesthesia (Appendix 1).

Parent's education and their socioeconomic status were calculated (Kuppuswamy's socioeconomic status scale-updated 2013)<sup>27</sup> to compare their education and socioeconomic status to knowledge and preference of local or general anesthesia.

List of questions was asked regarding their opinion on general or local anesthesia, to judge their knowledge regarding complications of general and local anesthesia and their preference on treatment for the child under anesthesia.

These questions were asked to assess their knowledge about the side effects that could possibly occur after anesthetic and their preference of the treatment.

## Appendix 1

Survey to evaluate the parents preference to general or local anesthesia

Parents name:

Parents age:

Name of the child:

Age/sex:

Parents education:

Parents educational qualification:

Parents work:

Reason for the visit to hospital:

- Routine examination
- Pain
- Referred by pediatrician/general physician

Associated medical conditions

1. Neurological-

If any, mention it below:

2. Respiratory

If any, mention it below:

3. GIT

If any, mention it below:

4. Endocrine system

If any, mention it below:

Do you prefer treatment for your child under general anesthesia or local anesthesia?

If general anesthesia, why?

Contd...

Contd...

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- I expect my child to feel no pain during the general anesthetic
  - Not at all
  - A little
  - Moderately
  - Extremely
  - Do not know
- I expect my child to not remember anything about the treatment
  - Not at all
  - A little
  - Moderately
  - Extremely
  - Do not know
- As the age of the child is below the 3 or 4 years
  - Yes
  - No
- Multiple settings required for the treatment
  - Yes
  - No
- The child not being able to understand, do you prefer the treatment under
  - General anesthesia
  - Local anesthesia
- The child being uncooperative for the treatment
  - Yes
  - No
- Do not want the child to cry during the procedure
  - Yes
  - No
- The child has fear of medical appointments
  - Yes
  - No
- History of unsuccessful dental treatment under local anesthesia
  - Yes
  - No
- I prefer general anesthesia due to trauma
  - Yes
  - No
- In case of minor oral surgery, I prefer general anesthesia
  - Yes
  - No

If local anesthesia, why?

- I expect my child will feel sick after the general anesthesia (nausea/vomiting)
  - Not at all
  - A little
  - Moderately
  - Extremely
  - Do not know
- I expect my child will be in pain after anesthetic
  - Not at all
  - A little

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Contd...



Contd...

- Moderately
- Extremely
- Do not know
- I expect my child will have sore throat after the anesthetic
  - Not at all
  - A little
  - Moderately
  - Extremely
  - Do not know
- I expect my child will be drowsy after the anesthetic
  - Not at all
  - A little
  - Moderately
  - Extremely
  - Do not know

Data collection was done for a total of 63 parents whose children were below the age of 10 years and reported to dentist for general checkup or children having decay or pain to Saveetha Dental College, Chennai. The age group of children that was studied included male and female children from ages between 2 and 10 years.

**RESULTS**

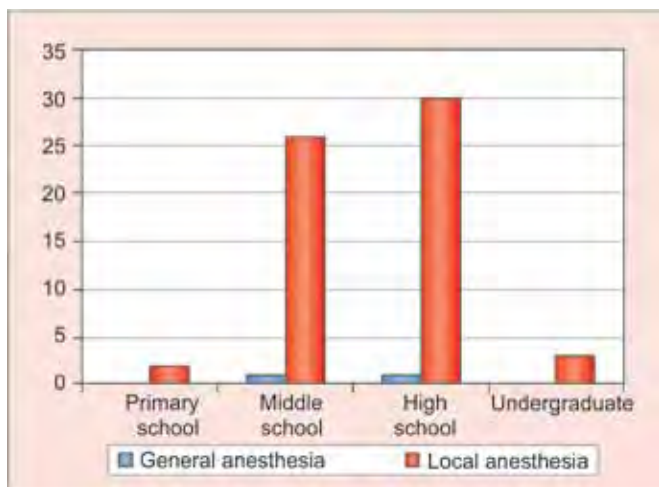
The results showed that most parents who participated in survey were between the age group of 30 to 35 years, 56% of parent's reason for visit to dentist was routine examination for their children. Thirty-one percent of the parents had educational qualification of high school and 34% of the parent's socioeconomic status was upper lower class.

Majority of the parents preferred local anesthesia (97%). Assessment of parent's education and socioeconomic status and their preference to local anesthesia is assessed and represented in Graphs 1 and 2.

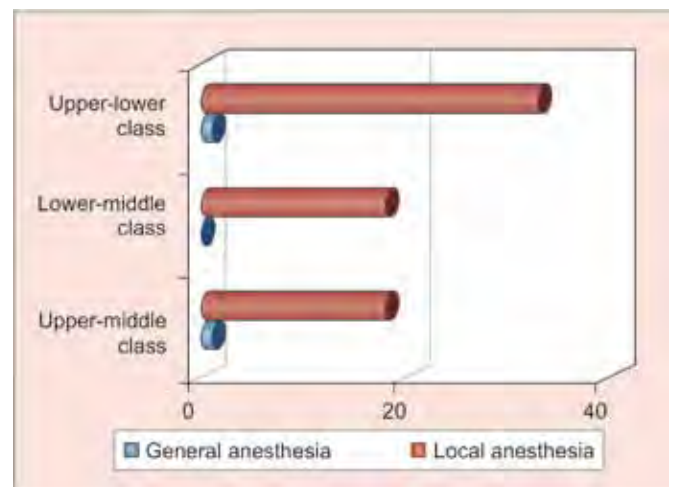
The results reveal that (31%) most of the parents completed high school and their preference was 30% to local anesthesia and 1% to general anesthesia. Lesser number of parents was under the educational qualification of primary school (2%) and their preference was 2% to local anesthesia and none preferred general anesthesia.

Based on their socioeconomic status, most of the parents were categorized under upper lower class 34% and their preference was 33% to local anesthesia and 1% to general anesthesia, least number of parents (11%) who belonged to upper middle class and their preference was 10% to local anesthesia and 1% to general anesthesia.

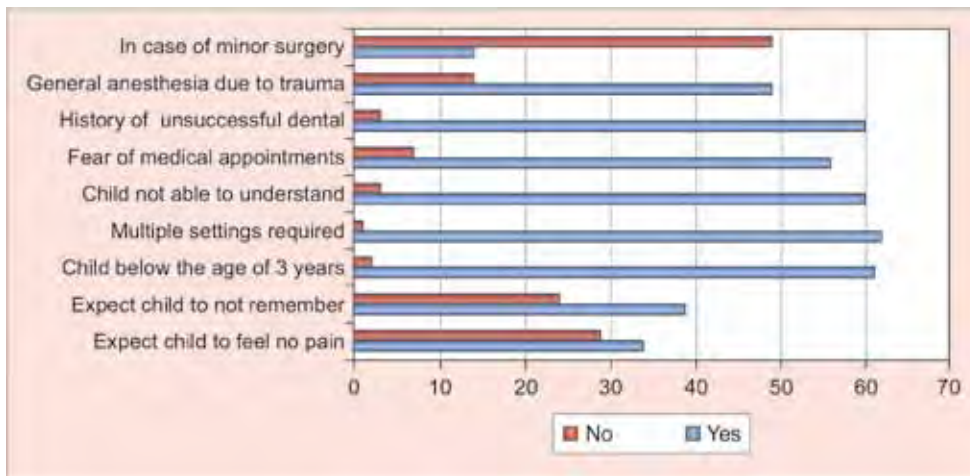
On assessing parent's opinion to treatment under general anesthesia, parent's preferred general anesthesia if the child was presented with specific conditions, if not the parents preferred local anesthesia to minimize the side effects and felt the children were more cooperative to be treated under local anesthesia. Graph 3 represents the nine questions that helped in assessing the parent's



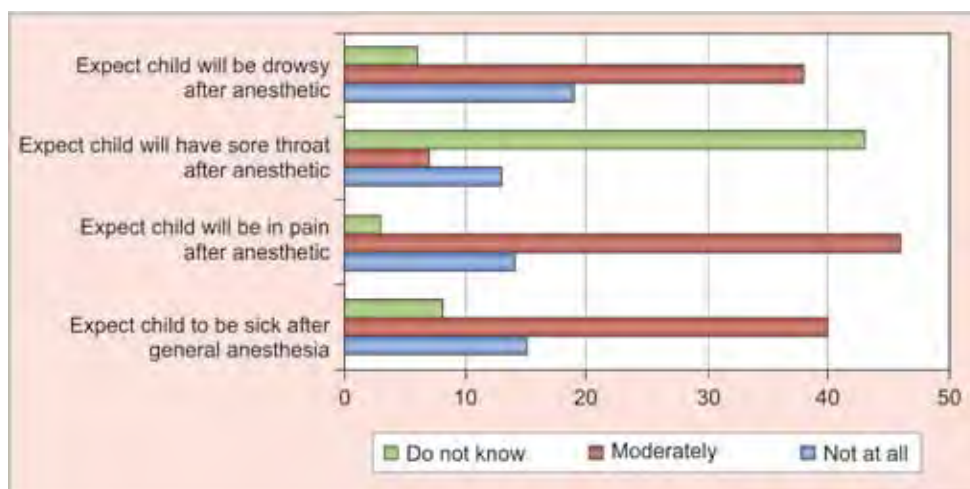
**Graph 1:** Parent's education to parent's preference to general or local anesthesia



**Graph 2:** Parent's socioeconomic status to their preference to general or local anesthesia



**Graph 3:** The nine questions that help in assessing the parent’s preference to general anesthesia under which condition the most preferred general anesthesia



**Graph 4:** The questions asked under local anesthesia

preference to general anesthesia for the condition which the most preferred general anesthesia.

Graph 4 represents the questions that were used to assess parent’s knowledge about the treatment and side effects of general anesthesia. The main reason for preference under local anesthesia was found that the child would have pain 73% after the recovery from the anesthesia.

**DISCUSSION**

Caries in children aged less than 6 years is a rapid and progressive disease that can be painful and increases the likelihood of poor child growth, development and social outcomes.<sup>28-33</sup> Canadian surveys have shown that by 5 years of age approximately 30% of children have had one or more teeth with dental decay, of which approximately 7% of the children required urgent care.

In this survey on parents preference to general or local anesthesia for their child’s dental treatment, it is revealed that 97% of the parents prefer local anesthesia, similar

results were found in a study done on parents preference to local anesthesia, parents preferred local anesthesia over complete sedation under the clinical circumstances.<sup>34</sup>

Surveys have shown that by 5 years of age approximately 30% of children have had one or more teeth with dental decay, of which approximately 7% of the children required urgent care.<sup>35</sup> Statistics demonstrated that in 1992, 39% of emergency dental visits were in Dental Department of Montreal Children’s Hospital were due to severe dental decay and 70% of these visits were children in the age group of 1 to 5 years.<sup>36</sup> Schwartz (1994) also found that this age group contained 70% of the cases of toothaches and 48% of the cases of dental infections caused by dental caries. This survey on parent’s preference also reveals that 52% of children were below the age group of 5 years.

With the growing awareness of the parents and the availability and accessibility of information, the satisfaction of parents plays a crucial role in the healthcare domain. It is imperative to understand that parents visit a dentist to get relief from the physical discomfort of





their child's dental pain and to treat the obvious dental disease and therefore agree for the general anesthesia to carry out dental procedures.

In a study that was conducted in 2008, physicians indicated that patient socioeconomic status and educational qualification did affect their clinical management decisions. And as a result, physicians had to commonly undertake changes to their management plan in an effort to enhance patient outcomes, but they experienced numerous strains when trying to balance what they believed was feasible for the patient with what they perceived as established standards of care.<sup>37</sup> Thus, socioeconomic status and educational qualification of the parents played a major role in treatment decisions and outcome for their children medical care. In this study, most data collected were parents whose educational qualification was completion of high school and most preferred for their children's treatment to be under local anesthesia.

In a study conducted on parental educational and children's health, a strong positive association between parental socioeconomic status and child health was found to be recorded. In this study on parent's preference to general or local anesthesia, parent's socioeconomic status was recorded and most of the parents who participated in this study were of upper lower class and they preferred local anesthesia and preferred general anesthesia only under specific conditions.

## CONCLUSION

Ninety-seven percent of the parents preferred local anesthesia and preferred general anesthesia only under given conditions, such as child below the age of 3 years and multiple setting was required. Whatever the decision is, either to include or exclude the parent based on individual analysis of the child's behavior, it should be explained to the parent and other members of the healthcare team to prevent miscommunication and parental dissatisfaction. The decision to include the parent should be based upon the ultimate goal of achieving positive behavior of the child and delivering safe and quality dental treatment.

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