



# Managing Challenging Child Behaviour in Pediatric Dentistry Using Pharmacologic Approaches: A Vanishing Art

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**Mini Review**

**Volume 9 Issue 1**

**Received Date:** December 29, 2023

**Published Date:** January 17, 2024

**DOI:** [10.23880/pnboa-16000186](https://doi.org/10.23880/pnboa-16000186)

## Abstract

Amongst the skills and competency expected of the pediatric dental specialist is an enhanced ability to circumvent and obtund interfering and refractory behaviour of moderately to severely apprehensive and resistive children. Wide variation exists among this specialist with respect to individual talents to accomplish treatment on this population making use of both non-pharmacological as well as pharmacological approaches. While advanced training programs vary greatly in the extent to which their residents are exposed to various modalities, likely explanation to account for such lies in the diversity to which their faculty bring competent and diversified experience. Some bring extensive background to the use of a variety of agents and dosing; others conceivably offer limited exposure to residents by not having had extensive use during their own training programs. Expertise and a propensity to include a broad repertoire of agents and modalities by Program Directors is highly variable. External sources include administrative perspectives, safety records, formulary limitations, and biases of state and regulatory agencies as to what agents and regimens impose restrictions on this teaching experience. This editorial expresses observations of this author over the past 40 plus years concludes that the use of pediatric sedation has diminished to the extent that its safe and successful use is at risk of becoming a vanishing art. The end result is that an increasing number of children by virtue of a lack of skilled clinicians in its safe use will be subjected to excessive if not unnecessary use of unconscious techniques and/or physical restraint.

**Keywords:** Pediatric Sedation; Efficacy; Obstacles to its Success

## Introduction

The proficient and safe use of oral sedation to overcome moderate to severe dental anxiety/ resistance has made great strides since the early 1980s. Since recognition of its complexity and demands for the implementation of safety measures inclusive of extensive patient monitoring, a great deal has been learned to enhance its effectiveness. That said, the ability of the clinician to determine what agent and dosing best fits a given patient's level of apprehension, temperament

and demands of a given visit is key to the successful use of sedation. The challenge of knowing what to use and how much for a given patient has become largely more an art than science. The literature is replete with largely anecdotal and retrospective data. However, analysis of objective evidence to support dosage schedules that demonstrate predictable outcomes apart from manufacturer's recommendations is rarely found [1]. This author has come across but a handful of well-designed and prospective studies which make use of appropriate subject selection, adequate sample size, and

objective patient behavioural and physiologic response measurements to pinpoint what works and what does not in the pediatric population. Since 1985, guidelines for the elective and safe use of in-office sedation have been presented by numerous disciplines. Almost on an annual basis, such guidelines have been revised as new information becomes available. To date, while laudable, proposed methods and measures to evaluate and insure compliance in both institutional and private settings of sedative techniques, their recommendations and precautions have yet to be established nationwide. Manpower, progress and time dedicated to accomplish these endeavours poses understandable obstacles.

Despite such best efforts, instances of catastrophic outcomes continue to be reported. In most all cases, errors in clinician judgment, inappropriate dosing, and/or a failure to implement adequate patient monitoring during treatment and recovery, use of toxic doses of local anaesthetic, and an inability to recognize and manage a developing adverse reaction account for such mishaps, the effects of which translate to diminished use and teaching within advanced training programs [2,3] has served as a friend of the court for the last 30 years on both prosecution and defence sides in resolution of these tragic events. Current involvement involves alleged practitioner negligence in several mortality cases since 2020.

Subsequently, advances in proficiency and greater attention to training faculty equipped with such skills appears to be in decline. To the contrary, there are few programs who make safe and successful use of varying modalities involving sedation techniques that well prepare residents to make such modalities available to parents and patients [4,5]. These programs make concerted efforts for faculty and residents to be current with classical and extensive sedation literature, airway and medical emergency management. A few states, such as California and Illinois have initiated efforts in which such skills and knowledge are subjected to periodic assessment. The opposite regrettably appears to correlate to diminished teaching of sedation and weak use of this modality.

For some, wide implementation of a diverse repertoire of agents and dosing are taught based on sound patient selection criteria and visit demands. Careful pre-treatment patient physical assessment, careful attention to detail with respect to levels of apprehension, and reasonable drug regimens are utilized to safely maintain appropriate levels of consciousness and patient responsiveness [6]. Comfort levels of Program Directors manifesting proficiency and comprehensive experience in their utilization is not universal. Most notable is an underlying fact that many programs report having have restricted their repertoire of agents to

single agents (e.g. Midazolam in non-therapeutic dosages) attempting to complete treatment using unrealistic dosing to overcome moderate or more severe levels of apprehension and resistance. Encountering high failure rates as result can be hypothesized to provide justification for supervising faculty and residents to opt for more potent albeit more predictable or successful outcomes in an effort to avoid or minimize the use of physical restraint. From an institutional perspective, greater use and need for general anaesthesia may be an attractive alternative that reduces both risk and generates revenue. At the very least, such approaches generally result in greater need for the application of physical restraint when attempting to avoid general anaesthesia.

Abandoning sedative techniques shifts the burden of responsibility for patient safety from the dental team to anaesthesiology personnel thereby generating greater revenue within medical centers. No arguments can or should be made if use of more potent modalities are warranted albeit for more severe levels of patient resistance, medical diagnoses, or invasiveness of needed procedures. Patient safety remains paramount and a critical look at the qualifications and proficiency of dental personnel to in fact safely make use of sedative techniques is fundamental to including it in the arsenal of modalities pediatric dentists should be permitted.

Given appropriate discussion of informed consent and parental involvement, decisions to resort to general anaesthesia may be most appropriate for some patients. Similarly, if dental personnel are not sufficiently experienced and proficient with use of sedation modalities, it would seem prudent that unconscious techniques be employed in their place.

### **Regulatory Agencies Impact on the Training and Use of Sedation**

Training requirements and expectations from national regulatory agencies such as the Council on Dental Accreditation for what constitutes minimum standards within advanced training programs in pediatric dentistry to date appear limited to the number of visits trainees must experience. At present, unfortunately, no recommendations exist which clarify agents, combinations, or dosing limitations for which exposure and experience is warranted. In many states, specific drugs have been outlawed based on isolated occurrence and frequency with which serious outcomes have been reported. Time tested agents such as Chloral Hydrate, Meperidine, and Ketamine have fallen out of favor in many states, often from cases of operator negligence and poor judgment rather than inappropriate use of these agents or dosage selection [7]. Considerable retrospective data has recently been reported which has compared varying

doses of these agents for varying levels of apprehension with overwhelming numbers of subject demonstrating considerable success over the past thirty five years [4,5].

### Lowered Expectations for Proficiency among Pediatric Dentistry

Prior to 2001, those securing board certification in pediatric dentistry through the American Board represented the “best of the best.” Those successfully completing its rigorous and comprehensive process were acknowledged to have the broadest level of knowledge across all elements of pediatric dentistry, the classical and contemporary literature, and practical skills in the field inclusive of proficiency in the safe and effective use of sedation techniques [8]. Diplomates completed a rigorous four part examination format that spanned four years to complete. Due to its rigors and demands, the percentage who sought and achieved this accolade approximated only 15%. Following all day comprehensive written examination of the classical and current literature, candidates completed an oral exam, followed by a case presentation of specific pediatric dental challenges. A fourth part involved an all-day site visit exam. Due to the diligent nature of the process, this low percentage remained stagnant. In 2001, however, the ABPD in an effort to show a drastic increase in the numbers achieving Diplomate status, abbreviated the process at all levels, drastically reducing the process to a half day written exam of a limited literature selection and a reduced clinical verbal simulation of one hour. There are different schools of thought as to the inherent merit of lowering the bar, changing from a pursuit of excellence believed by some if not many to a quest for mediocrity.

Arguments made take to task qualitative differences between candidates who were successful when passing the more intense format over the abbreviated edition. The quality of Program Directors subsequent to this abbreviated format falls in question and it might be hypothesized that expertise and comfort levels using sedation have diminished. Pressures from administrative components to reduce the occurrence of mishaps by curbing the use of various agents and dosing may likely contribute to diminished use of sedation [8,9].

Access to out-patient surgical centers or the use of itinerant anesthesiologists for in-office use of general anesthesia offers pediatric dentists greater opportunity to make use of unconscious techniques for their challenging patients. The frequency with which clinicians now make use of general anesthesia over in-office sedative techniques is increased by those lacking capacity or comfort level. Whether or not this is of benefit to children and parents remains to be determined.

Recommendations for proficiency and background requirements for program directors is limited that they be board certified by the American Board of Pediatric Dentistry, regardless of which level and format of proficiency had been achieved. Criteria of that designation with respect to actual qualification of proficiency has since evolved from a more rigid examination format to a fundamentally abbreviated version and contributes to questions of who should or should not utilize sedation. A shift in the direction of what was once a pursuit of excellence for a pediatric dentist to one which lowered the bar for the sole purpose to increase membership achieving board certification raises serious questions as to one’s qualification to employ sedation in the safest manner [9,10].

### Consequences of Not Making Proficient Use of Sedative Techniques

Perhaps the most significant impact of not making proficient use of pediatric sedation is the need and appropriateness to resort to the application of physical restraint to complete treatment objectives. The extent to which the need to deploy restraints to offset interfering behavior varies case by case and practitioner to practitioner. While some parents and clinicians find the use of restraint inappropriate, others prefer its use to any and all risks of a sedation or general anesthetic mishap. When sedation efforts fail to eliminate or substantially reduce the need for restraint, some parents (and clinicians) report a preference to avoid sedation, or defer treatment until which time the child matures and more readily is able to permit treatment without being physically restrained. A recent report assessed parental input under these circumstances and concluded that acceptable or desirable use of physical restraint appears diminished by both parents and clinicians alike [11]. Extended use (and overuse) of general anaesthesia on a nationwide basis from a lack of pediatric dental acumen and proficiency in the safe and effective use of conscious sedation under circumstances where apprehension levels are mild or moderate, and/or for limited treatment needs can and should be addressed. It would seem reasonable to prefer to avoid a general anesthetic under these conditions. Need for objective data exists to identify safe agents and dosing for the pediatric dentist. Greater attention to detail, more extensive training of Program Directors and Faculty within advanced training programs appears warranted.

### References

1. Nathan JE (2018) Controversies in Behavior Guidance and management of challenging pediatric dental anxiety Avoidance of Restraints when possible. *J Ped Disorders and Neo-natal care* 1(3): 301-305.

2. Nathan JE (2017) Morbidity and Mortality involving pediatric sedation: Non-compliance with safety guidelines. *J Surgery* 1(1): 1-3.
3. Nathan JE (2017) Pediatric Sedation Practical Approaches to avoid mishaps, adverse reactions, and catastrophic outcomes. *J Pharmacology and Clin Research* 2(4): 1-3.
4. Nathan JE (2022) Retrospective comparisons of the efficacy and safety of varying doses of midazolam with and without meperidine for management of varying levels of anxiety and resistance of pediatric dental patients Over 35 years of sedation experiences. *J Clin Ped Dentistry* 46(2).
5. Nathan JE (2022) Comparisons of Varying Dosages of Chloral Hydrate-Hydroxyzine with and without Meperidine for Managing Challenging Pediatric Dental Behavior A Retrospective study of 35 years of Sedation Experiences. *J Clin Ped Dentistry* 46(4).
6. Wilson S and Nathan JE (2011) A survey study of sedation training in advanced pediatric dentistry programs: thoughts of program directors and students. *Pediatr Dent* 33(4): 353-360.
7. Nathan JE (2018) The disappearance of Chloral Hydrate as an effective sedation management tool for difficult young pediatric dental patients: An inappropriate and unfortunate outcome. *J Pharmacology and Clinical Research* 6(1): 1-3.
8. Nathan JE (2019) What advanced training programs in pediatric dentistry need to include to provide a meaningful experience and proficiency in the use of pediatric sedation: A dilemma for the Council on Dental Accreditation. *J of Dent Research Prac* 1(1): 1-3.
9. Nathan JE (2018) Evolution of Board Certification in Pediatric Dentistry: Changing patterns between enhancing quality and expanding numbers of AAPD members and implications for future training. *J of Oral Health and Dentistry* 3(3): 653-655.
10. Nathan JE (2019) Board Certification in Pediatric Dentistry: Once it represented the pursuit of excellence. *Interventions in Pediatric Dentistry* 2(5): 170-172.
11. Nathan JE (2022) Perspectives of Parents regarding the appropriateness of physical restraint alone or in conjunction with sedative techniques for managing challenging pediatric dental behaviors. *J Oral Health and Dent Research* 3(2): 1-17.

