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Editorial

What Training Programs Need to Include to Provide Meaningful Experience and Proficiency in the Use of Pediatric Sedation: A Dilemma for the Council on Dental Accreditation

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ABSTRACT

The Council on Dental Accreditation has the formidable task of determining what minimally needs to be included in the curricula of advanced training programs. Concerns have emerged regarding curriculum requirements for advanced training programs in pediatric dentistry in the area of pediatric sedation. Conceptually, among the obligatory demands to provide well rounded experience in all aspects of pediatric dentistry, wide variation in curriculum didactics and clinical experience with sedation techniques presents a dilemma for accreditation bodies. Wide variation appears to exist amongst programs with respect to what constitutes adequate exposure making use of both a limited and extensive spectrum of available agents and combinations to manage the childhood manifestations of varying levels of anxiety and behavioral resistance. This dilemma is not limited to training in sedation, but several other vital areas of instruction might also be included. Demands to provide broad experience across all areas of instruction within the framework of 24 month programs is alone at the very least challenging. Added to the complexity of securing adequate exposure to all clinical arenas is the additional component that exposes the postgraduate student to research requirements. As such, concerns have been raised with respect to potential benefit of lengthening training programs from two to three years, particularly where research components and advanced degrees are selected. At present, adequate experience and proficiency in the area of pediatric sedation is considered minimal and query is underway to determine what constitutes sufficient exposure to ensure safe and effective training experience. Catastrophic events continue to appear in the literature documenting sedation mishaps and examples of poor clinician judgment. Focus of this manuscript falls on the area of sedation since it poses the greatest risk and most timely concern for high risk and life threatening outcomes.

EDITORIAL

Amongst the challenges within advanced training programs in pediatric dentistry is how to best prepare pediatric dental specialists to manage fearful and uncooperative child behavior. The arena of sedation, unlike most other areas, appears broadest with respect to the perspective of patient safety. Today, despite considerable study and theoretical discussion that explores various non-pharmacological as well as pharmacological approaches to overcome patient limitations in cooperative ability, rarely found is evidenced based support for many of the techniques employed. Several fundamental beliefs exist which offer logical explanations and rationale for managing fearful child behavior. One such axiom indicates that before undertaking a pharmacological approach, every effort should be made to exhaust conventional communication strategies. In some instances, the use of physical restraint and/or adverse techniques are considered appropriate by some academicians and private practitioners before resorting to pharmacological means. A second paradigm reminds us of the need to do no harm by exposing a child and parent to the use of potent sedative techniques which carry potentially adverse respiratory and cardiovascular effects. [1] Despite the development of guidelines by the American Academy of Pediatric Dentistry, American Academy of Pediatrics, American Society of Anesthesiology and others for the elective use of various levels of sedation, mortalities continue to be reported by virtue of practitioner negligence, misuse, and poor judgment [2,3]. Because of such, several institutions and state regulatory bodies have diminished the armamentarium of available agents and combinations despite long histories of effectiveness and safety when safety guidelines have been followed. Many training centres, university and hospital based, have eliminated the use of agents like chloral hydrate and meperidine from use for reasons related to misuse and/or unsupported bias [4].

Recent reports surveying usage of specific agents and combinations identify it is not uncommon for a majority of programs to limit experience to include agents only

possessing reversal capabilities, such as benzodiazepines (midazolam, lorazepam), and narcotics. Many programs report limiting use to only midazolam. Secondly, use of low or non-therapeutic dosing is advocated by some with belief and intent to avoid at all costs the occurrence of an adverse reaction and substitute adjunctive use of physical restraint when encountering interfering movement that impairs quality performance and completion of treatment objectives. For these scenarios, practitioners do not appear to perceive the need for restraints as a detriment to assessing efficacy of the sedative agents chosen; for others more accomplished in the selection of therapeutic dosages based on individual needs and levels of apprehension, ratings of what constitutes effective sedation prefer little or no need for restraint [4-8]. Surveys of parental assessment and preferences seem clearly in the direction of avoidance of the use of restraints. In the final analysis, program directors, parents, and private practitioners determine agent selection, dosing, and methods when treating varying levels of apprehension and resistance based on their individual comfort levels and experience. Institutional need to reduce or eliminate risk becomes foremost [9]. Alternatively, improving the quality of training programs to make safe and effective use of sedation perpetually falls under purview by the Council on Dental Accreditation.

The last several decades have devoted considerable energies to identify viable and safe pharmacologic agents and regimens where non-pharmacologic approaches prove inadequate or inappropriate to manage simple as well as extensive dental treatment needs. For patients manifesting heightened levels of apprehension along with extensive treatment need, the general consensus concludes that unconscious techniques understandably become the preferred modality. For patients with moderate (or lessor) levels of apprehension and varying degrees of treatment need, unable to cope with treatment demands, however, alternatives are needed which permit care under varying degrees of consciousness and it has become the responsibility of the Council on Dental Accreditation to identify the range of modalities and agents for which advanced training programs should demonstrate experience. What constitutes adequate exposure is currently in heated debate. Patient populations differ, parental preferences are variable, and faculty proficiency and competency with the use of a broad range of agents are diverse across the nation through advanced training programs in pediatric dentistry.

Many factors contribute to decisions as to what constitutes a viable drug armamentarium; additional variables include the perceptions of various state regulatory bodies and institutional preferences/biases. These bodies are first and foremost responsible to the public for safety. Mishaps related to inadequate familiarity, or proficiency in medical emergency preparation and management are intolerable.

Within institutional settings, program directors possess variable training and regard some agents as inappropriate and unsafe. While optimal exposure of programs to make use of a wide spectrum of agents, routes of administration, and dosage ranges based on specific behavioral expectations remains desirable, consensus and implementation of such presents a formidable task. Programs differ with respect to faculty proficiency in recognizing and managing a developing problem and abilities to intercept and prevent a catastrophic outcome [9,10]. To date, on a national basis, no mechanism is in place that examines a program's scrutiny of its use and safety record. There appears to be no consensus amongst advanced training programs with respect to armamentarium and dosing criteria residents and postgraduate students can employ. A rarely discussed factor includes the extent to which faculty supervision universally occurs leaving residents and postgraduate students without sufficient coverage and backup. No doubt such occurrences place stress on program directors and credibility of programs when making use of sedative techniques.

To date, no national standards for maintaining logs of the use of sedative agents for each training program or private practice exist; further, while few states are beginning to draft regulation requiring mandatory internal review of proficiency in emergency management protocol and timely simulation reviews of faculty, resident, and practitioner proficiency, both requirements for such and enforcement is lacking. At present and long overdue , consideration is being given to establish a national data bank for mishaps and instances of morbidity and mortality by the AAPD. Until recently, responsibility for safety and intervention under circumstances of misuse or poor outcomes were deferred to litigation channels. A more proactive role of national and state professional societies is contemplated and welcomed. These activities will no doubt impose substantial labor intensive and manpower challenges [10].

What to use, what dosing parameters should apply, and most recently, what constitutes an adequate number of experiences are amongst the qualitative and quantitative challenges charged to the ADA Council on Dental Accreditation.

At this juncture, arbitrarily, pediatric training programs are required to document 25 cases of the use of sedation as primary operator; another 25 cases as secondary operator or chairside assistance. Whether these numbers prove adequate is in debate. For some programs, these minimum numbers are easily satisfied. Others find such difficult for reasons which relate to patient base, and the frequency with which unconscious techniques are needed or selected. An argument that finds the use of general anesthesia attractive might relate to elimination of in-clinic sedation risk and favorable generation of revenues accompanying use of a hospital or out-patient surgical center. Regretfully, there is no evidence based support to clarify the adequacy of these quantitative experiences; for some programs, distinction is not made between the adjunctive use of inhalation sedation using nitrous oxide-oxygen and oral agents. Minimal adequacy in experience is being explored without pursuit or recognition of what might be construed as pursuit of excellence or a stronger clinical measure of proficiency. Notably lacking is identification of the specific agents for which residents and postgraduate students should have exposure and experience. Substantive data is not provided to clarify appropriate agents, combinations, and dosing criteria.

Advanced training programs in pediatric dentistry limit their anesthesiology exposure to 4-6 weeks to secure minimal airway management skills; oral and maxillofacial surgery

programs, alternatively, which make use of predominantly parenteral forms of conscious sedation and unconscious techniques view this requirement as inadequate and traditionally include a minimum of 6 months. Logically ,the need for comprehensive knowledge in this arena trumps the need for minimal exposure. The question of whether minimal sedation experience can be considered adequate is poorly defended. Undertaking all aspects of safety, i.e. demanding knowledge that is complete vs. that coverage which scratches the surface is without hesitation or argument difficult to justify.

This brings the subject back to the suggested potential benefit of the Council on Dental Accreditation exploring a need to lengthen advanced training programs in pediatric dentistry to enable the pursuit of excellence and safety vs. minimal proficiency.

One conclusion seems warranted; program length to address curriculum deficiencies, be they to enhance broader experiences in sedation, airway management and anesthesiology, deep sedation and unconscious techniques, orthodontic diagnosis and mechanics, and research suggests need for lengthening programs to include an additional twelve months. While a recognized task of the CDA is to define what constitutes minimum requirements for a given curriculum, would it not be beneficial to include optimal suggestions that seek to elevate standards by which the pursuit of excellence vs. that of mediocrity might be achieved? The American Board of Pediatric Dentistry has experienced similar growing pains in the last decade as it has elected to lower standards from the pursuit of excellence to minimal levels of proficiency for the purpose of stimulating greater numbers of its membership to secure board certification status [11,12]. In the big picture it is unclear what will be gained by the profession by such actions.

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