

Pediatric Dentists’ Perspectives on Clinical Training Obtained During Residency Program

Tony James, DDS; Farhad Yeroshalmi, DMD; Lisa Van Eyndhoven, DDS; Victor Badner, DMD, MPH
Jacobi Medical Center, Department of Pediatric Dentistry, Bronx, New York

ABSTRACT

Purpose: To gather practicing pediatric dentists’ opinions on their clinical training during residency and identify potential improvements in their residency programs.

Methods: A 15-question survey was sent via SurveyMonkey to active practicing members of the American Academy of Pediatric Dentistry (N=6,679). The questions examined participants' residency experiences, current practices, and their preparedness for various clinical procedures. Data collection spanned 12 weeks

Results: Response rate was 7% (N=454), with gender distribution of 53% females (N=241) and 46% males (N=209), with majority (59%, N=266) having practiced greater than 10 years. Pediatric focused group practice (44%, N=199), and suburban areas (62%, N=281) were settings most practiced. A Likert scale survey instrument (1= lowest, 5= highest) assessed both the frequency of performance, and the level of preparation for 25 dental procedures. The most frequently performed procedures were: stainless steel crowns, nitrous oxide administration, and vital pulp therapy. These three procedures each had a mean preparedness Likert score of 4.8, indicating well prepared for clinical practice. Conversely, the least frequently performed procedures were: endodontic treatment, laser dentistry, and interceptive orthodontics. Respondents felt least prepared for laser dentistry (1.6 for hard tissue, 1.8 for soft tissue), endodontic treatment (2.2 for posterior teeth, 2.8 for anterior teeth), and Zirconia crowns (2.4). Eighty nine percent of respondents (N=405) reported being satisfied/very satisfied with their residency training.

Conclusion: Pediatric dentists generally felt their residency program adequately prepared them for clinical practice. However, many reported insufficient training for newer treatment options like laser dentistry and Zirconia crowns.

INTRODUCTION

Pediatric dentistry is one of the eighteen advanced dental education programs accredited by the Commission on Dental Accreditation (CODA), with set standards and the intent to “ensure that the students/residents of these programs receive the same educational requirements as specified in these Standards”.¹ This residency program consists of a two-year training in a hospital or university-based institution.

Despite adherence to these educational principles, each pediatric dentistry residency program inevitably varies. Differences in patient populations, frequency of procedures, institutional settings, and other factors contribute to unique training experiences across programs. These discrepancies have been a subject of investigation for many years.²⁻⁴

Most studies evaluating pediatric dentistry residency programs are conducted by program directors. However, there are fewer studies that gather insights from current residents or practicing pediatric dentists, despite these perspectives offering valuable information on the relevance, applicability, and areas for improvement within residency training.

The purpose of this study was to survey practicing pediatric dentists to determine which aspects of dental practice they feel most confident in, and which areas require further development. By collecting data on factors such as graduation year, residency program type, and training, this study aimed to explore how time since graduation and variations in residency curricula impact a dentist’s preparedness for practice. For example, different methods of oral sedation across hospitals can influence a provider's comfort and approach to performing the procedure post-residency.

The goal of this study was to assess residency training and identify potential areas for improvement in future curricula to better prepare residents for their careers in practice.

MATERIALS AND METHODS

A survey consisting of 15 questions was sent via SurveyMonkey to 6,679 active practicing members of the American Academy of Pediatric Dentistry as obtained from their membership directory. The survey investigated pediatric dentists’ perspectives on their preparation for clinical practice obtained from their dental residency training. A cover letter was sent along with the email, describing the purpose of the study, expressing that the completion of the study was voluntary, and that the risk/s of potential psychological, social, physical or legal to participants is at a minimum. Data was collected over a 12 week period.

The Institutional Review Board of the Albert Einstein College of Medicine approved this study #2024-15949 by expedited review.

Table 1. Frequency and Preparedness of Pediatric Dentists Regarding Procedures Mean Likert Scale (1= Never/ Very Unprepared - 5= Daily/ Very Prepared)			
Frequency (As of Current Practice)		Preparedness (As Obtained from Residency Training)	
Procedure	Likert Score	Procedure	Likert Score
Nitrous oxide administration	4.7	Stainless steel crowns on primary teeth	4.9
Stainless steel crowns on primary teeth	4.3	Nitrous oxide administration	4.8
Vital pulp therapy on primary teeth	4.2	Treatment under General Anesthesia	4.8
Non-pharmacologic management of patients with special health care needs	3.9	Vital pulp therapy on primary teeth	4.8
Silver Diamine Fluoride	3.8	Space maintenance associated with early loss of primary teeth	4.7
Space maintenance associated with early loss of primary teeth	3.6	Non-pharmacologic management of patients with special health care needs	4.5
Atraumatic restorative techniques	3.0	Splinting of avulsed permanent teeth	4.5
Treatment under General Anesthesia	2.8	Treatment under Oral Sedation	4.4
Extraction of permanent dentition	2.6	Pharmacologic management of patients with special health care needs	4.2
Management/treatment of gingival and periodontal diseases	2.6	Extraction of permanent dentition	4.0
Pharmacologic management of patients with special health care needs	2.5	Atraumatic restorative techniques	3.9
Treatment under Oral Sedation	2.3	Vital pulp therapy in immature permanent teeth	3.9
Vital pulp therapy in immature permanent teeth	2.3	Correction of deleterious oral habit via appliances	3.6
Hall crowns	2.3	Non-vital pulp therapy on primary teeth	3.6
Non-vital pulp therapy on primary teeth	2.4	Management/treatment of gingival and periodontal diseases	3.6
Zirconia crowns in primary dentition	2.2	Correction of posterior crossbite via appliances	3.5
Splinting of avulsed teeth	2.2	Silver Diamine Fluoride	3.4
Laser dentistry to treat soft tissue abnormalities	1.7	Correction of anterior crossbite via appliances	3.3
Correction of deleterious oral habit via appliances	1.6	Use of space regainers associated with early loss of primary teeth	3.0
Correction of posterior crossbite via appliances	1.5	Hall crowns	3.0
Use of space regainers associated with early loss of primary teeth	1.5	Endodontic therapy on anterior permanent dentition	2.8
Correction of anterior crossbite via appliances	1.4	Zirconia crowns in primary dentition	2.4
Laser dentistry for restorative treatment	1.3	Endodontic therapy on posterior permanent dentition	2.3
Endodontic therapy on anterior permanent dentition	1.2	Laser dentistry to treat soft tissue abnormalities	1.8
Endodontic therapy on posterior permanent dentition	1.1	Laser dentistry for restorative treatment	1.6

Figure 1. Satisfaction with Pediatric Dentistry Residency Training

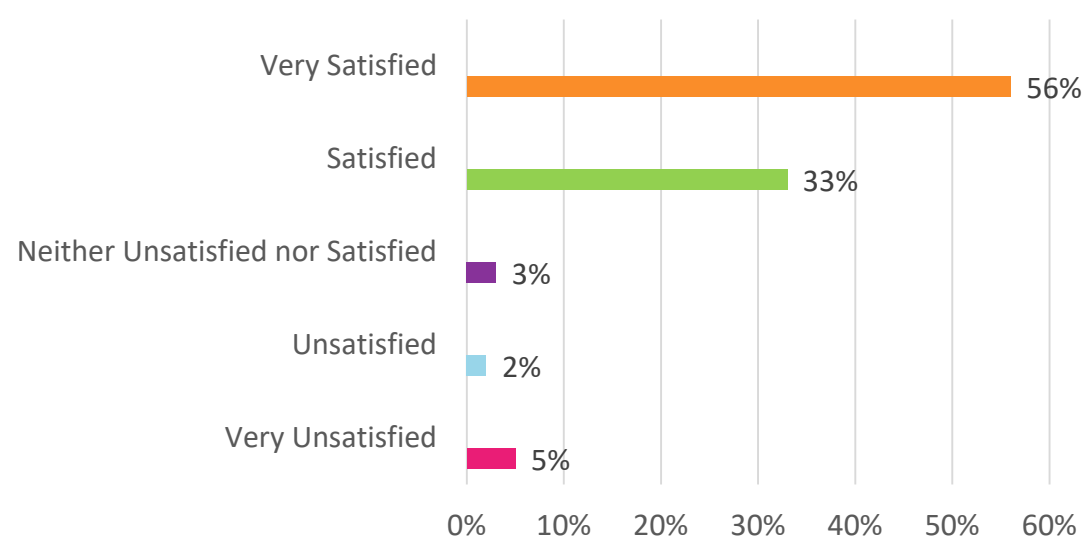
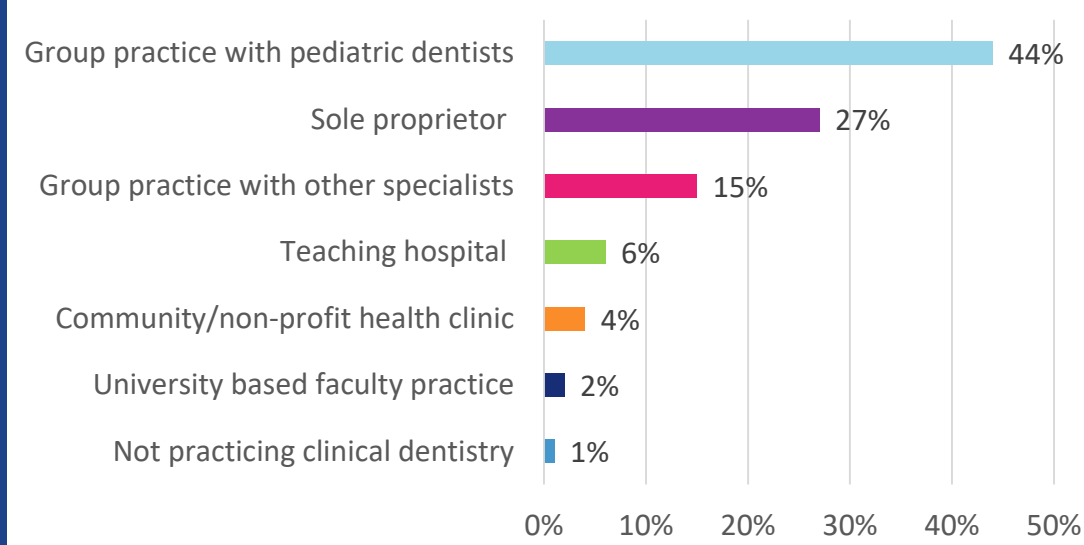


Figure 2. Setting of Current Pediatric Dentistry Practice



RESULTS

- Of the 6,679 emails sent, 6,414 were successfully delivered and 454 responses were obtained, leading to a response rate of 7%.
- Respondents were asked when they graduated from pediatric dentistry residency, with results of 29% (N=131) graduating 1-5 years ago, 13% (N=57) graduating 6-10 years ago, and 59% (N=266) graduating more than 10 years ago.
- Respondents were asked how often they perform, and how well their residency program prepared them for 25 listed procedures. See Table 1.
 - A Likert scale survey instrument was used to calculate a value of frequency, and preparedness associated with the answer choices, such that the higher the frequency or preparedness, the higher the value (scale 1-5).
- Respondents report being adequately prepared from their pediatric dentistry residency program to perform 16 of the 25 listed procedures.
 - For the remaining procedures, live continuing education activity and experience from a previous dental residency contributed most to their training.
- Approximately 44% (N=198) report performing dental treatment under oral sedation whereas approximately 56% (N=256) do not perform in this manner.
 - The most commonly used medications were: Midazolam (36%, N=161), Hydroxyzine (30%, N=138), Meperidine (25%, N=112), Diazepam (18%, N=81), and Chloral hydrate (6%, N=27).
- Approximately 89% (N=405) reported being very satisfied or satisfied with how their residency program trained them for a career in clinical practice.

CONCLUSIONS

Based on this study’s results, the following conclusions can be made:

- Pediatric dentists generally felt their residency program adequately prepared them for clinical practice.
- The most frequently performed procedures was nitrous oxide administration, whereas they were most prepared for stainless steel crowns on primary teeth, reflecting core skills in pediatric dentistry.
- Many reported insufficient training for newer treatment options such as laser dentistry and Zirconia crowns.
- Despite adequate preparation for oral sedation, a majority of respondents do not utilize oral sedations in their practice.
- Majority of the respondents reported being very satisfied or satisfied with their residency training.

BIBLIOGRAPHY

- CODA.Org: *Pediatric Dentistry Accreditation Standards*, Commission on Dental Accreditation. Published: August 11, 2023.
- Boynton JR, Amini H, Claman DB, et al. Safety Training in US Pediatric Dentistry Advanced Education Programs: A Survey of Program Directors. *Pediatr Dent*. 2022;44(3):198-206.
- Hui N, Arevalo O, Gupta A, Saman DM, Wilson S. Assessing the Current Research Infrastructure of Pediatric Dentistry Residency Programs: An Update for 2020. *Pediatr Dent*. 2021;43(5):371-379.
- Ibrahim H, Nelson T, Thikkurissy S, Xu Z, Scott J. Comparison of Procedures, Time and Fees Associated with Procedural Sedation and General Anesthesia in a Pediatric Dentistry Residency Program. *J Dent Child (Chic)*. 2022;89(2):104-109.