



# Barriers to Endodontic Treatment in Children and Adolescents: A Qualitative Study

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## INTRODUCTION

Childhood and adolescence are vital times in the growth and development of an individual’s dentition and of the orofacial complex. The natural dentition plays an important role in that development by maintaining space and arch length, allowing for continued growth of the orofacial structures. Therefore, maintenance of the natural dentition is crucial, and technological advancements in materials and techniques of late support this goal. To this end, endodontic treatments prevent and eliminate odontogenic sources of pain and infection. However, several factors may complicate the decision-making process of a clinician’s treatment planning when considering endodontic procedures in children and adolescents. Therefore, in terms of receiving endodontic treatment, children and adolescents are often a missed population. This study aimed to elucidate facilitators and barriers to the access of endodontic treatment for children and adolescents.



## METHODS

This qualitative study was approved by the NYU Washington Square IRB Board (IRB-FY2022-6476). Informed consent was obtained from each participant and a demographic survey was completed to ensure clinician and practice characteristics and demographic information, such as the proportion of the clinician’s patients of different ages (i.e., young children, adolescents), clinical specialty, solo versus group practice, payer mix, and monthly volume of endodontic procedures.

### Recruitment

**Inclusion Criteria:** Pediatric dentists, Endodontists and General dentists practicing in New York and Massachusetts.

Participants were recruited for 45-minute interviews using purposive and snowball sampling methods in order to ensure the desired representation. Initial contact was through email. To maximize response, a modified Dillman approach was used with up to four contact attempts per person. Dentists were offered a \$35 gift card in appreciation for their time.

### Interviews

Non-directive interview guides were designed under the guidance of two additional study investigators. One-on-one semi-structured video call interviews were conducted by the principal investigator with 26 dentists until thematic saturation was achieved and further analysis did not yield any new information.

### Analysis

Interviews were de-identified and transcribed verbatim by a third-party transcription service. Transcripts were analyzed by three study investigators and consensus coding was completed to develop a codebook while maintaining coding consistency and transparency. The codebook was developed to identify themes and subthemes within the data. Inductive thematic analysis was then performed using ATLAS.ti software.



## RESULTS

### Demographics

- Saturation of themes was reached after recruitment of 26 dentists from New York and Massachusetts.
- Total participants were comprised of 17 females and 9 males, with a median age 39.5.
- 7 general dentists, 11 were pediatric dentists, 5 were endodontists and 2 were dual specialized in both pediatrics and endodontics.
- To ensure adequate representation, participants included in the study varied by the practice type they were employed in (FQHC, Private practice, Academia/Hospital) and setting (suburban, rural and urban).
  - Endodontists worked in either private practice or Academic/Hospital settings.
  - Pediatric dentists worked in private practice, academia/hospital or FQHCs.
  - General dentists worked in private practice, academia/hospital or FQHCs.

### Thematic Analysis

The following themes (listed in the order of prominence) were identified from the 26 interview transcripts after consensus coding:

1. Access to Provider

4. Prevalence and Etiology

2. Knowledge and Training

5. Patient Behavior

3. Financial Considerations

6. Referral Patterns

## THEMES WITH REPRESENTATIVE QUOTES

### Access to Provider

*“I still didn’t feel comfortable like working with kids, and managing the behaviors, and the parents. And then working in FQHC settings, I would see a lot of kids more often. But there were more opportunities to refer them. So, I didn’t have to see them, either.”-* General dentist, NY

*“The endodontists don’t want to treat them...I mean, I’ve had people call and say, “Well, I’ve called 10 endodontists, and nobody will take my child.” [Endodontists are] afraid of wasting an hour with a kid they can’t control.” -* Endodontist, NY

*“I mean, we really didn’t focus on [endodontic procedures in residency] and I wish that we would have. I think that across the board, I don’t think there are many pediatric dentists that feel strong to do [endodontic procedures]. I do know one person who does do endo on pre-molars as a pediatric dentist. But that’s very rare.” –* Pediatric Dentist, NY

### Knowledge and Training

*“In my residency program ... you really didn’t get much even with kids at all... I had to learn on my own when I got out and when I started practicing...” -* Endodontist, NY

*“Now that I’ve done both [pediatric and endodontic residency], I feel like I have...the clinical knowledge and the didactic knowledge to be able to treat this patient population. It took pursuing two degrees to really feel comfortable that I could do this.”-* Pediatric dentist/Endodontist, MA

*“In my post-doctoral training [I] definitely saw a lot more vital pulp therapy and then no non-vital pulp therapy did I perform myself. We used to behavior manage [for] endodontic residents [performing procedures] ... the nitrous, the local, things like that. But I myself wasn’t doing any of those things.” -* Pediatric Dentist, NY

### Financial Considerations

*“You cannot even [bill] an indirect or direct with the Medicaid. I don’t think they cover any of that. So we just [charge for] the restoration. Or if you just did a liner or — let’s say we just did like palliative, so we can charge for the palliative.” -* Pediatric Dentist, NY

*“I know a lot of endodontists that don’t see kids, anybody under 18...unfortunately, with endo time is always money. When you’re sitting there trying to get a kid numb for 20 minutes, you’re not making money.” -* Endodontist, NY

*“Most of the reasons why I wouldn’t take on more difficult cases, on top of my lack of know-how, would [also be] that reimbursement doesn’t coincide with... the amount of work I would need to put in [for] mediocre or average outcomes. So that it’s best for a specialist to do it.” –* General Dentist, NY

### Prevalence and Etiology

*“In private practice, I feel again that most of the cases that we will end up seeing would probably be because of decay... I’ve seen some trauma, but that’s not the majority of cases that I end up seeing.” -* Endodontist, MA

*“If I had to guesstimate [the number], maybe a handful a month. And those are really on bombed-out like molar-incisor hypomineralized molars.” –* Pediatric Dentist, MA

### Patient Behavior

*“Behavior has a great impact on the treatment that we choose. For younger patient populations – such as younger than, let’s say, eight years of age – I would consult with the endodontist in-house... [he wants] to see if [the patient] is manageable or he can guide the behavior. If not, then I would refer [the patient] to a place where they can do sedations.”-* Pediatric dentist, MA

*“We don’t have nitrous, we don’t have sedation, and we don’t have papoose boards. So, if it requires any of those behavioral modifications for them to receive the treatment they need, then no... in our setting we’re not equipped for that.”-* Endodontist, MA

### Referral Patterns

*“I [used] to work in a practice for a while that treated a lot of pediatric patients. And it was primarily Medicaid...I had [many] more encounters with [pediatric patients requiring endodontics]. And I couldn’t find a single specialist who would be willing to see these patients. Because most of my patients were on Medicaid or had no insurance...I’d have to send these patients to a hospital setting, or like a pediatric residency.”-* General Dentist, NY

*“Many of the times the patients actually come to us [at the school] to seek endodontic treatment because they have a referral from an outside dentist. And so I think that’s the problem is that...it’s very uncommon to find an endodontic practice that is willing to see pediatric patients under a certain age.”-* Pediatric Dentist, NY



## CONCLUSIONS

Previous data suggests that there is a gap in care for children and adolescents in need of endodontic care. Analysis of the most prominent themes suggest that the greatest barriers to treatment are training and financial considerations. Lack of procedural proficiency amongst pedodontists and general dentists due to limited training was a consistent theme throughout the analysis. Endodontists, while procedurally proficient, reported a lack of adjunctive behavior management tools such as nitrous and conscious sedation capabilities. Our results also indicate that the level of need may be higher in public payer populations, however, most of the encountered cases in need of endodontic treatment were the result of caries in permanent molars. Other prominent themes in the data are suggestive of gaps in coverage for certain endodontic procedures and concerns with reimbursement rates, particularly for treatments considered in immature permanent teeth.

## REFERENCES

1. Burns LE, Gencerliler N, Gold HT. A comparative analysis of public and private dental benefit payer types for the provision and outcomes of root canal therapy on permanent teeth of children and adolescents in Massachusetts. J Am Dent Assoc. 2023 Feb;154(2):151-158. doi: 10.1016/j.adaj.2022.10.011.2. Burns LE, Gencerliler N, Terlizzi K, Wu Y, Solis-Roman C, Gold HT. A comparative analysis of outcomes of root canal therapy for pediatric medicaid beneficiaries from New York State. Front Oral Health. 2022 Nov 19;3:1031443. doi: 10.3389/froh.2022.1031443.
3. Burns LE, Gencerliler N, Terlizzi K, Solis-Roman C, Sigurdsson A, Gold HT. Apexification Outcomes in the United States: A Retrospective Cohort Study. J Endod. 2023 Oct;49(10):1269-1275. doi: 10.1016/j.joen.2023.07.020.

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