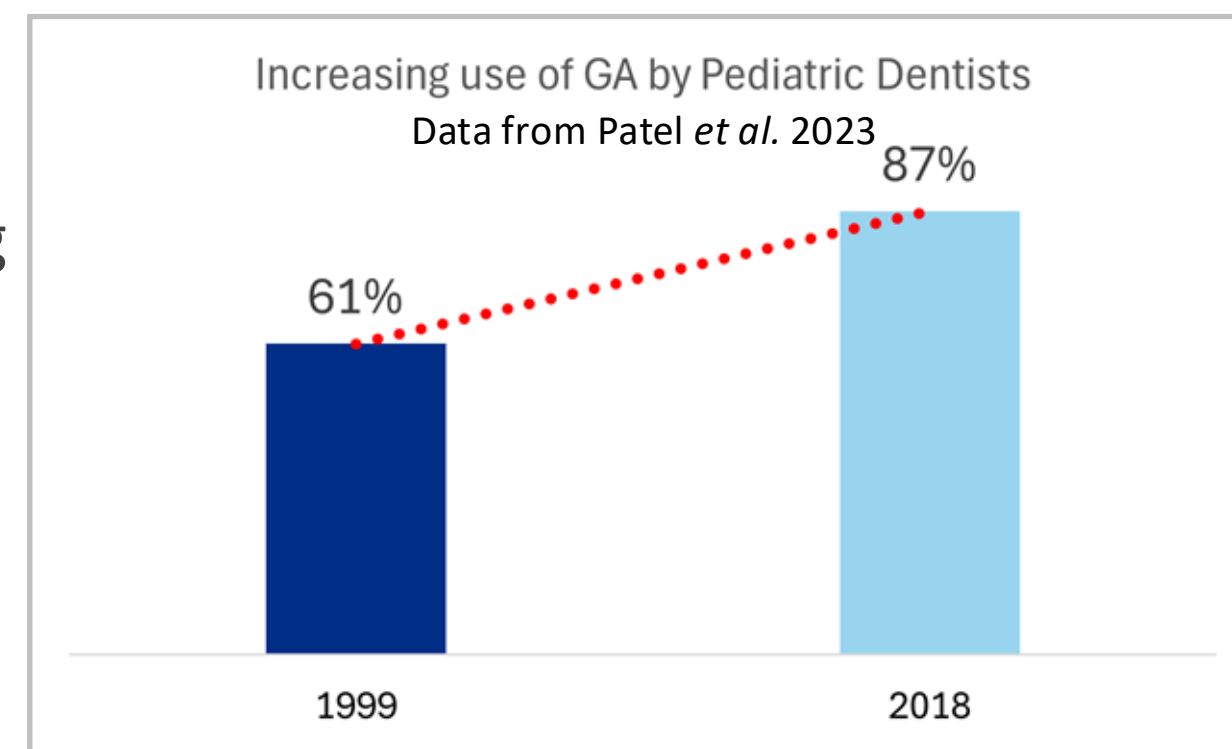


Caries Relapse and Full-Mouth Rehabilitation

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BACKGROUND

- Early Childhood Caries (ECC), defined as ≥ 1 decayed (non-cavitated or cavitated), missing, or filled tooth surfaces in a child ≤ 6 years old, is a prevalent and chronic disease in US children
- Most children with extensive treatment needs due to ECC present with acute stress reaction, necessitating treatment under general anesthesia (GA), with younger children being more likely to require GA
- Dentists' commitment to treating the most complex cases of ECC has driven increased use of GA in the US, reflecting the profession's dedication to ensuring effective care while navigating the inherent challenges of managing safety in young patients
- Better understanding of post-treatment outcomes and factors that may impact caries relapse may inform strategies to improve outcomes, particularly among high-risk populations



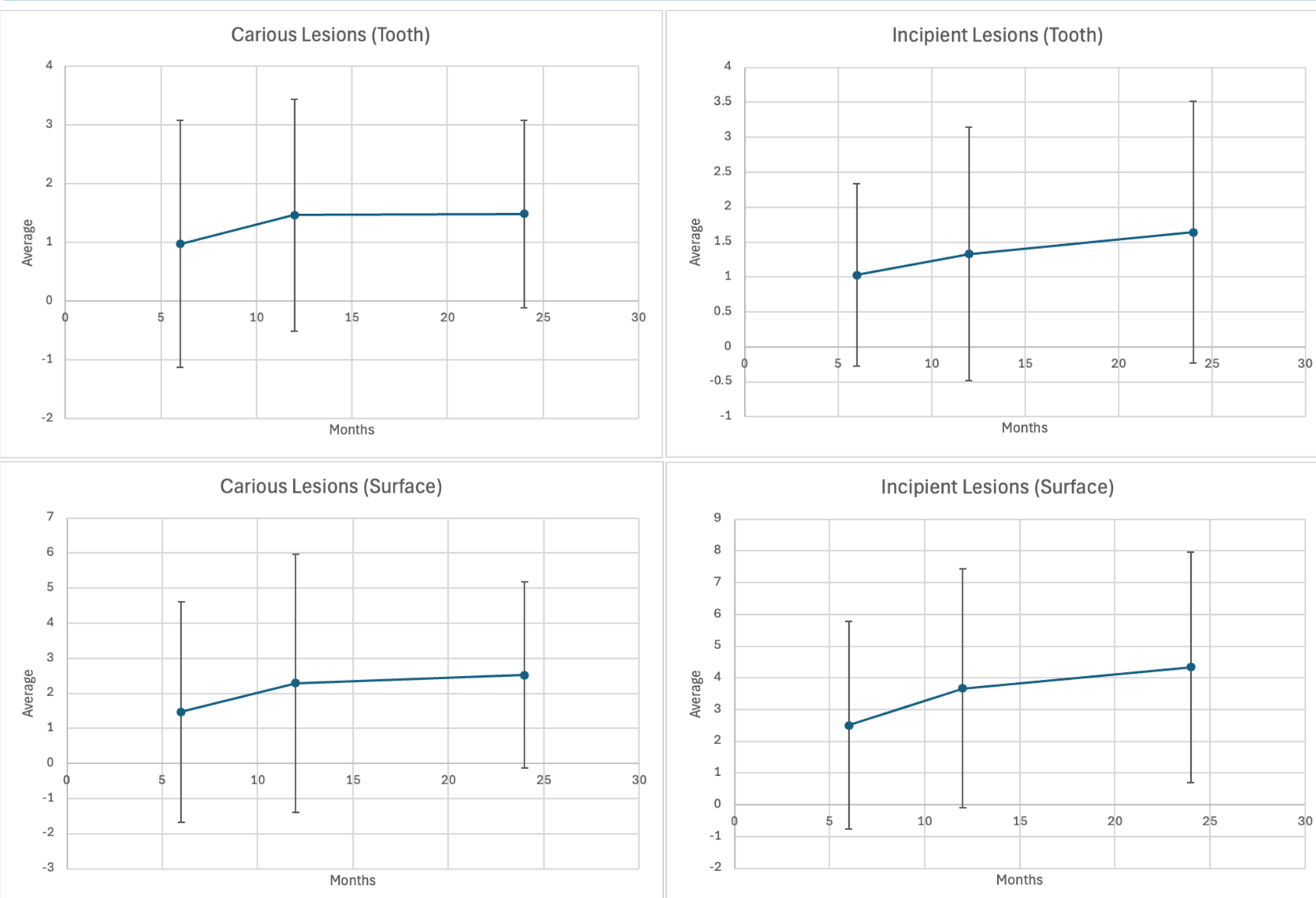
OBJECTIVES

To determine the rate of ECC relapse (total number of teeth and tooth surfaces affected by caries (dmft/dmfs) at each follow-up visit) over two years among a sample of children who underwent dental rehabilitation in the Children's Hospital operating room (OR) or endoscopy/bronchoscopy suites by the Columbia pediatric dentistry division from 2020-2023 and evaluate factors that may be associated with relapse

MATERIALS & METHODS

1. 339 patients received dental treatment in the operating room from January 2020 to September 2023
2. Charts were assessed for the following inclusion criteria**: age ≤ 6 years old, health status (ASA I or II)
3. 179 qualified for the retrospective chart review to assess post-OR outcomes
4. Charts reviewed for patients' demographics, recall visit attendance (at 6, 12, and 24 months), dental visit history (non-traumatic emergency visits), number of cancellations, self-reported use of fluoride dentifrice, and caries relapse

RESULTS



87 patients (49%) attended at least one recall visit

No covariates were significantly associated with caries relapse

Visit Cancellations / No Shows
 $M = 3.6 \pm 3.6$, Range: 0-17

Emergency Visits
 $M = 0.79 \pm 1.1$, Range: 0-6

Fluoride Use
45% (n = 39)

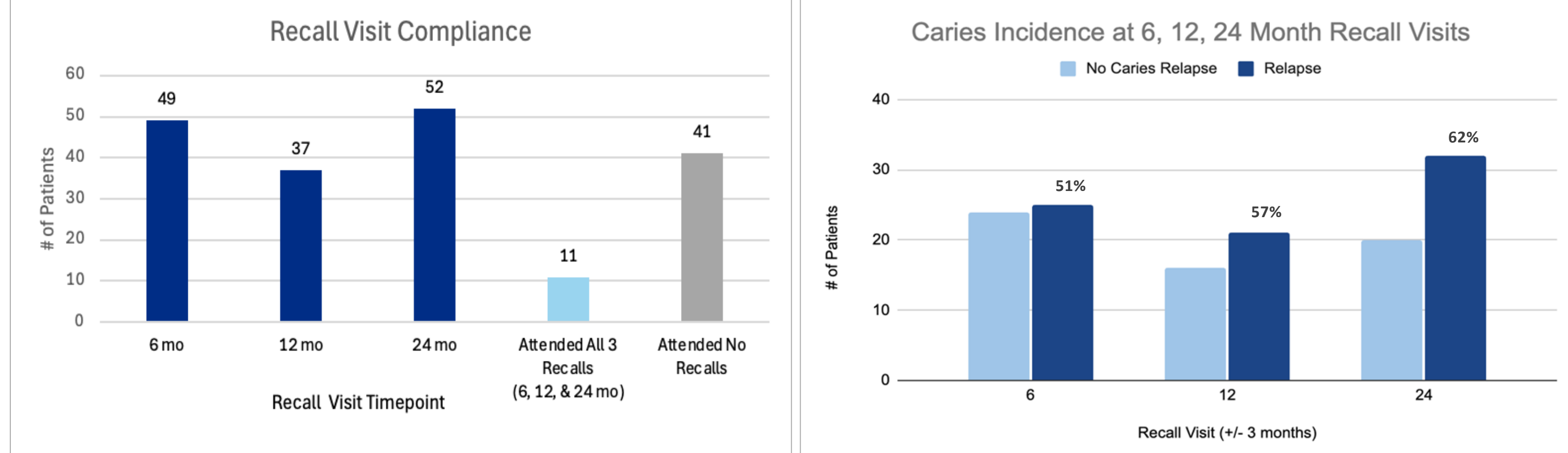
Age
 $M = 4.5 \pm 1.1$, Range: 2-6 years

Race
30% White, 17% Black, 2% Asian, 2% American Indian, 38% Other

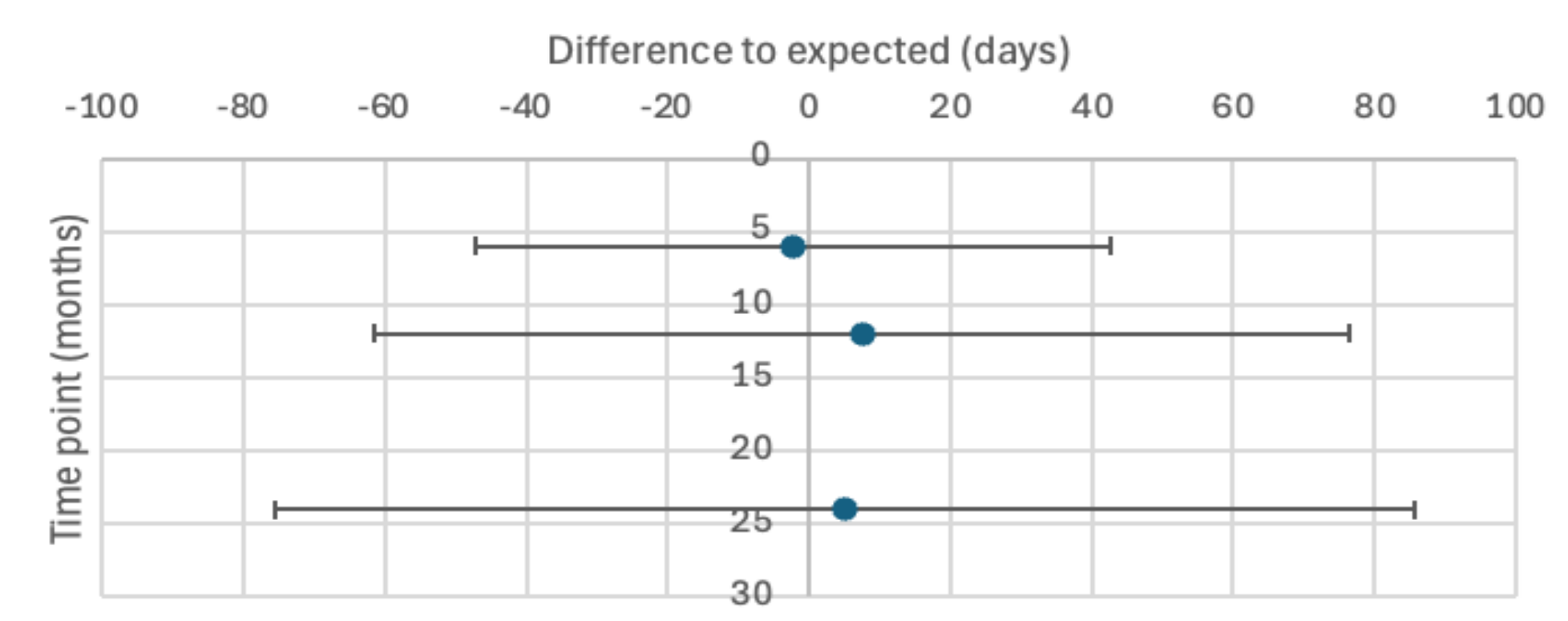
Ethnicity
56% Hispanic (n = 100), 12% Declined (n = 21)

Preferred Language
59% English (n = 105), 34% Spanish (n = 60)

RESULTS



Average Difference between Recommended Recall Visit (exact 6M/12M/24M date) and Actual Date of Visit



- 63% children (n = 55) experienced caries relapse at some point over the two-year period, with nearly half (45%) reportedly using fluoridated toothpaste
 - 51% relapse by 6 months
 - 57% relapse by 12 months
 - 62% relapse by 24 months
- Only 6% of patients attended all three recommended recall visits
 - No significant association with caries relapse
- Among 84 patients with an emergency visit, 56% attended ≥ 1 recall visit
- Among 148 patients who cancelled/did not show for appointments, 55% attended ≥ 1 recall visit

DISCUSSION

- The increasing proportion of relapse from 6 to 24 months indicates that children treated under GA remain at continued risk for disease progression, emphasizing the need for consistent prevention education and anticipatory guidance and follow-up
- Despite the importance of recall visits, very few patients completed all recommended recalls, highlighting challenges with long-term follow-up and continuity of care in this population
- Previous studies have demonstrated that recurrence of early childhood caries following dental rehabilitation under GA is influenced by home behaviors and adherence to follow-up care. Additionally, caries recurrence has been reported as early as six months after treatment, with relapse rates exceeding 50% at early recall visits.
- These findings reinforce prevention education strategies and caregiver education as traditional repair alone does not address the behavioral and environmental contributors to early childhood caries
- Some inherent limitations to the project:
 - Retrospective design
 - Reliance on clinical documentation that was not for research purposes
 - Provider variability in caries diagnosis scores although standardized but not calibrated

CONCLUSIONS

- Children requiring full-mouth rehabilitation under GA represent a high-risk population for future caries, and long-term disease management strategies are critical to slow recurrence
- Improving postoperative recall attendance is essential to support adherence to oral health recommendations and slow disease progression and relapse after full-mouth rehabilitation under GA
- Better understanding existing follow-up systems: automated reminders to schedule recall visits, pre-operative oral hygiene education prior to the OR, and incentive systems to recognize and reinforce improved or maintained oral hygiene habits, may improve recall attendance outcomes

ACKNOWLEDGEMENTS

I would like to thank my research mentor Dr. Lumsden for her mentorship and guidance on this project.

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