



Background

- The technique of Lesion Sterilization and Tissue Repair (LSTR) offers a minimally invasive alternative to traditional treatments for necrotic primary molars, such as pulpectomy and extraction<sup>1</sup>.
- Primary molars often have intricate canal anatomy far more complex than their permanent successors<sup>3</sup>.
- The AAPD recommends LSTR over pulpectomy in teeth with root resorption or to retain teeth for up to 12 months that otherwise would be extracted<sup>4</sup>.
- One study found that LSTR had a success rate of 76% compared to pulpectomy success rate of 47% in teeth with root resorption<sup>4</sup>.
- Despite its demonstrated efficacy the usage of LSTR by pediatric dentists remains unclear.

Objective

The aim of this study was to assess the frequency of LSTR use among pediatric dentists, explore barriers to its adoption, and identify factors influencing its utilization.

Methods

A survey consisting of 19 questions was distributed via email to 6,636 members of the AAPD. The survey gathered demographic data, evaluated the current use of LSTR, and examined perceived barriers. Bivariate analyses using chi-squared and Fisher’s exact tests examined associations between provider characteristics and LSTR usage.

Results

- A total of 314 pediatric dentists completed the survey, with 26% reporting LSTR use.
- Bivariate analysis revealed that workplace setting was significantly associated with LSTR adoption ( $p = 0.010$ ); 50% of academic institution practitioners used LSTR compared to 26% in private practice.
- LSTR was primarily used for children aged 5–6 years (77%) and most commonly on primary second molars (54%).
- Clindamycin, metronidazole, and ciprofloxacin was the most frequently used medicament (45%), with 57% using LSTR less than once per month.
- Among non-users (74%), the main barriers to LSTR adoption were lack of training (69%) and a preference for traditional treatments like pulpectomy or extraction (32%).
- Majority of the respondents who reported never using LSTR expressed interest in continuing education courses (85%).

Table 1. Factors Affecting LSTR Utilization (Bivariate Analysis)

	Yes	No	
Are you currently or have you ever used LSTR in your practice?	N=83 <sup>1</sup>	N=231 <sup>1</sup>	p-value <sup>2</sup>
Geography of Residency Program			0.4
Rural	6 (18%)	28 (82%)	
Suburban	44 (29%)	107 (71%)	
Urban	33 (26%)	95 (74%)	
Current Workplace Description			0.01
Private Practice	66 (26%)	184 (74%)	
Public Health	1 (4.5%)	21 (95%)	
University/Academic Insitution	12 (50%)	12 (50%)	
Hospital	3 (27%)	8 (73%)	
Combined (Hospital and University)	1 (20%)	4 (80%)	
Years Practicing			0.3
0-4 years	22 (26%)	63 (74%)	
5-10 years	11 (20%)	45 (80%)	
11-15 years	15 (38%)	25 (63%)	
16-20 years	10 (34%)	19 (66%)	
21+ years	25 (24%)	78 (76%)	
Age of Practitioner			0.9
20-30 years	5 (19%)	21 (81%)	
31-40 years	29 (27%)	78 (73%)	
41-50 years	22 (32%)	46 (68%)	
51-60 years	16 (26%)	45 74%)	
61-70 years	7 (22%)	25 (78%)	
71-80 years	4 (21%)	15 (79%)	
81+ years	0 (0%)	1 (100%)	

<sup>1</sup>n (%)  
<sup>2</sup>Pearson’s Chi-squared test, Fisher’s exact test

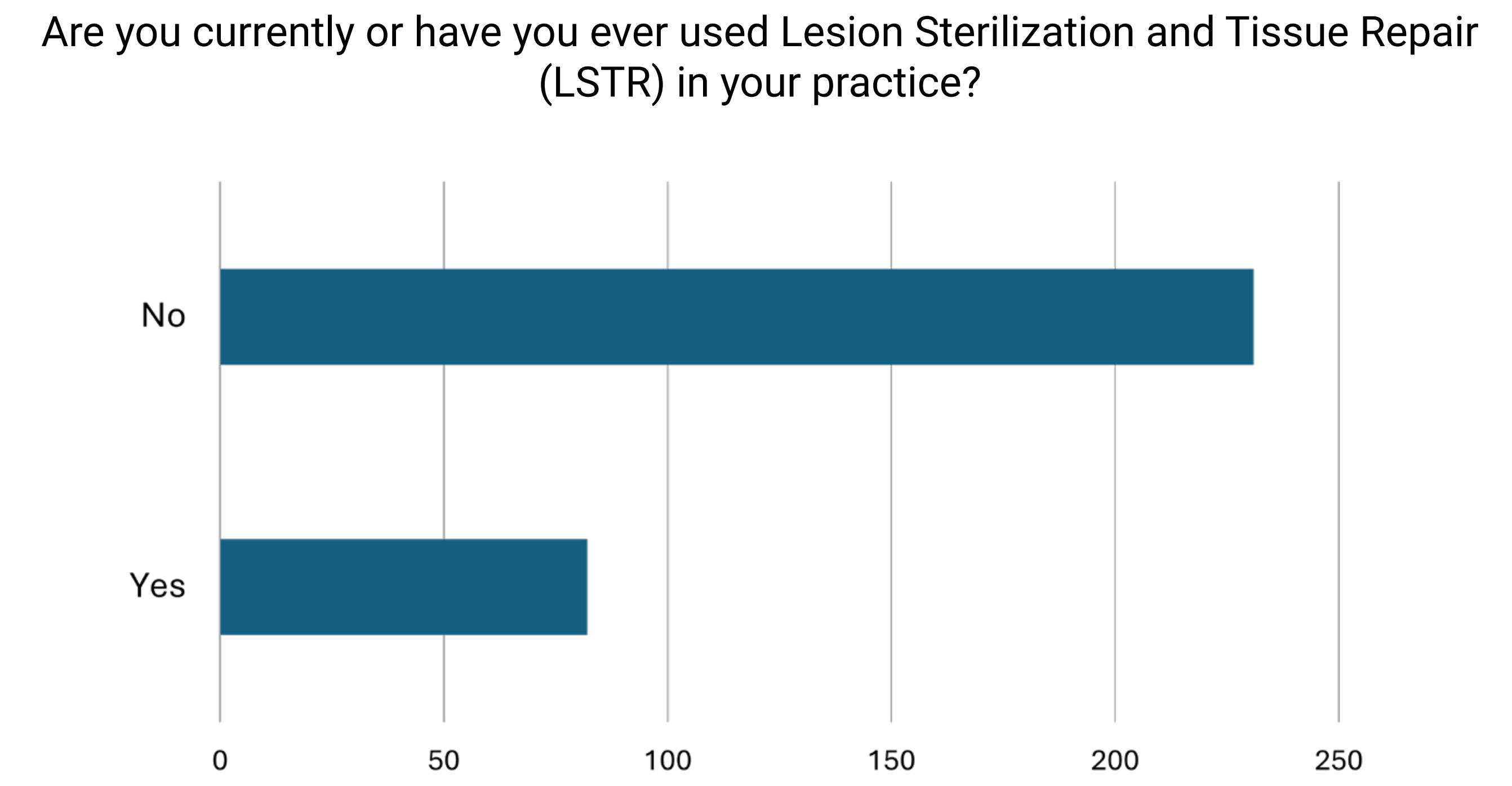


Figure 1. LSTR Use by Pediatric Dentists

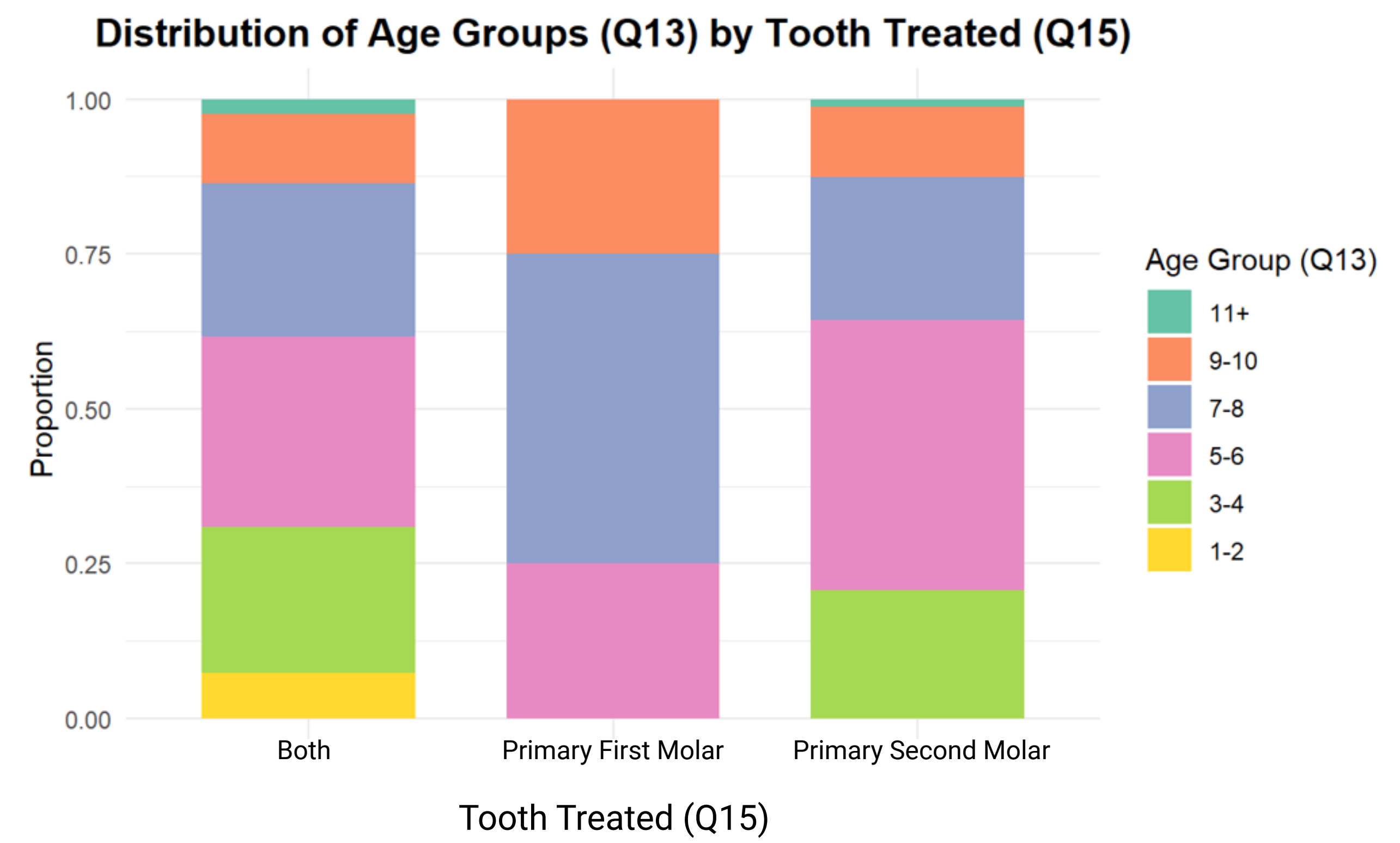


Figure 2. Age Group (in years) Treated with LSTR



Figure 3. Distribution of Age Group by Tooth Treated

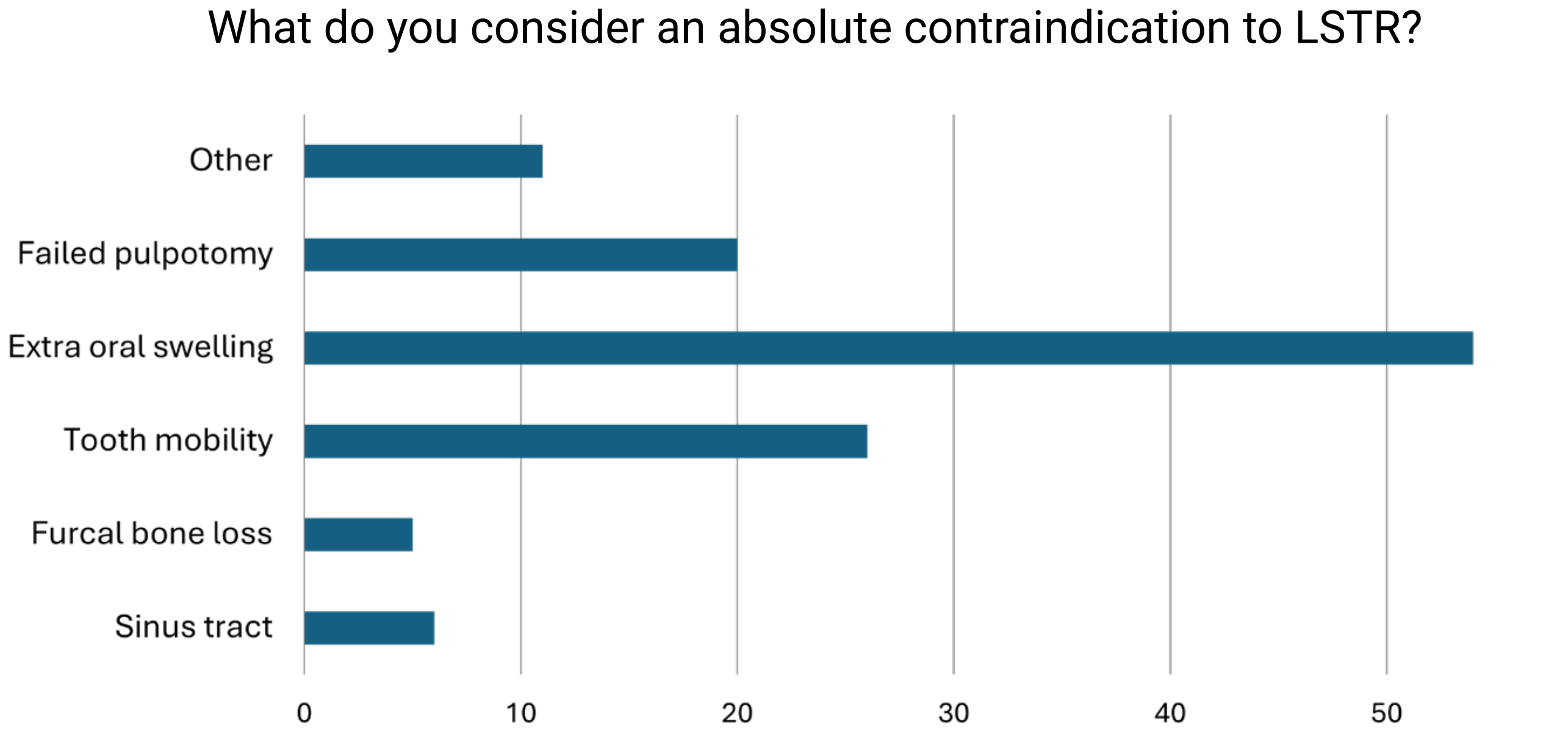


Figure 4. Contraindications to LSTR

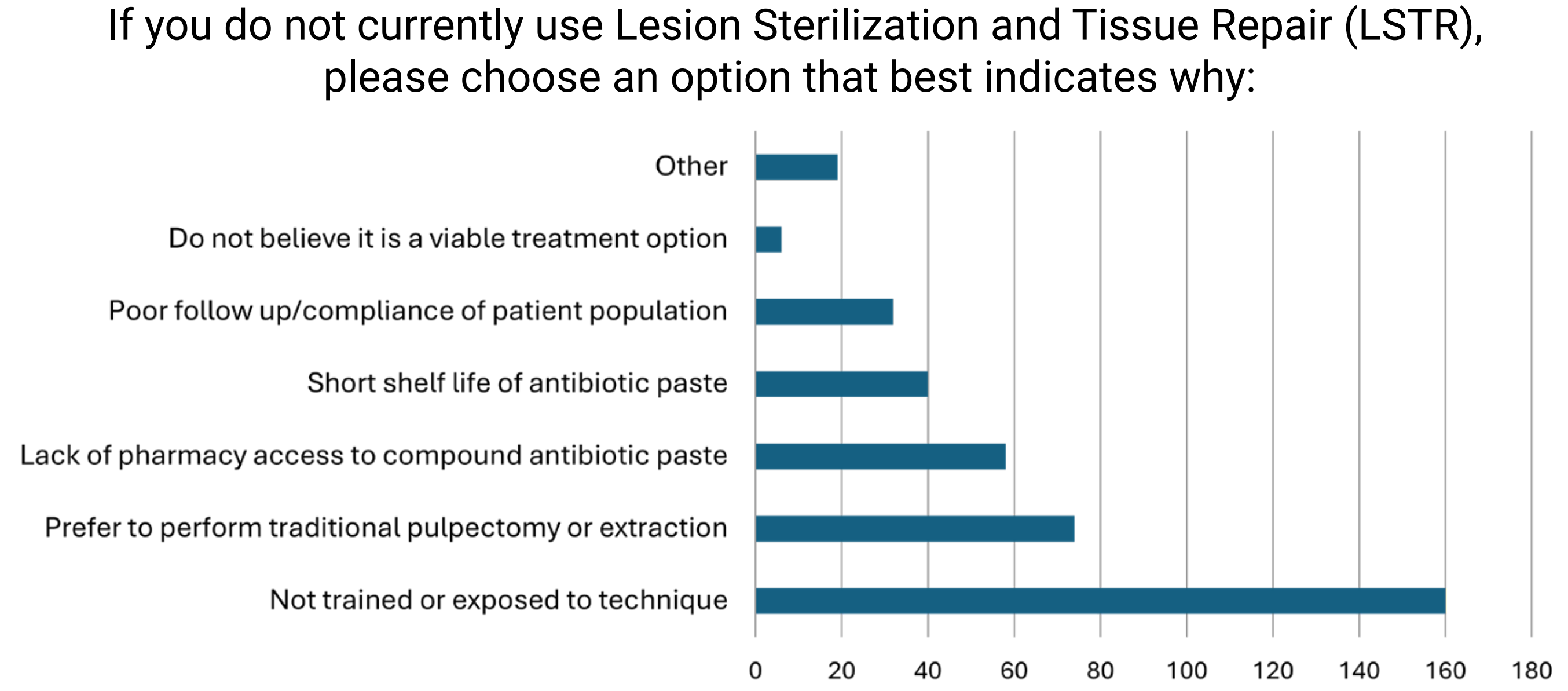


Figure 5. Distribution of Non-Use Reasons

Conclusion

- LSTR remains underutilized among pediatric dentists due to lack of training and/or a preference for traditional treatments.
- The variability in usage highlight the need for targeted training programs, and broader dissemination of evidence-based guidelines to address knowledge gaps and improve confidence in its clinical use for necrotic primary molars.

Limitations

- This study was limited by the low response rate.
- Additionally, the survey was only sent to pediatric dentists who are members of the AAPD.

Acknowledgements

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