

# The Adoption of LSTR in the Pediatric Dental Residency Setting

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## BACKGROUND

- **Definition:** Lesion Sterilization and Tissue Repair (LSTR) is a minimally invasive technique in pediatric dentistry used for managing necrotic teeth. It is considered an alternative to traditional methods such as pulpectomy or tooth extraction followed by the placement of space maintainers.<sup>4</sup>
- **Key Features:**
  - Focuses on sterilizing infected lesions and promoting natural tissue repair.
  - Utilizes a combination of antibacterial agents to eliminate infection.<sup>2</sup>
  - Aims to preserve the natural structure and function of the affected tooth, in place of a space maintainer.<sup>1</sup>
- **Clinical Advantages:**
  - Reduces the need for invasive procedures like pulpectomy.
  - Minimizes discomfort and recovery time for pediatric patients.
  - Offers a cost-effective solution compared to traditional methods.

## PURPOSE

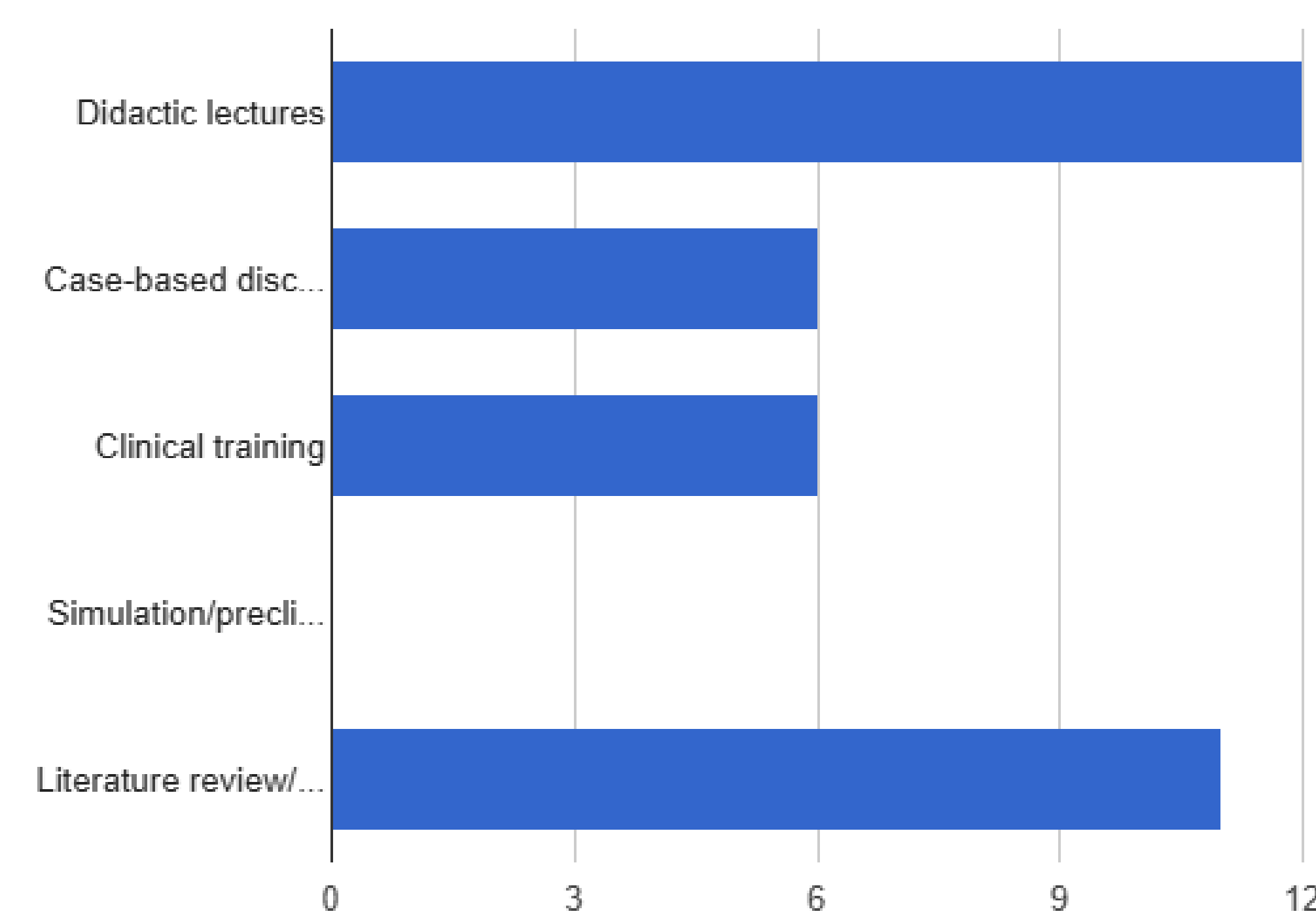
- **Objective:** To evaluate the adoption and utilization of Lesion Sterilization and Tissue Repair (LSTR) techniques by pediatric dental residency program directors in their training programs. The study also aims to assess the extent of didactic and clinical instruction on LSTR, faculty familiarity with the technique, and the factors influencing its integration into residency programs.
- **Purpose:** The study aims to provide insights into the current trends of LSTR utilization within pediatric dental residency programs. The findings will inform future educational initiatives, identify barriers to adoption, and guide further research on the role of LSTR in pediatric dental education and clinical care.

## METHODS

- This study was approved by the University of Nebraska Medical Center Institutional Review Board (IRB).
- Contact information for American Academy of Pediatric Dentistry (AAPD) recognized program directors was obtained through the AAPD.
- A web-based 18-question survey was distributed via email to program directors of accredited pediatric dental residency programs. The survey focused on program demographics, clinical use of LSTR, extent of didactic and clinical instruction, faculty familiarity with the technique, and factors influencing program-level adoption.
- Participation was voluntary, with no financial compensation, and all responses remained anonymous.
- Participants received an email with background information and a link to complete the survey via REDCap.
- Descriptive statistics were used to summarize the data through REDCap.

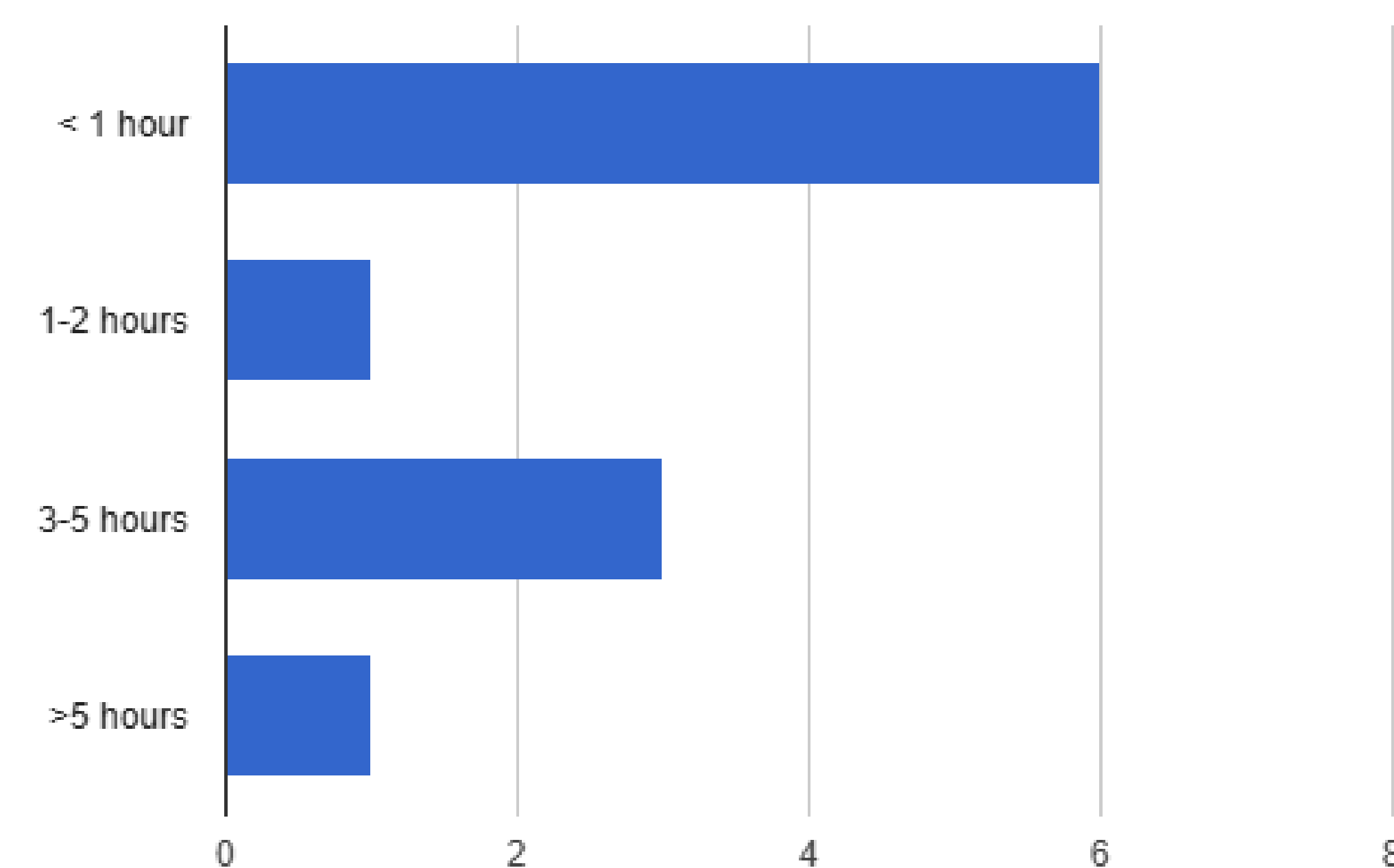
## RESULTS

- 12 respondents completed the survey
- Hospital-based (6, 50.0%), University-based (3, 25.0%), Community-based (3, 25.0%)
- Very familiar (8, 66.7%), Moderately familiar (2, 16.7%), Slightly familiar (2, 16.7%)



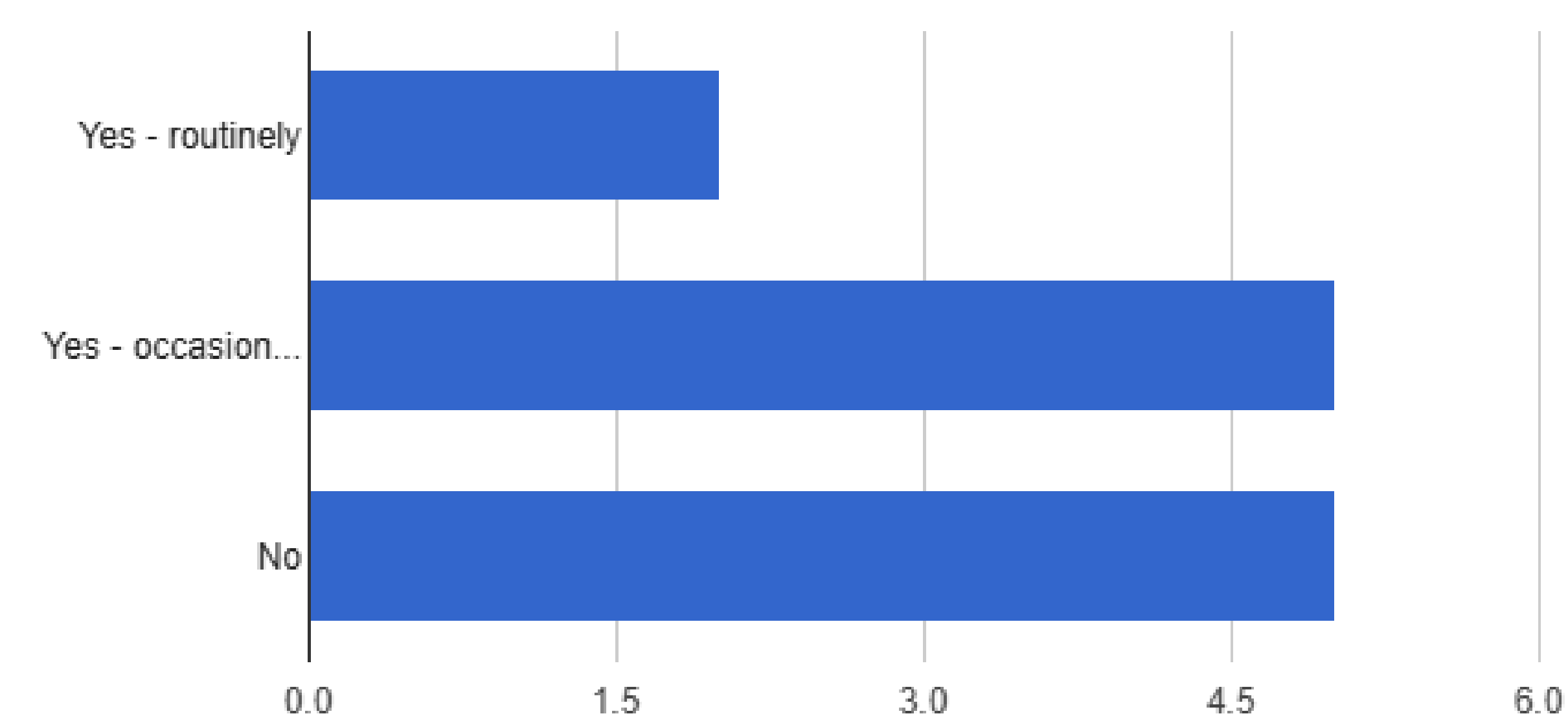
Methods of teaching LSTR in residency programs.

Figure 1: This figure illustrates the distribution of how LSTR is introduced within pediatric dental residency programs. The majority of programs report formal didactic teaching, and a substantial portion also include informal instruction such as lectures or case discussions.



Approximately how much time is dedicated to teaching LSTR (annually)

Figure 2: This figure depicts when LSTR is introduced during residency training (e.g., first year, second year, or variably throughout the program).



Use of LSTR in clinic

Figure 3: This figure shows the frequency of LSTR use in clinical practice among residency programs. While a small proportion report routine use (17%), most programs utilize LSTR occasionally (42%) or not at all (42%).

## CONCLUSIONS

### Key Findings:

- LSTR is widely known across pediatric residency programs, demonstrating strong baseline awareness.
- LSTR is commonly introduced, but not consistently structured into formal curricula, suggesting variability in depth of education and training.
- A notable gap exists between familiarity with LSTR and routine clinical implementation.

### Clinical Utilization:

- 17% of programs report routine clinical use
- 42% report occasional use
- 42% report no clinical use
  - These findings indicate that LSTR remains underutilized despite widespread awareness

### Barriers to Implementation:

- Regulatory and pharmacy restrictions
  - Many programs are unable to store compounded triple antibiotic paste in-house due to JCAHO/hospital pharmacy regulations
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  - Many programs are unable to store compounded triple antibiotic paste in-house due to JCAHO/hospital pharmacy regulations
  - Requires patient-specific prescriptions for each case, reducing efficiency
- Limited faculty experience and training resources (additive insight)
  - Contributes to hesitation in clinical implementation
- Lack of inclusion in standardized guidelines (additive insight)
  - Programs rely heavily on established protocols for adoption

### Overall:

- LSTR is in a transitional phase currently, it is well known, moderately taught, but inconsistently practiced in residency programs. The existing barriers are primarily systemic and logistical, rather than due to lack of interest or skepticism.

## REFERENCES

1. Achanta, A., Reche, A., Dakhale, R., & Bharate, R. R. (2023). "A Comprehensive Review of Lesion Sterilization and Tissue Repair: An Alternative for Pulpectomy in Deciduous Teeth." Published in *Cureus*, 15(11), e48218. DOI: 10.7759/cureus.48218
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3. Singh, Kartikaya; Reddy, Arjun; Arya, Ashtha; Sridhar, Vaishnavi; Ranjan, Maitreyi; Bulbule, Nilesh (2024). "Lesion Sterilization Tissue Repair: A Review." Published in *Journal of Pharmacy and Bioallied Sciences*, 16(Suppl 1): S75-S77, February 2024. DOI: 10.4103/jpbs.jpbs\_411\_23
4. Achanta A, Reche A, Dakhale R, Bharate RR. A Comprehensive Review of Lesion Sterilization and Tissue Repair: An Alternative for Pulpectomy in Deciduous Teeth. *Cureus*. 2023 Nov 3;15(11):e48218. DOI: 10.7759/cureus.48218.