

INTRODUCTION

Amalgam has been used in dentistry for many years and has a track record of success. Multiple studies have shown amalgam restorations to have a higher survival rate, greater resistance to wear and fracture, and lower replacement rate than tooth-colored restorative materials¹⁻⁹. Further, amalgam restorations can be used when ideal isolation is elusive. This is relevant when a child patient is uncooperative and keeping the tooth dry becomes a challenge. However, as amalgam cannot mimic the color or translucency of the natural tooth, the extent of its use is limited when esthetics are a concern. Further, the safety of amalgam has been questioned by some due to the presence of mercury in its composition. Although amalgam has been declared as safe and effective in studies and by major health organizations, practitioners often come across parents and patients who are concerned about the safety of amalgam¹. There is also a desire by some parents to use less amalgam because of esthetics and perceived safety concerns. There may be greater pressure from parents in higher socioeconomic strata¹⁰. As a result, many pediatric dentists take these concerns into account when selecting restorative materials for posterior primary teeth. The purpose of this study is to: 1) Assess how many pediatric dentists in the United States currently utilize amalgam in their practice; 2) Correlate use of amalgam with practitioner attributes such as years of experience, location and type of practice; and 3) Assess why some pediatric dentists do not utilize amalgam in their practice and the challenges they face in placing amalgam restorations.

METHODS

A 16-item questionnaire was emailed to all active members and post-doctoral student members of the American Academy of Pediatric Dentistry (AAPD). The questionnaire collected data related to participants' demographic factors, frequency of amalgam use, challenges faced in the use of amalgam, opinions regarding amalgam safety, treatment planning and replacement of amalgam restorations. The Institutional Review Board of One Brooklyn Health reviewed the study and approved the conduct of this research. The collected data was analyzed by a statistician according to accepted statistical methodology. Frequencies and descriptive statistics were used to analyze the data.

RESULTS

- 70 responses were received.
- There were 19 residents, 24 practitioners with less than 5 years of pediatric dentistry experience, 10 practitioners with 5-10 years of experience and 17 with greater than 10 years of experience.
- Practitioners who work in private practice or corporate setting constituted about 60% of respondents and those who work in community health centers, hospitals, dental schools, or military settings constituted about 40%.
- Most of the respondents were from the Northeast region (38), followed by Midwest (10), West (9), Southeast (8) and Southwest (5).
- 53% practiced in an urban location while 41% practiced in suburban and 6% practiced in rural locations. Most of the participants' primary payor source is Medicaid/public payor source (68.5%).
- The remaining respondents reported PPO insurances or fee for service as their primary payor source.
- The frequency distribution graphs for survey responses are shown in Figures 1-4.

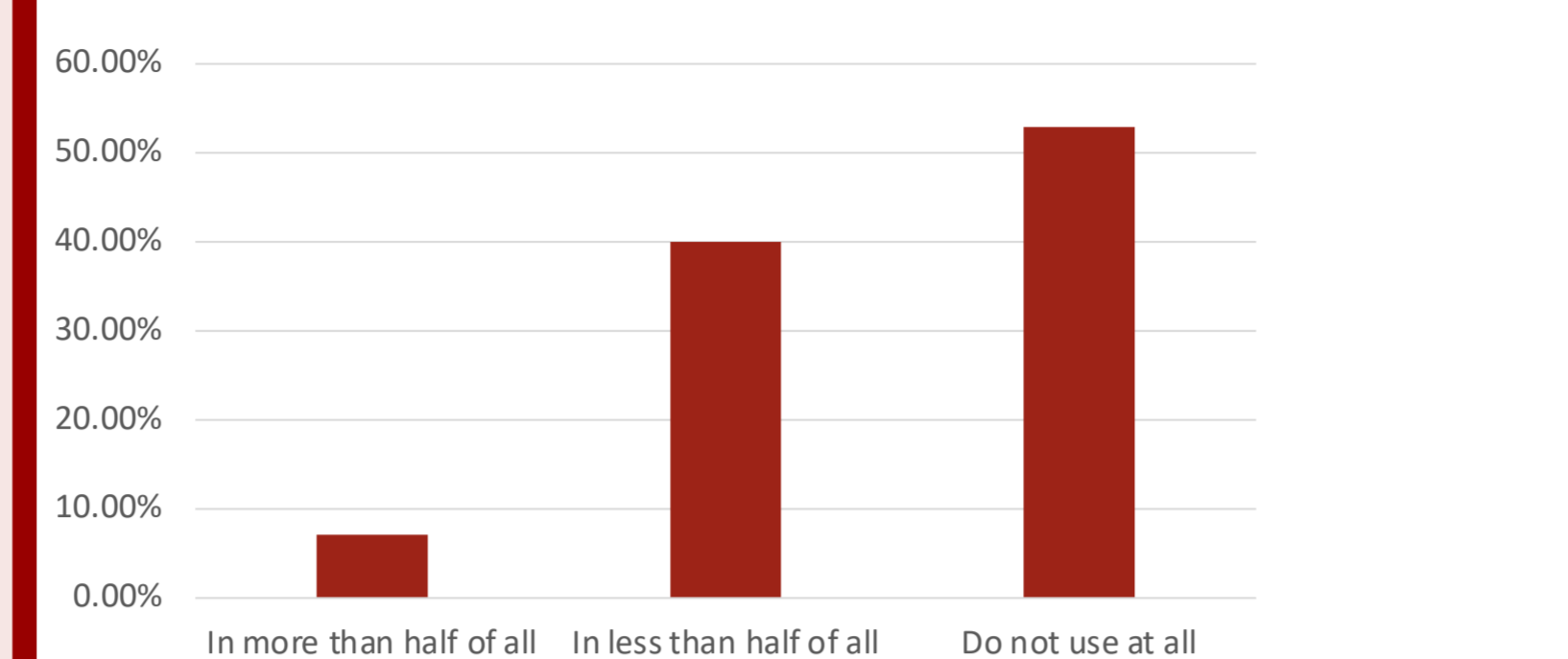


Fig 1: Frequency of amalgam usage

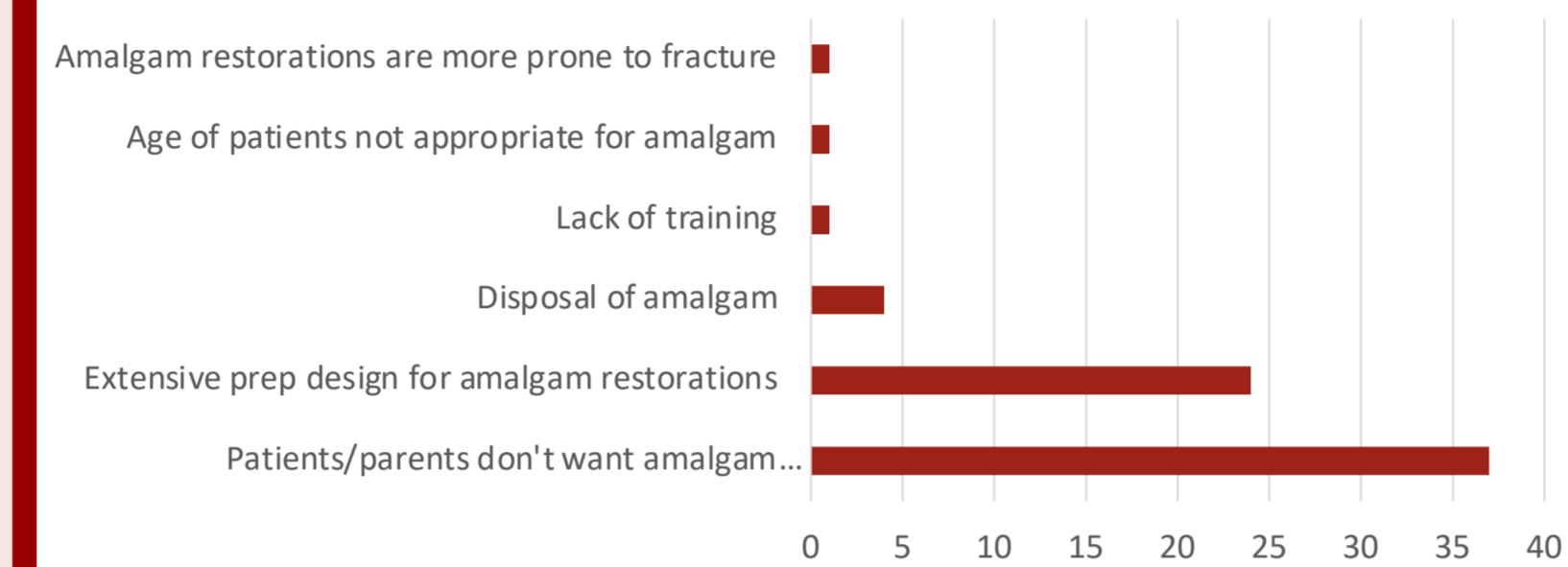


Fig 3: Biggest challenge faced by providers in placing amalgam restorations

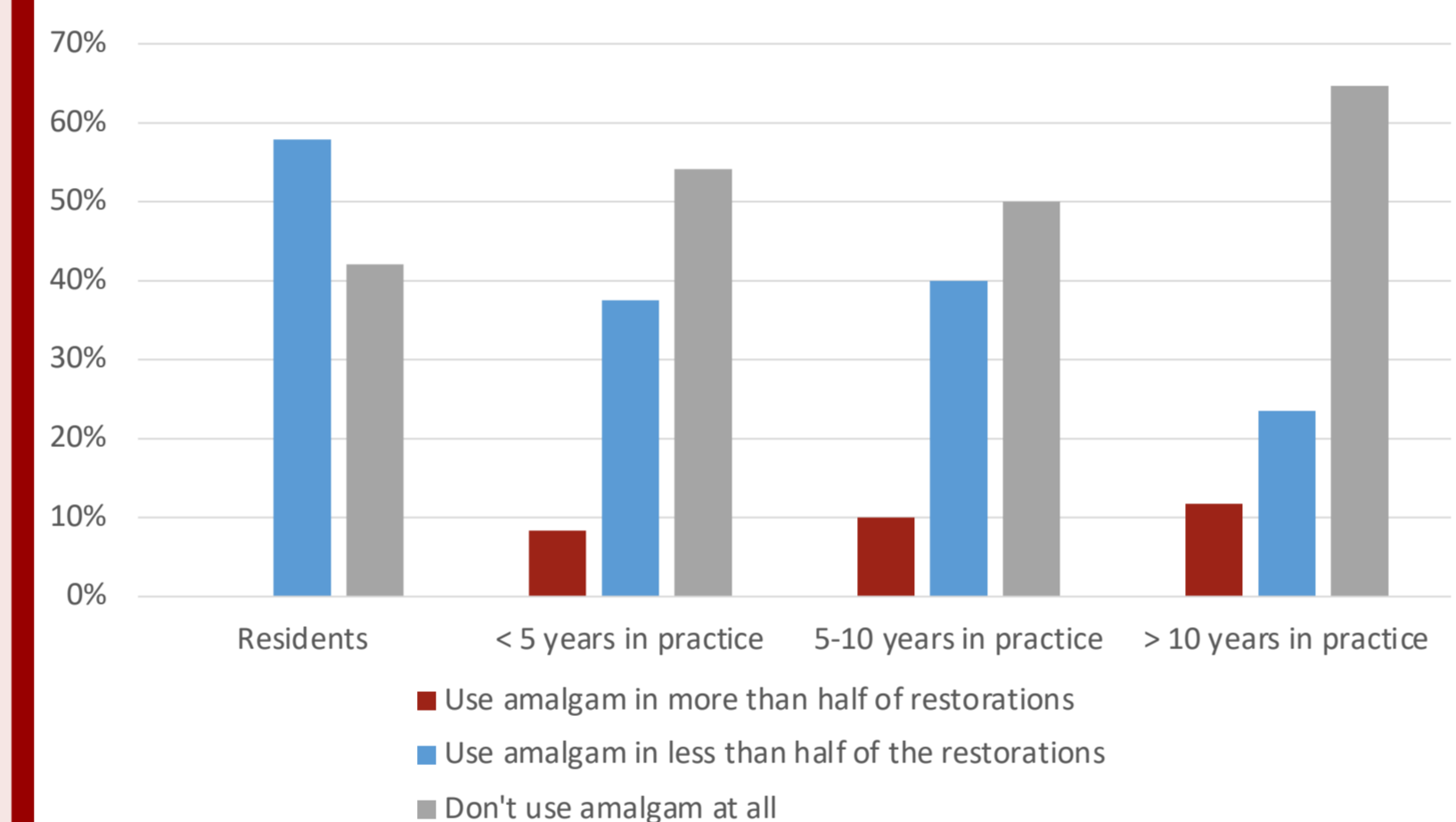


Fig 5: Frequency of amalgam usage vs practitioner experience

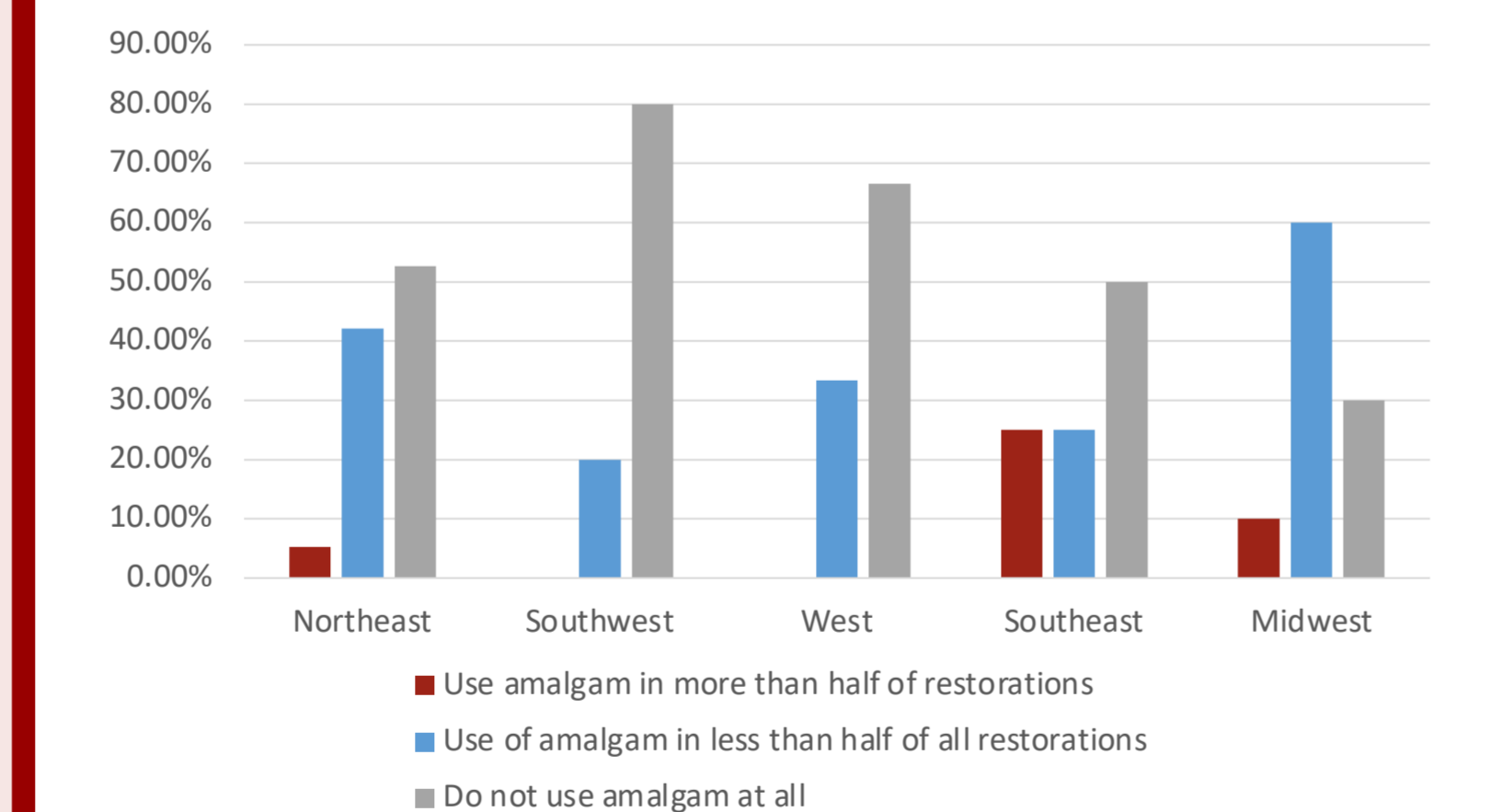


Fig.7: Frequency of amalgam usage vs location of practice

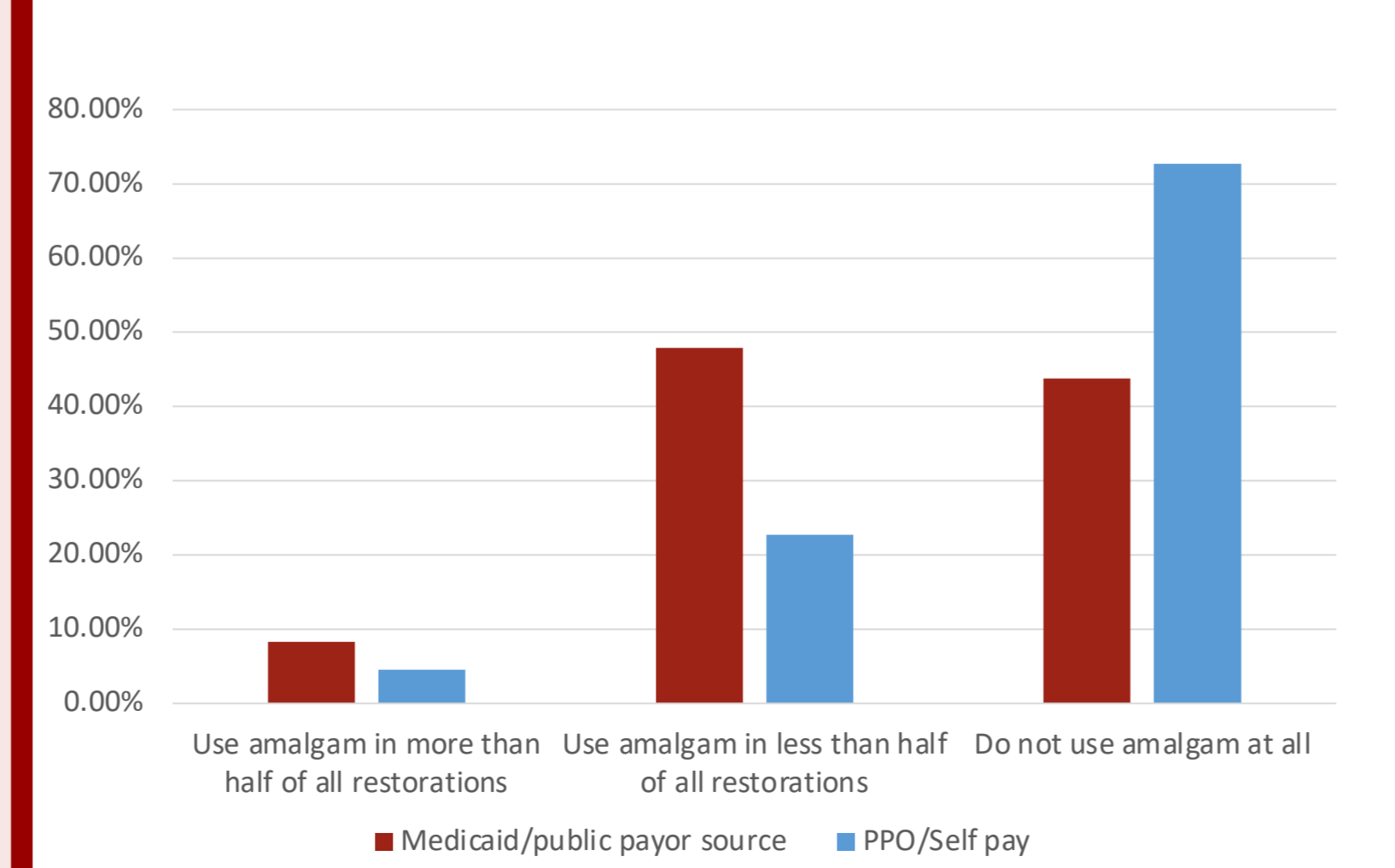


Fig 9: Frequency of amalgam usage vs primary payor source

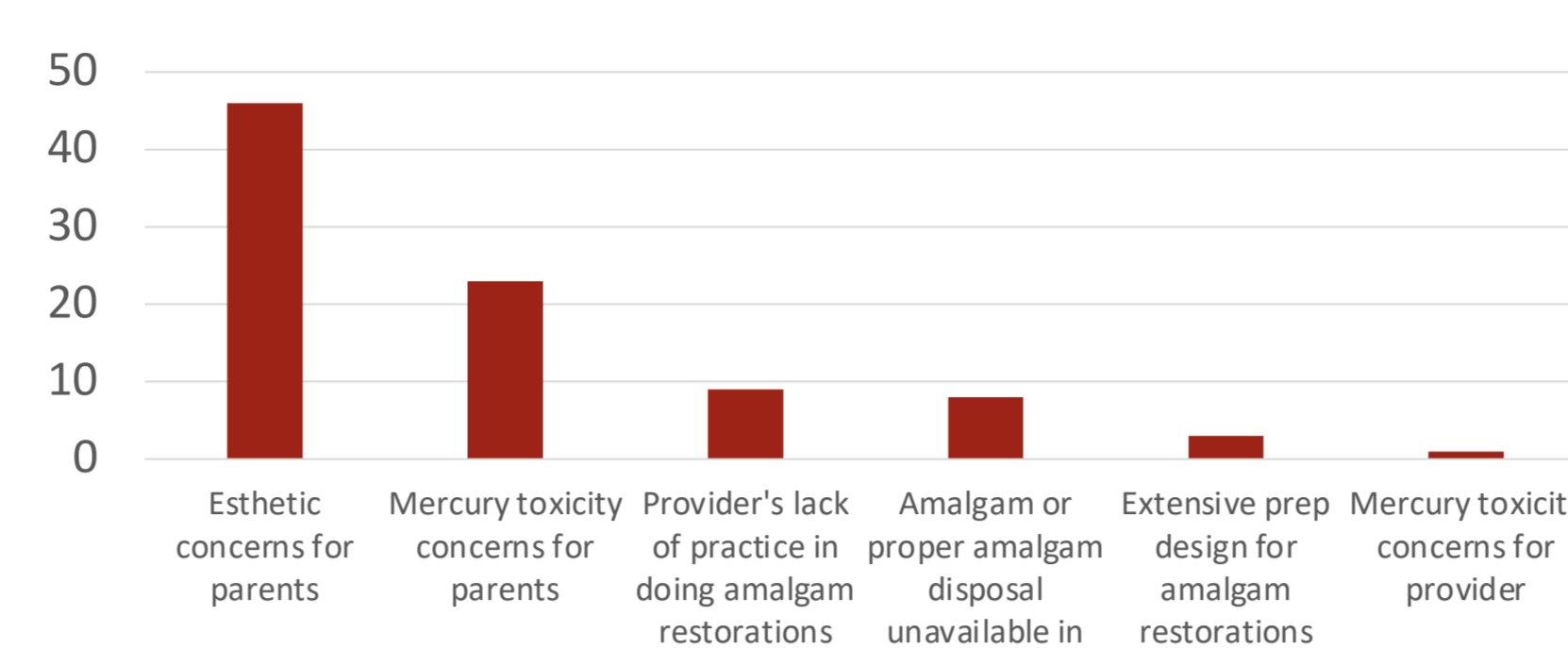


Fig 2: Reasons for not using amalgam

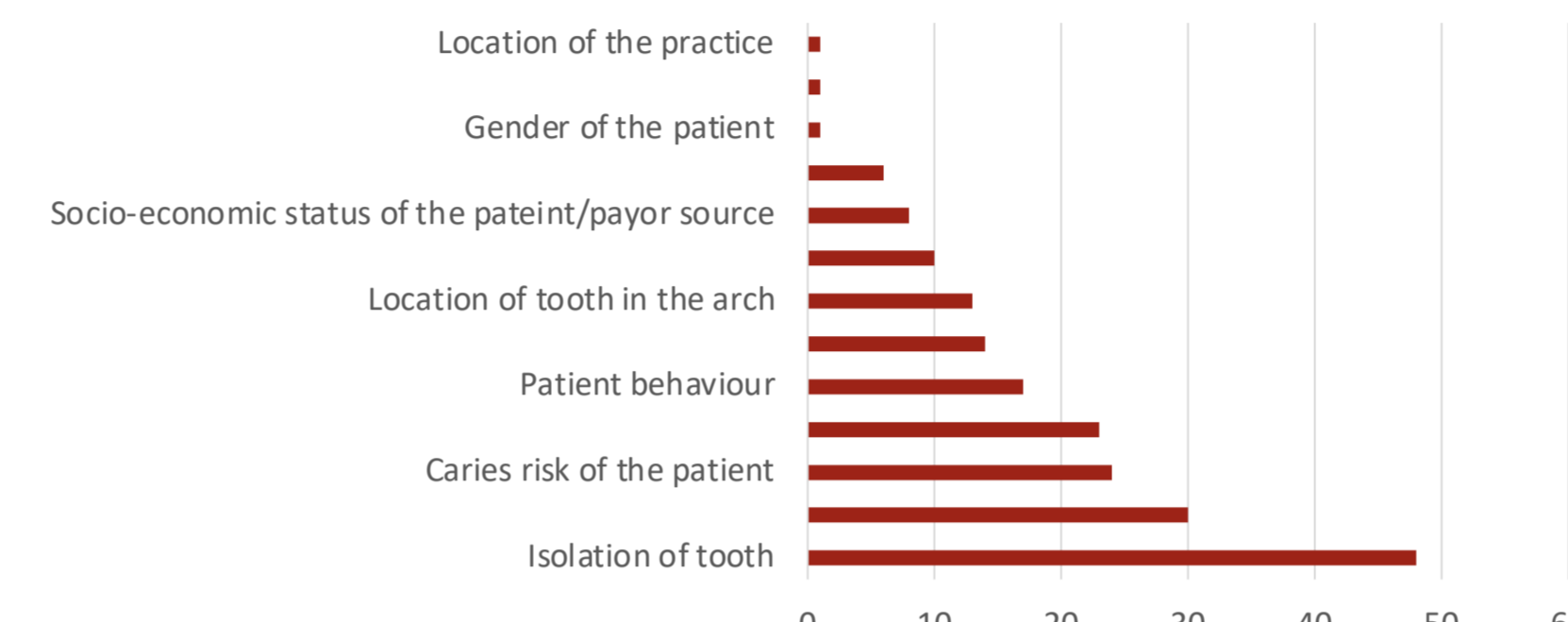


Fig 4: Factors that providers take into consideration when treatment planning for amalgam restorations

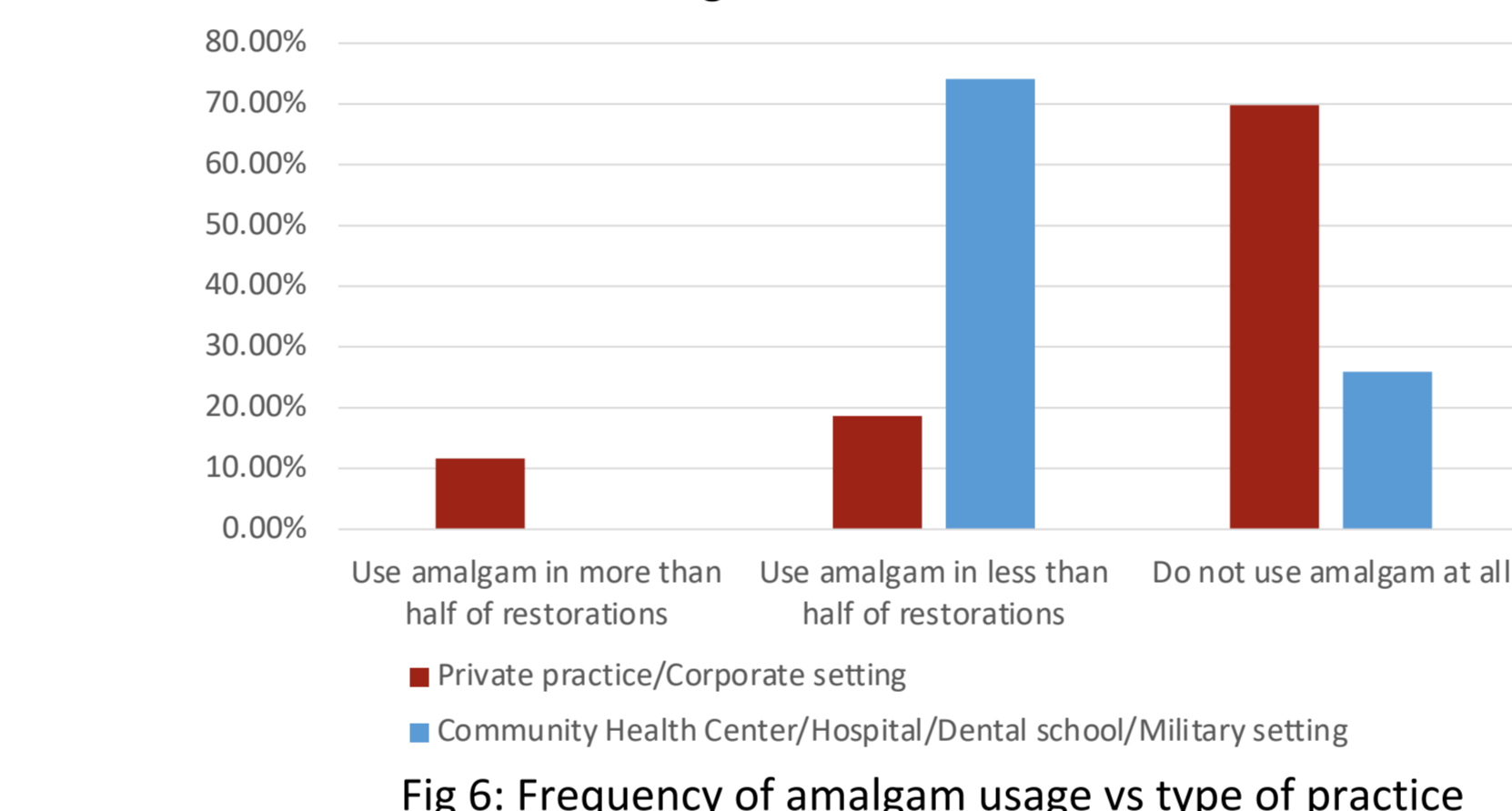


Fig 6: Frequency of amalgam usage vs type of practice

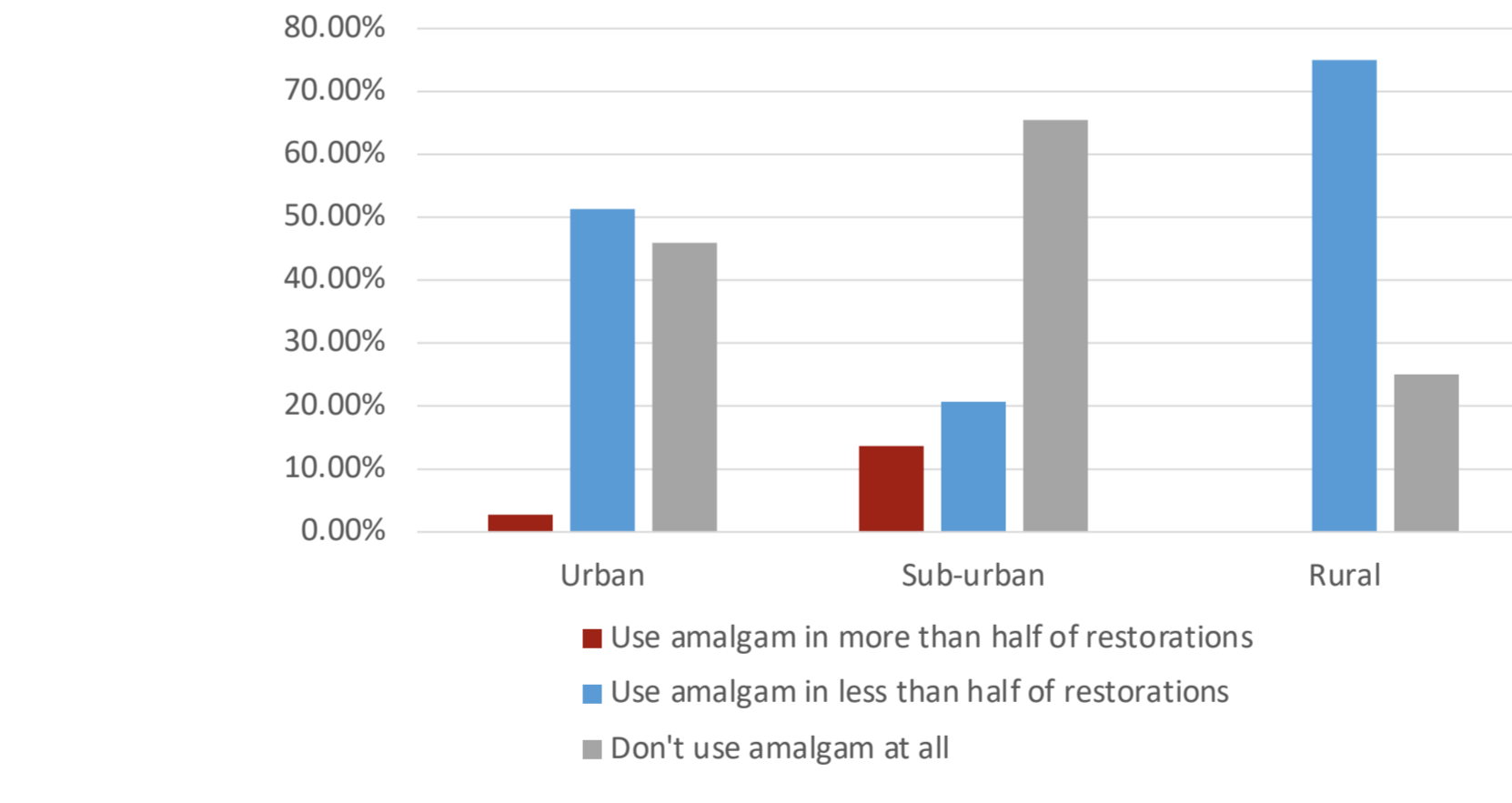


Fig. 8: Frequency of amalgam usage vs type of community

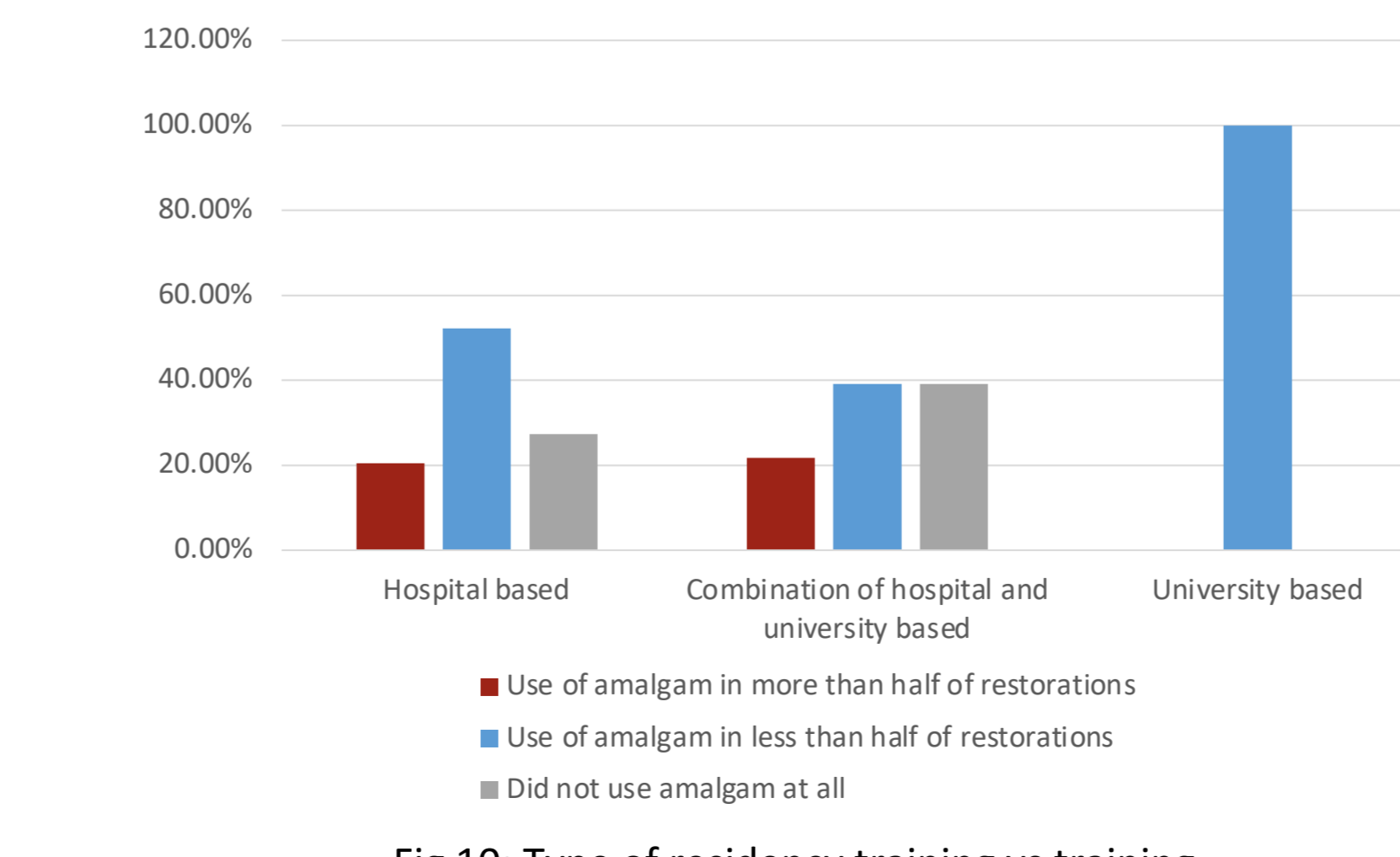


Fig 10: Type of residency training vs training received in placing amalgam restorations

DISCUSSION

The survey results show that most pediatric dentists do not use amalgam in their practice. Only 7% of the respondents said they use amalgam frequently. 53% of the respondents said they do not use amalgam in their practice at all (Fig. 1). Those who received their residency training from a university-based program said that they placed amalgam restorations in their residency, even if not frequently, whereas some residents in hospital based or a combined program did not use amalgam at all (Fig. 10). This may show that university-based programs give more training in amalgam restorations than hospital-based or combined residency programs.

The main reasons cited for not using amalgam were patients/parents concerns for esthetics followed by parents' concerns for mercury toxicity, practitioner not being comfortable doing amalgam restorations because of lack of practice, and unavailability of amalgam in the office (Fig. 2). Most of the respondents also said that the biggest challenge that they face in placing amalgam restorations is that patients/parents do not want amalgam restorations (Fig. 3).

Frequency of amalgam use does not seem to be related to practitioners' years of experience, as practitioners at all experience levels reported using amalgam infrequently or not at all (Fig. 5). In fact, practitioners with less experience (including residents) reported placing more amalgam restorations than those with more than 10 years of experience. Type of practice and primary payor source (Fig. 6 and Fig. 9) tended to be bigger factors in using amalgam as the majority of practitioners in private practice/corporate setting and the PPO/self-pay group reported not using amalgam at all in their practice. Given the role of parental preference in providers' material selection, this may be related to pressure from parents in higher socioeconomic strata to choose other materials. Similarly, a higher percentage of rural and urban practitioners use amalgam in their practice as compared to practitioners from suburban communities (Fig. 8). Finally, more frequent amalgam usage is seen among practitioners from the Southeast. Practitioners from the Southwest and West reported not using amalgam at all or using it less frequently.

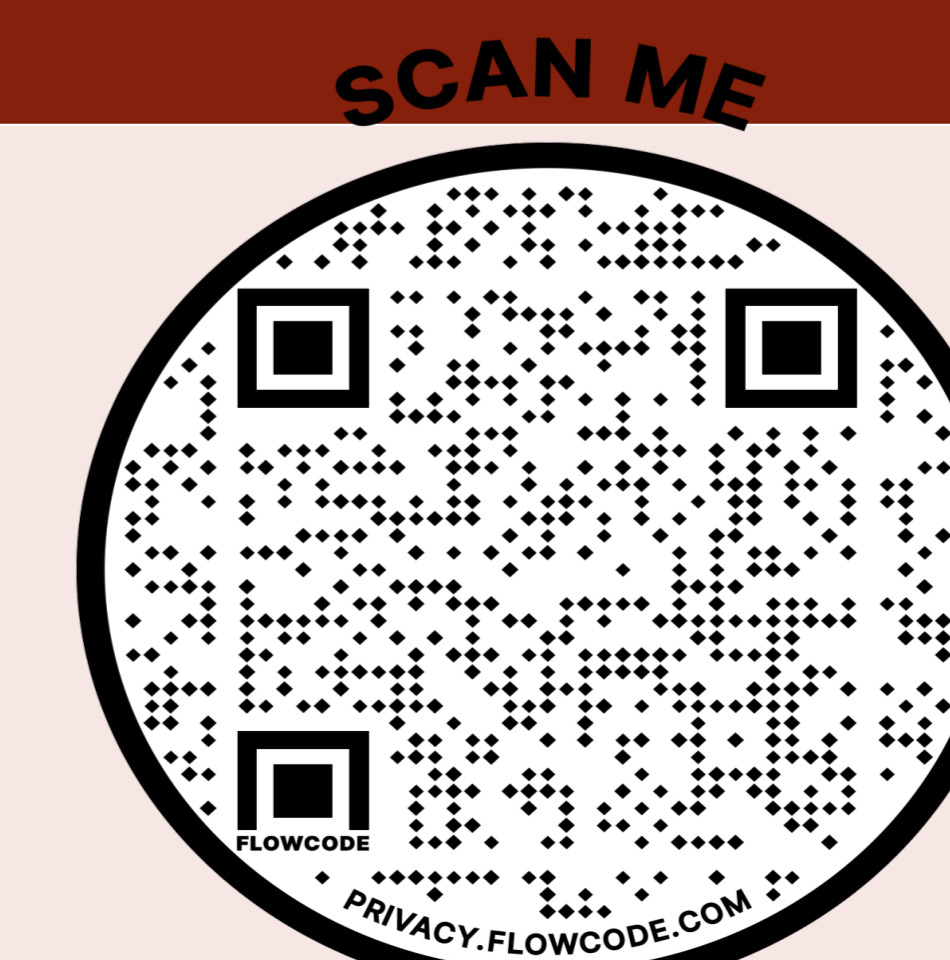
The limitations of this study include the the small sample size and skewed data due to a relatively higher response rate by practitioners from the Northeast as compared to other regions.

CONCLUSIONS

- A majority of current pediatric dentists do not place amalgam restorations. Most of the of the practitioners surveyed do not use amalgam at all in their practice, and those who do use it less than other restorative materials.
- Providers reported parental concern about esthetics as the biggest challenge in using amalgam.
- Providers cited isolation challenges and patient/parent preferences as the most important factors they consider when treatment planning for amalgam restorations.
- University-based residency programs may give more training in placing amalgam restorations as compared to hospital-based or hybrid university and hospital-based programs.
- Amalgam is used least frequently in private practice/corporate settings, PPO or self-pay offices, and in suburban locations.
- Amalgam is used least frequently in southwest and western states.

REFERENCES

References



Survey

