

INTRODUCTION

For young or medically complex pediatric patients, dental rehabilitation under general anesthesia (GA) is often the only feasible treatment option. The role of local anesthesia (LA) during these procedures, however, remains a subject of ongoing clinical debate. While proponents cite benefits such as intraoperative hemostasis, reduced physiologic stress, and postoperative analgesia, randomized controlled trials have yielded conflicting results^{1,2}. Some studies show no significant difference in postoperative pain compared to systemic analgesics alone^{3,4}. Concerns about soft tissue self-injury from residual numbness, local anesthetic systemic toxicity, and agitated emergence remain commonly cited barriers to routine use³.

Despite this ongoing debate, practice patterns surrounding LA use during pediatric dental GA vary considerably across providers, and no standardized guidelines currently exist. Prior survey research among dentist anesthesiologists has highlighted significant variability in attitudes and clinical decision-making, underscoring the need for a broader, cross-specialty perspective^{4,5}. This national survey aims to compare the practices, attitudes, and decision-making factors surrounding LA use during pediatric dental rehabilitation under GA between pediatric dentists (PDs) and dental anesthesiologists (DAs), with the goal of identifying areas of divergence and informing future evidence-based, interdisciplinary guidelines.

METHODS

The study design is a cross-sectional study which consisted of a questionnaire sent out via email to members of AAPD (American Academy of Pediatric Dentistry) and ASDA (American Society of Dental Anesthesiologists). 23 questions were for pediatric dentists, while 18 questions were for dentist anesthesiologists. It was hosted by SurveyMonkey to meet security standards for the transmission of online data. 4 weeks of reminders were sent.

Transport layer security protocol was used to encrypt and transmit data which are frequently backed up in an encrypted storage. Frequencies for each of the questions were collected and summarized. Nonparametric analyses were performed as appropriate.

RESULTS

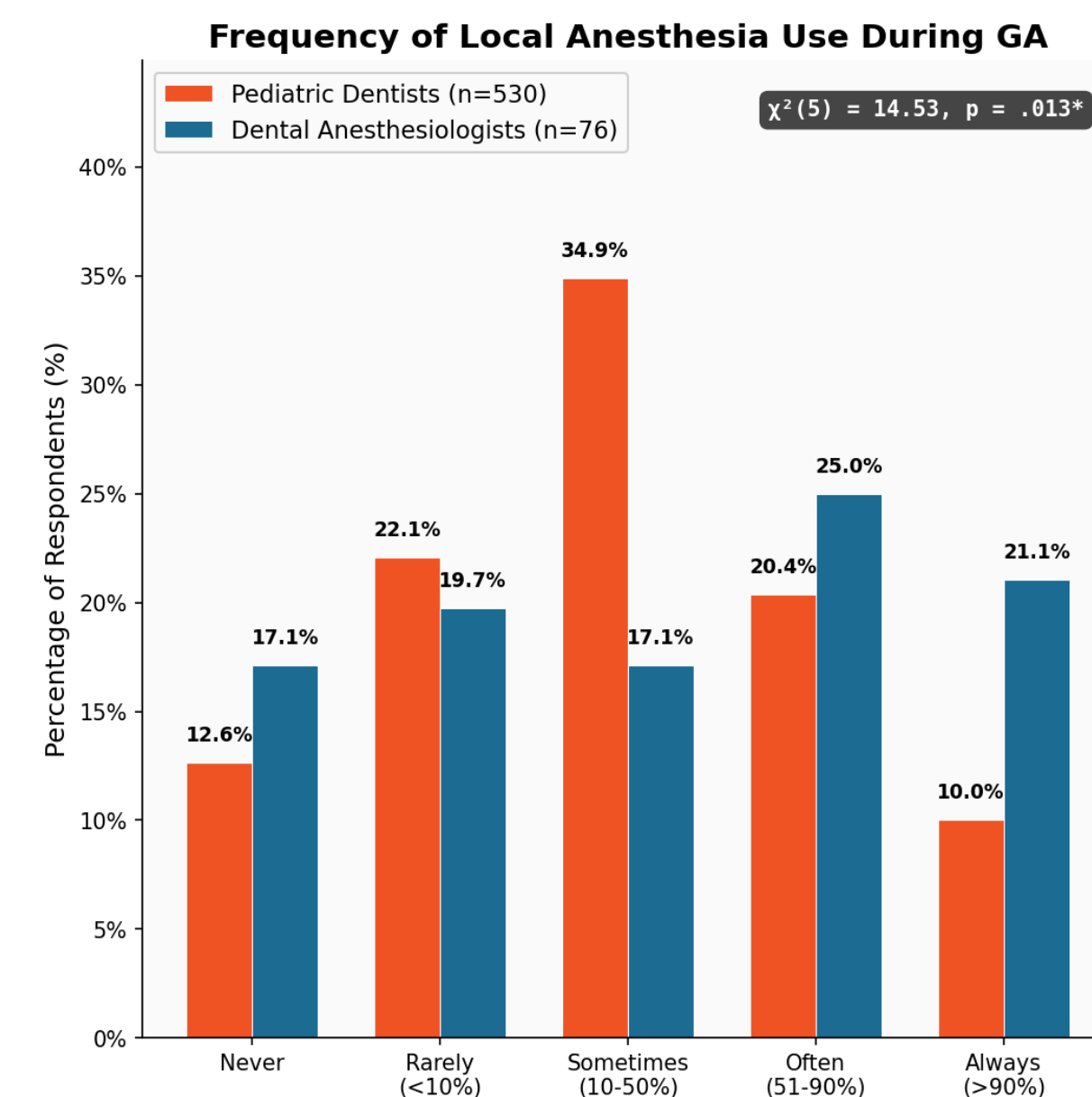


Fig 1. Frequency of Local Anesthetic Administration during GA between PDs and DAs

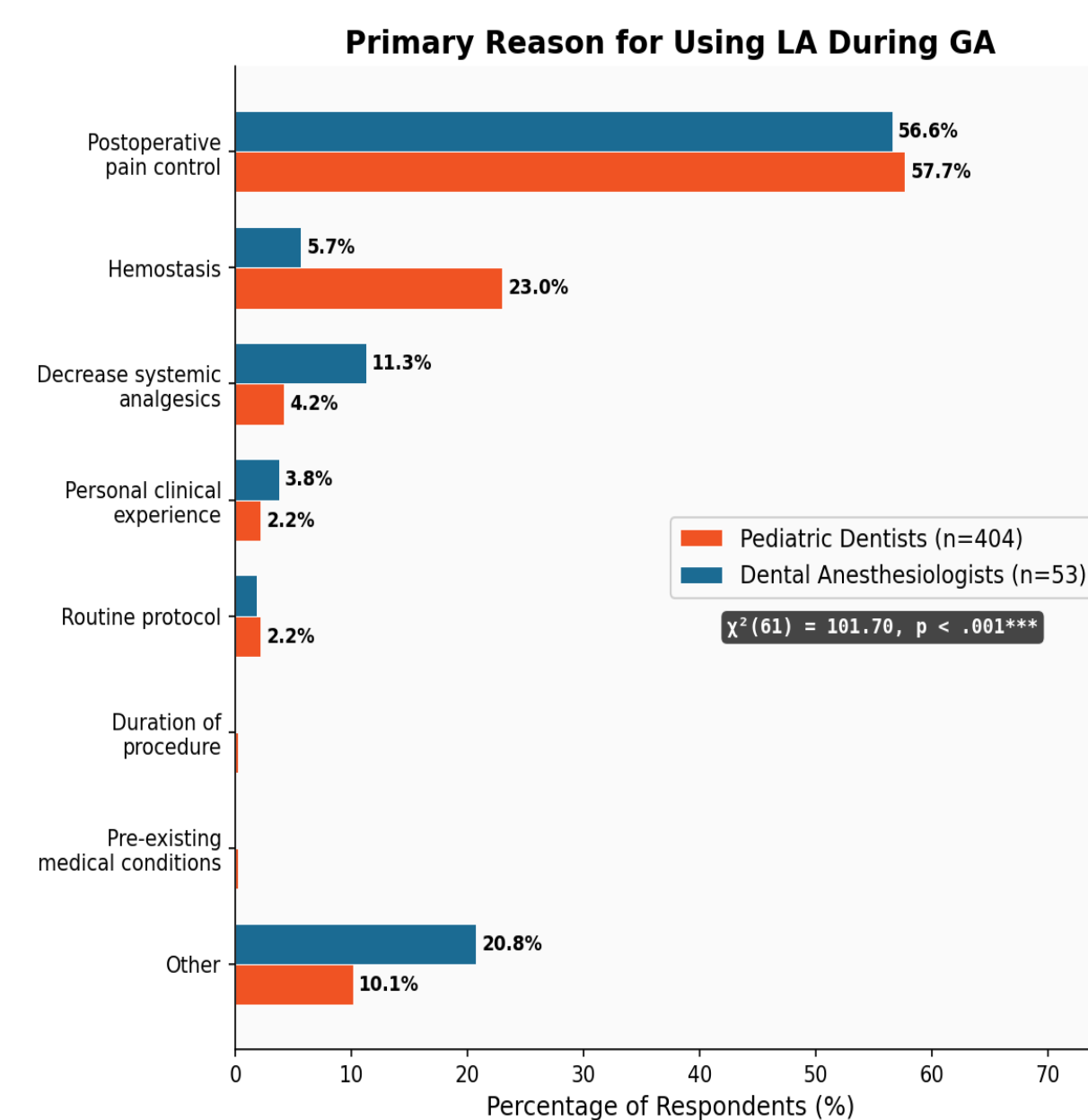


Fig 3. Primary Reasons among PDs and DAs for using local anesthesia in cases under general anesthesia

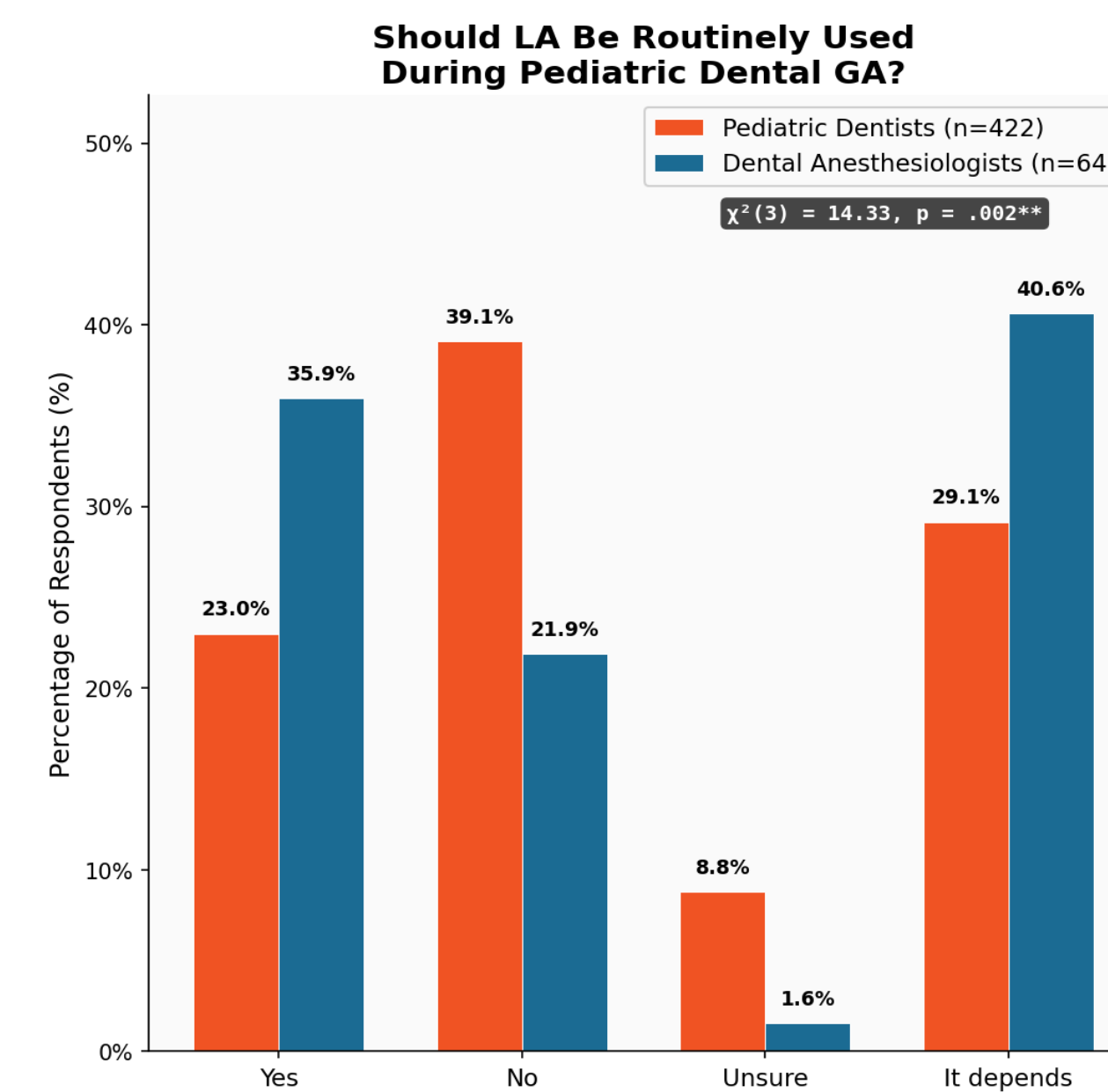


Fig 2. Attitudes between PDs and DAs regarding whether LA should be routinely used during GA.

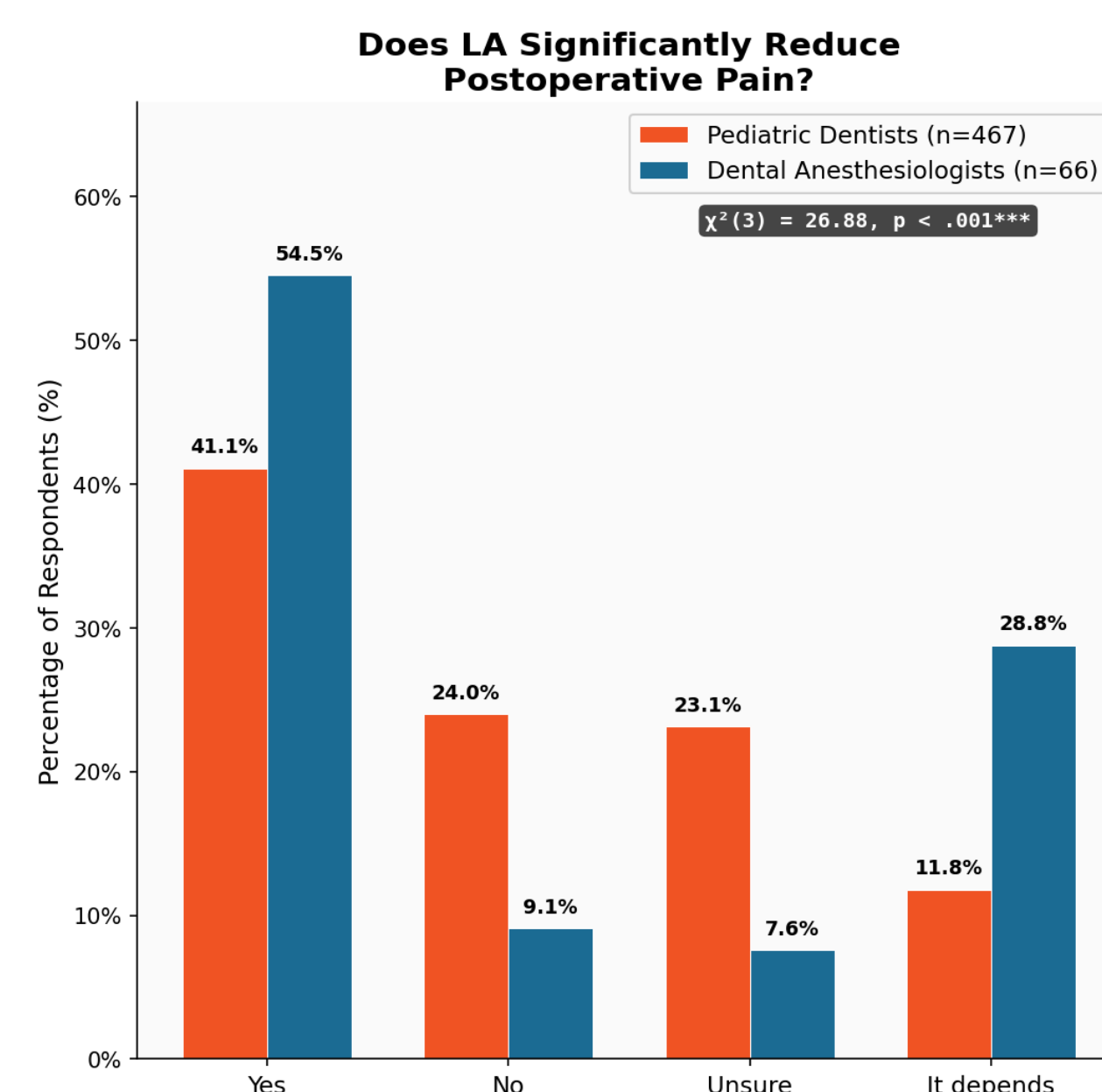


Fig 4. Belief between PDs and DAs that LA affects postoperative recovery time.

DISCUSSION & CONCLUSION

Discussion:

7896 emails were sent to the AAPD listserv, and 428 emails were sent to the ASDA listserv, for a total number of 8324 surveys sent. There were 678 respondents (576 PDs and 78 DAs), for a response rate of **7.29% of PDs** and **18.2% of DAs**.

The results of this study reveal a significant divergence in both the clinical practices and professional philosophies of PDs and DAs regarding the use of LA under GA. While both groups prioritize postoperative pain control, their clinical approaches differ markedly. DAs report a higher frequency of LA administration, with 46.1% using it "Often" or "Always" compared to only 30.4% of pediatric dentists (Fig 1). This divergence is further reflected in attitudes toward standardization: more DAs strictly advocate for the routine use of LA, whereas almost 40% of PDs explicitly oppose routine administration, often citing concerns over postoperative soft tissue trauma (Fig 2). Additionally, although both DAs and PDs agree that post-operative pain control is the primary reason for local anesthesia use, DAs tend to value reduced systemic analgesics more as a next priority, while PDs favor hemostasis (Fig 3). Despite these differences in intraoperative goals, a strong interdisciplinary consensus was observed regarding recovery outcomes, as 61.8% of PDs and 67.2% of DAs agree that LA does not significantly impact the overall length of postoperative recovery time (Fig 4). In addition, there was a dropout rate among the pediatric dentist group of 26.7% compared to the dentist anesthesiologist group of 17.9%, demonstrating a slight survey attrition rate that maintains the validity of the results.

Conclusion:

LA use during pediatric dental rehabilitation under GA remains highly variable, with PDs and DAs holding divergent perspectives on its indications, efficacy, and risk-benefit profile. Limitations include the cross-sectional survey design, reliance on self-reported data, potential response bias from listserv-based distribution, and the considerably smaller DA sample size, which limits the statistical power of between-group comparisons. In addition, there was considerable incomplete response rate that may impact validity of comparative data. Future research should focus on prospective, controlled studies evaluating LA's impact on postoperative pain outcomes, emergence quality, and complication rates across specific procedure types and patient populations. Ultimately, the development of evidence-based, interdisciplinary guidelines is needed to standardize LA use, bridge the gap between specialties, and optimize pain management and safety for children undergoing dental care under general anesthesia.

