



The Use of Sedative Medications in Pediatric Dentistry

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Introduction

MODERATE SEDATION IN PEDIATRIC DENTISTRY

Moderate procedural sedation for pediatric dental patients has evolved as new sedatives have been introduced and residency programs vary on their approach to training their residents. Variation in sedation techniques can also be contributed to state dental boards who determine which sedatives are allowed for moderate sedation for pediatric dental patients. As sedatives become outdated or introduced, it is important to stay up-to-date to what is considered “most common” based on the practitioner’s area common practices and perception of moderate sedation. This study will aim to survey practicing dentists to determine their usage, attitudes, and perceptions regarding specific sedative agents.

Objective

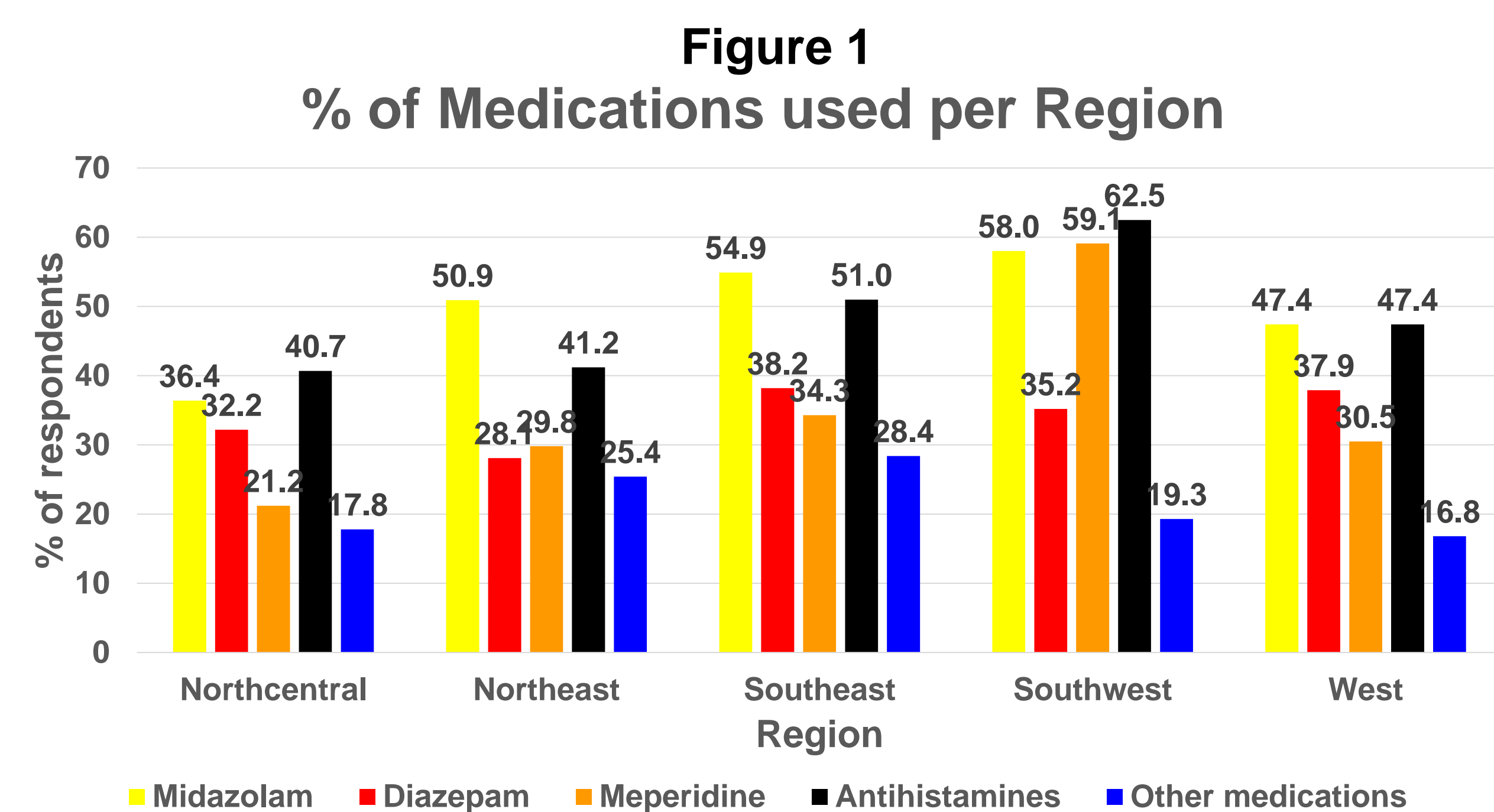
The aim of this study :

- To gain an understanding of current sedation trends amongst the active membership of the AAPD.

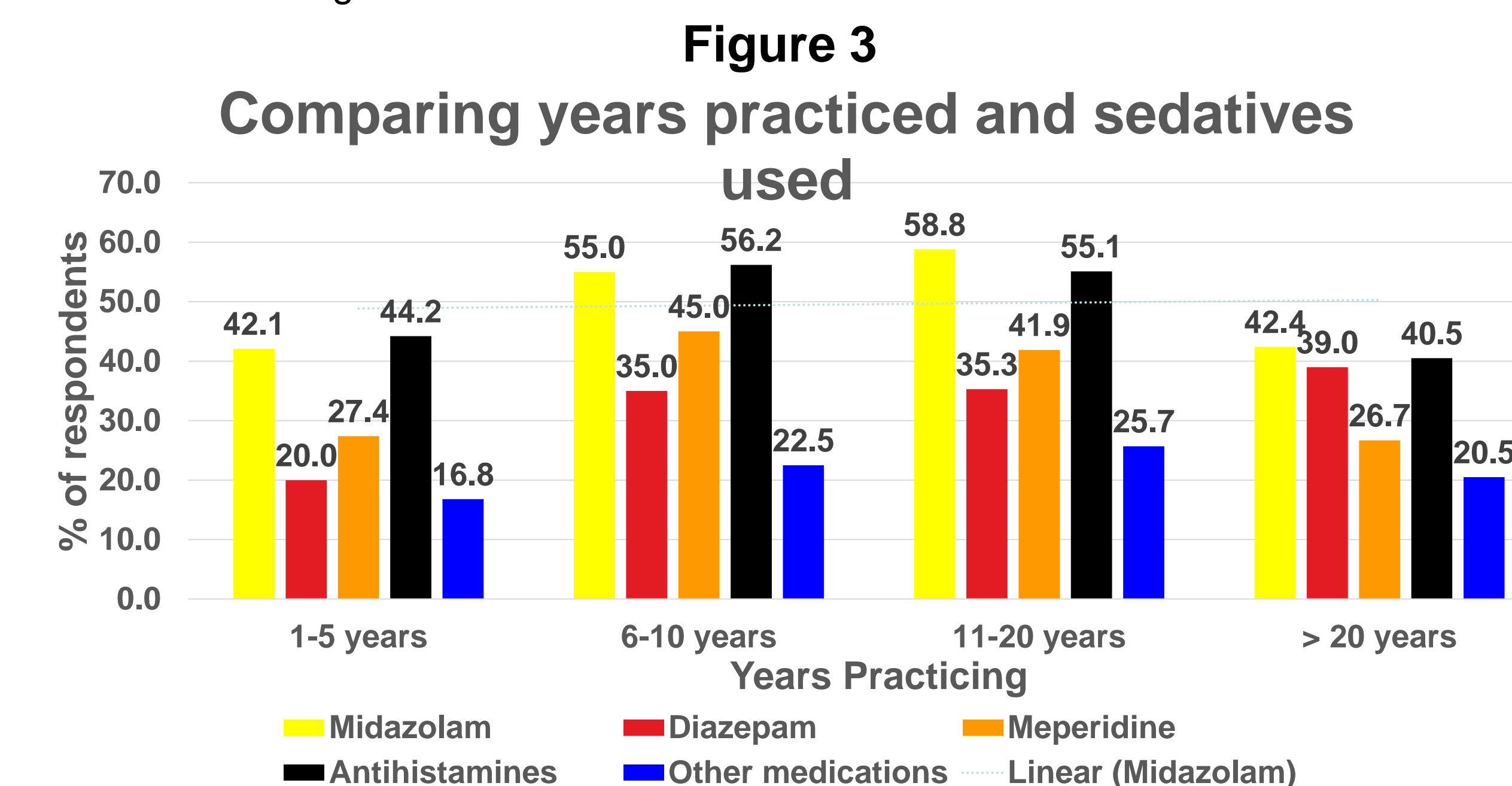
Methods

- The survey was sent to active AAPD members in the United States. The survey was a 31-item questionnaire inquiring about: geographic location of the practitioner in the United States; types of training program attended and lengths of time in practice; gender; percentage of patients insured by public insurance; use of nitrous oxide and other sedative agents; dosing preferences for each specific sedative, including preferred sedative agents and their frequency; perception of each category of sedative, including safety, effective, prone to complications, improving outcomes; cocktail combination; the amount of CE courses and articles read on sedation; reasons for not using specific sedative categories.
- Survey participant demographics and responses were summarized using counts and percentages. Participants were divided into groups based on location and practicing years and the group responses were compared using chi-square tests. To determine values that were significantly higher or lower than expected, adjusted residuals were calculated from significant chi-square tests and the corresponding p-values were adjusted using Bonferroni’s correction. Data analysis was performed in R (version 4.1.3) with significance defined as $P < 0.05$.

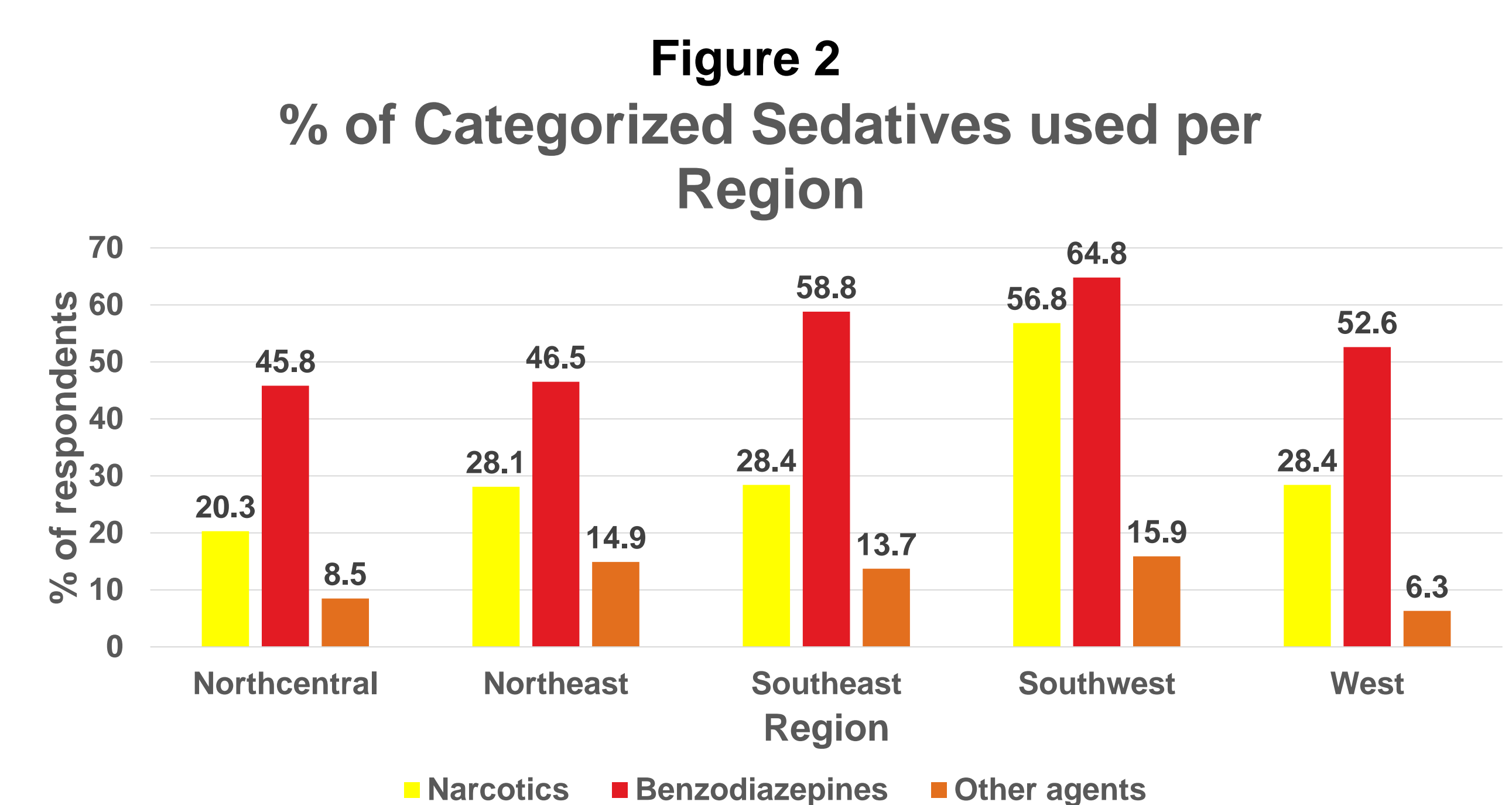
Results



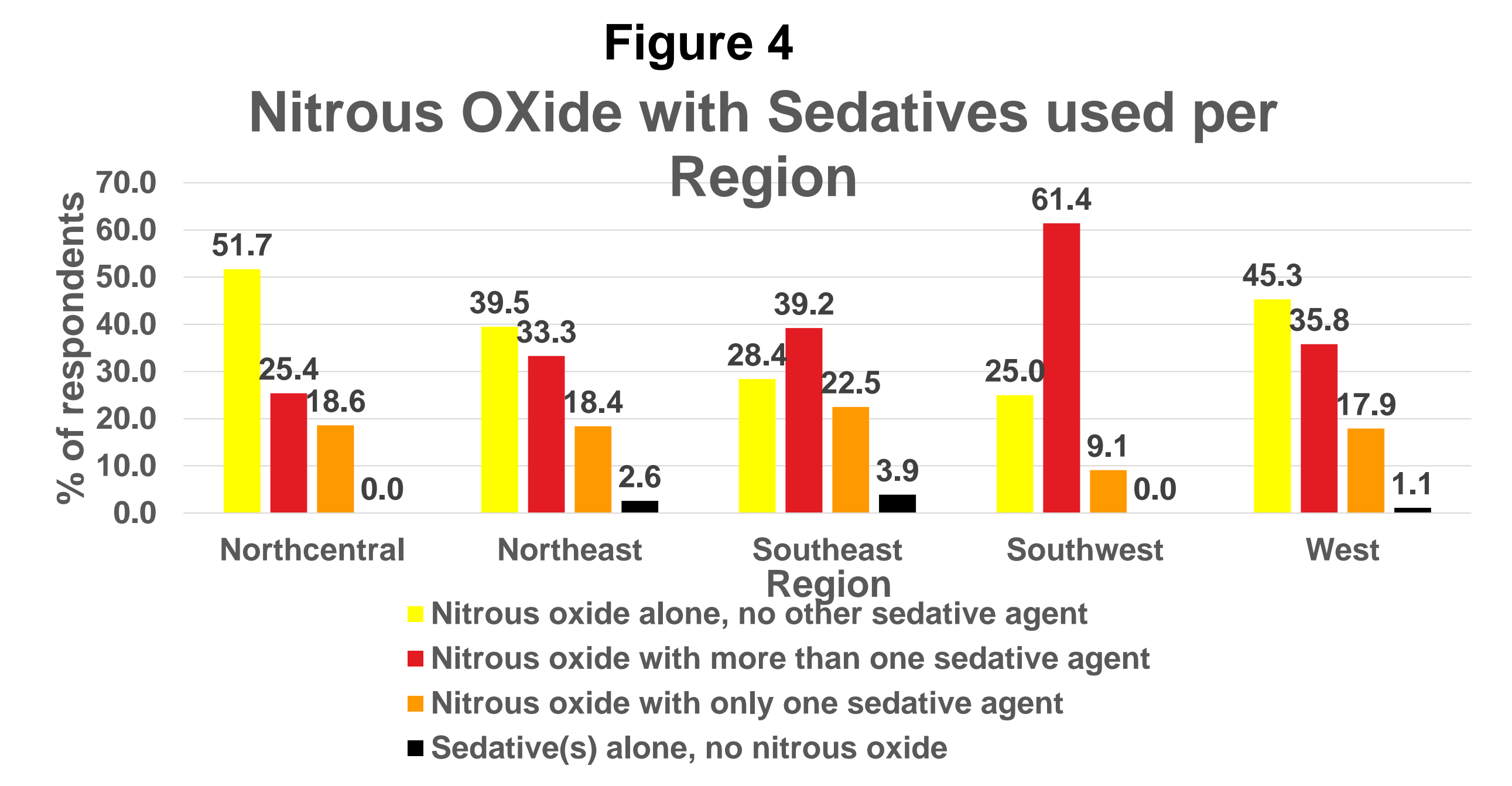
- Midazolam and Meperidine are used significantly less by members in the Northcentral region.
- Meperidine and Antihistamines are significantly used more by members in the Southwest region.



- Midazolam is significantly used more by those who have been practicing between 11-20 years.
- Diazepam is significantly used less by those who have been practicing between 1-5 years.



- Narcotics are used significantly more in the Southwest region compared to other regions.
- Narcotics are used significantly less in the Northcentral regions compared to others.



- Members of the Northcentral region used Nitrous oxide alone significantly more than the other regions.
- Members of the Southwest region used Nitrous oxide alone significantly less and Nitrous oxide with more than one agent significantly more than other regions.

Result Findings

- Five hundred and twenty-one surveys were returned (response rate <7%).
- Midazolam and Meperidine are significantly less used by members of the academy in the Northcentral region compared to the other regions.
- Meperidine and Antihistamines are significantly used more by members of the academy in the Southwest region compared to the other regions.
- Midazolam is significantly used more by those who have been practicing between 11-20 years while Diazepam is significantly used less by those who have been practicing between 1-5 years.
- Members in the Northcentral region use Nitrous Oxide alone significantly more than the other regions and use N₂O with more than one sedative agent significantly less compared to other regions.
- Members of the Southwest region use Nitrous Oxide with more than one sedative agent significantly more than other regions.
- Narcotics are used significantly more in the Southwest region compared to other regions.
- Narcotics are used significantly less in the Northcentral regions compared to others.
- No significant differences were found between the types of residency programs members of the academy have attended and the types of medications used in their practice for moderate conscious sedation.

CONCLUSIONS

- When comparing similar studies that evaluate the use and perception of moderate sedation in pediatric dentistry, our first impression was the low response rate may indicate that members of the AAPD may be experiencing survey burnout or the number of members utilizing moderate procedural sedation is decreasing as reimbursement rates continue to drop and alternative methods such as in-office GA with a medical anesthesia provider become more popular.
- Even though significant differences of sedatives used can be seen between regions and years of practicing, the main sedatives used in pediatric dental sedation include, midazolam, antihistamines, diazepam and meperidine while other medications including chloral hydrate are not as commonly used.

Future Study

- Create a survey to see if the number of pediatric dentists using moderate sedation is decreasing compared to previous years.
- Evaluate the subjective responses about members perception of sedation from the survey to determine if the perception of moderate sedation has changed over the years.

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Approval

- IRB Approval #22.0348