

## Background

Dental caries, a prevalent yet preventable childhood disease, can profoundly impact children's daily lives, affecting behavior, eating, focus in school, activities, and sleep. However, parental fear and anxiety about dental visits may hinder treatment, exacerbating decay and symptoms. Pediatric Dentists undergo extensive training to manage patient behavior, employing techniques like positive reinforcement and distraction. Yet, when these methods fail, pharmacological approaches such as sedation and anesthesia become necessary.

Due to changes in parenting styles and patient behaviors along with shifting attitudes of treatment modalities, there has been a rise in the implementation of oral conscious sedation for dental treatment. Pediatric dentists receive comprehensive education on various sedatives, administration methods, and potential side effects during residency. Residents are taught how medications can be combined to achieve minimal to moderate sedation based on factors like patient age, treatment needs, and medical history. However, differences exist in sedation training among residency programs, impacting both clinical experiences and resident exposure to the variety of medications offered.

Overall, the continuous changes in pediatric dentistry emphasizes the importance of addressing dental caries while recognizing the varying approaches to sedation training among professionals.

## Objectives

To survey current American Academy of Pediatric Dentistry (AAPD) residents on their exposure and experience with different oral sedation medications for completion of pediatric dental treatment.

## Methods

The survey was approved by the Wayne State University Institutional Review Board.

Current AAPD Pediatric Dentistry Residents received an email in regards to the survey. The email included details concerning the study such as the name of the P.I., title, and purpose of the study, along with a description of consent with a link to the online survey form. Google Survey online form was used for the completion of this survey. Residents were informed that participation was voluntary and anonymous responses were privately stored.

Participating residents were asked questions regarding their experiences with and different exposures to oral sedation medications, and their perception on effectiveness of medications.

Figure 1. Type of Certificate Program

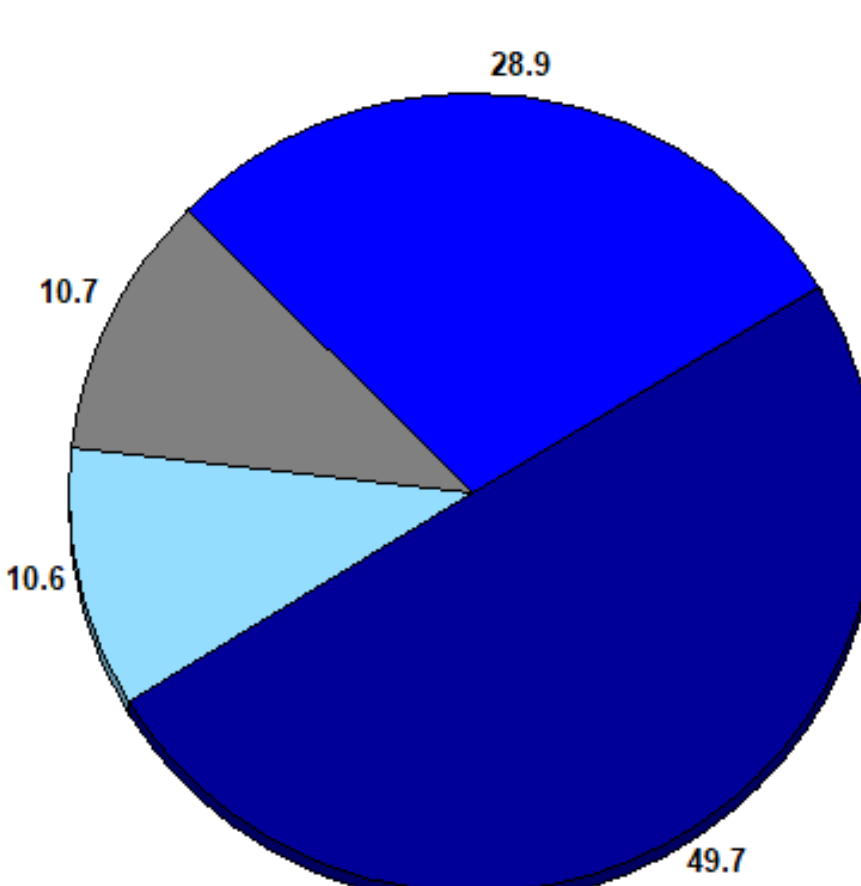
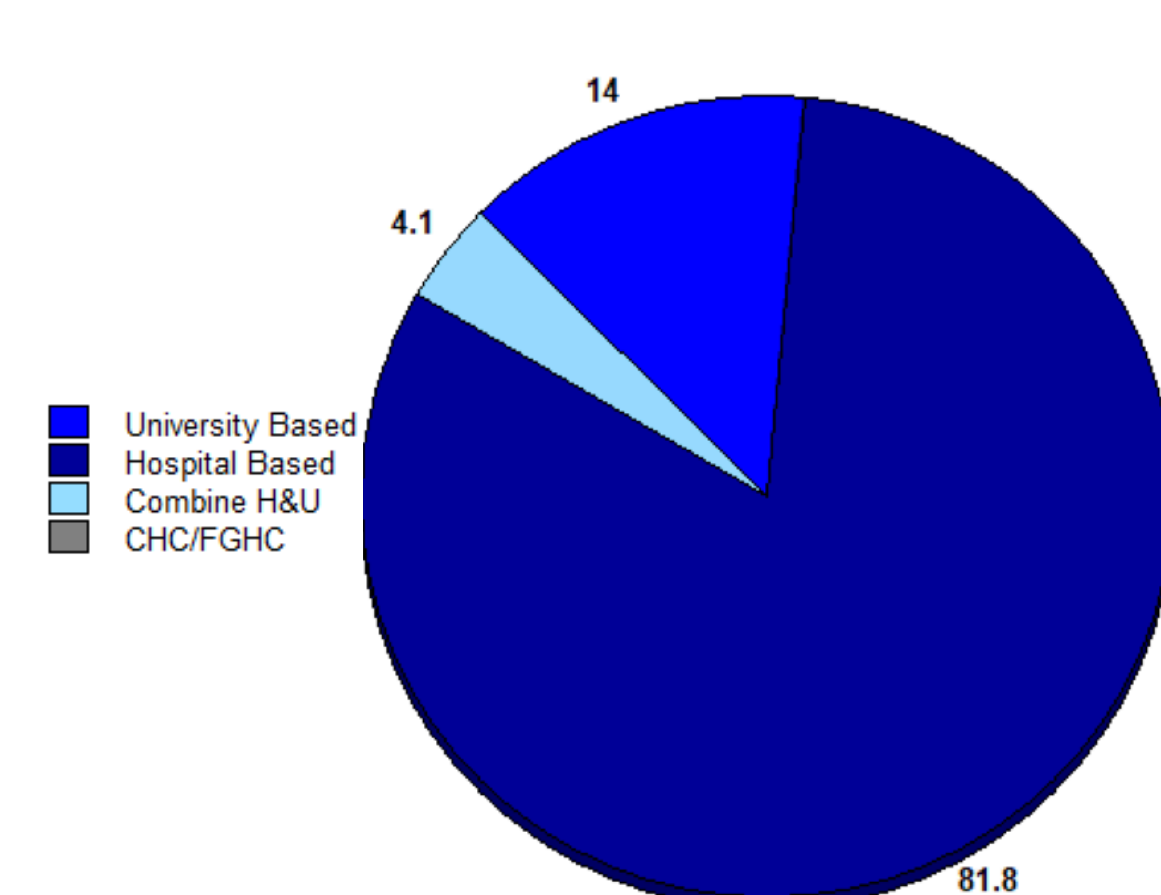


Figure 2. Residency Location



## Results

Figure 5. Age that Program Begins to Offer Oral Sedation

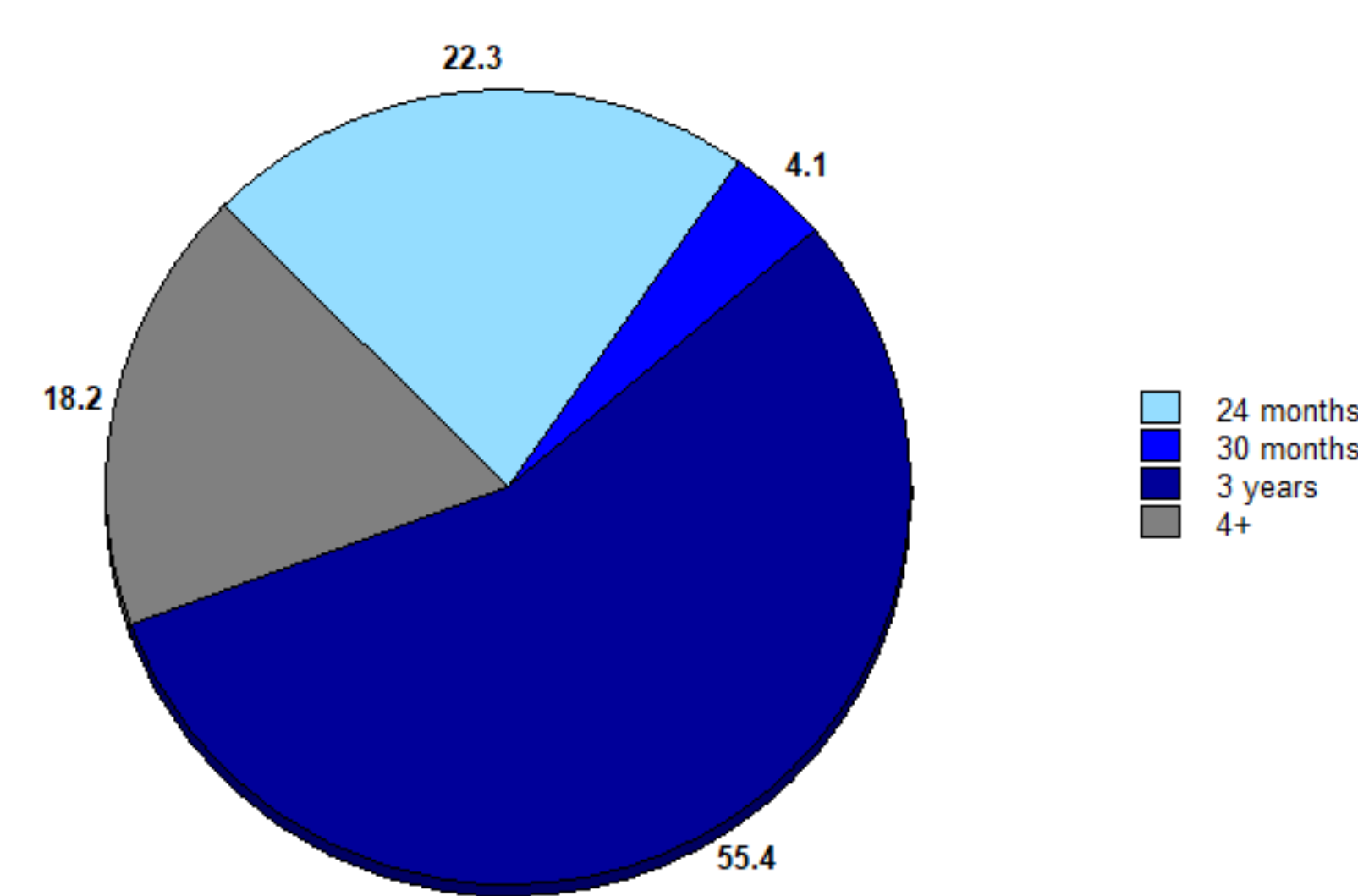


Figure 6. Oral Sedation Medication Combinations Offered

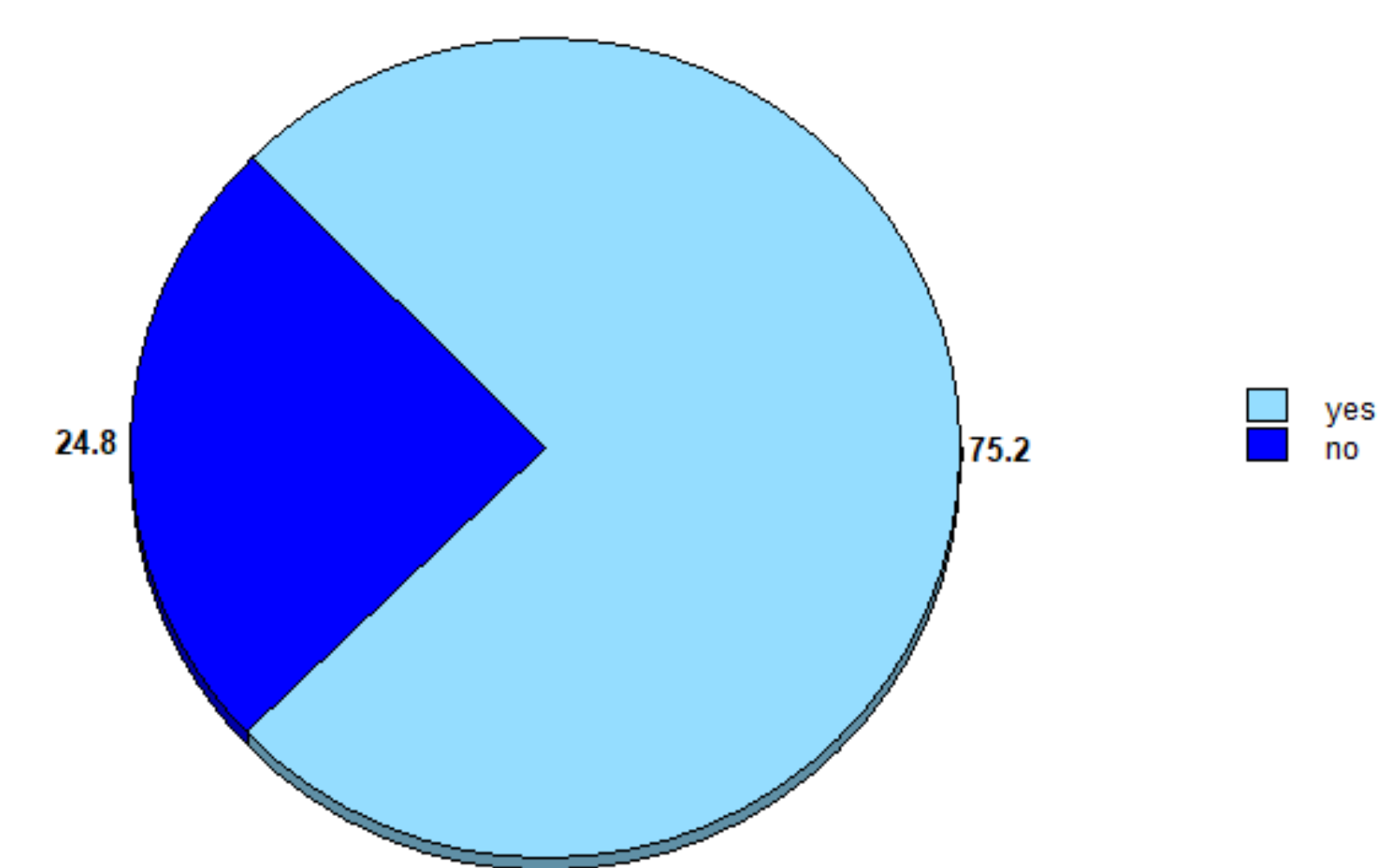


Figure 9. Dose Regimen Changes Methods

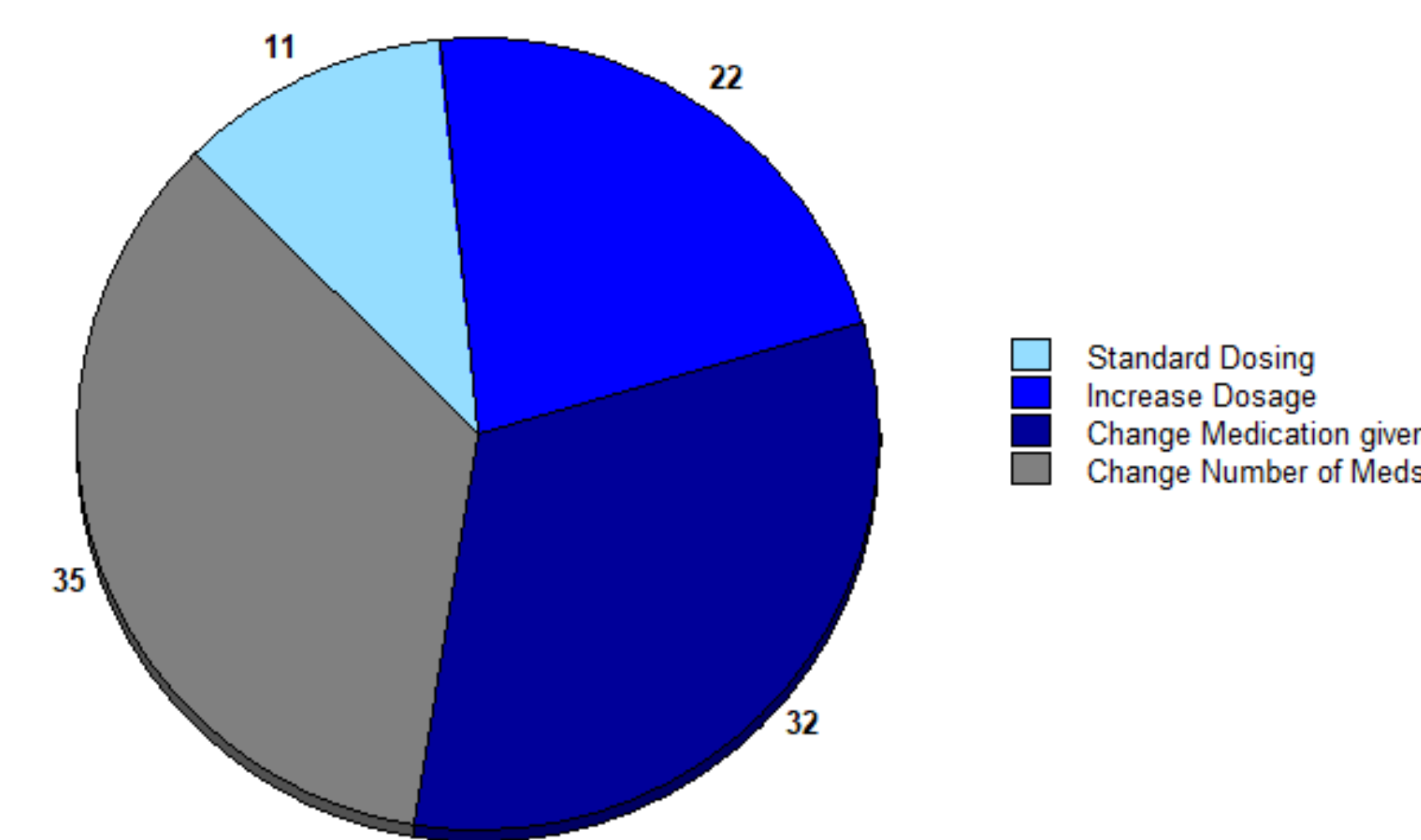


Figure 10. Resident perceived most effective OCS regimen

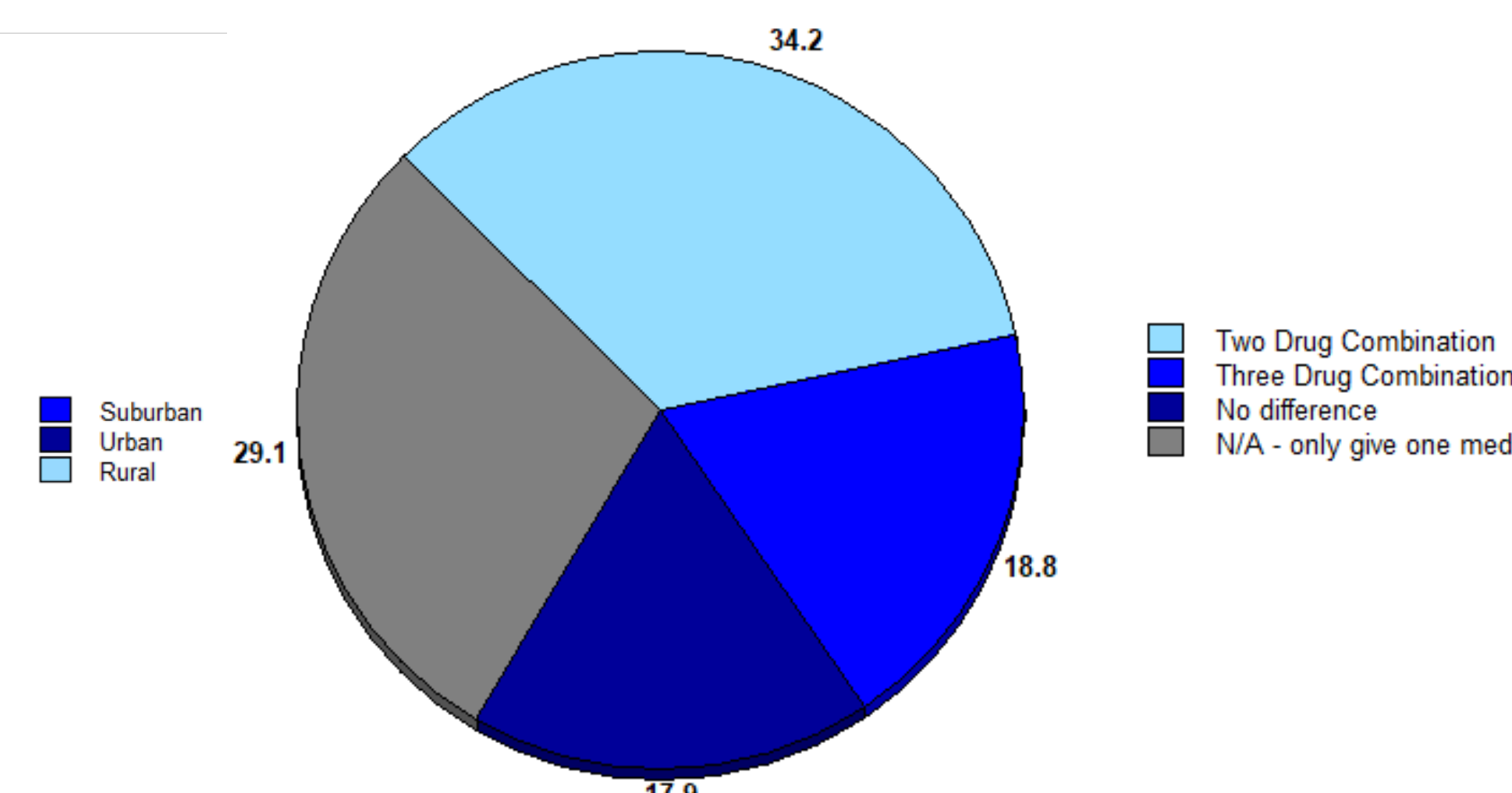


Figure 4. Type of Oral Sedation Medications Offered

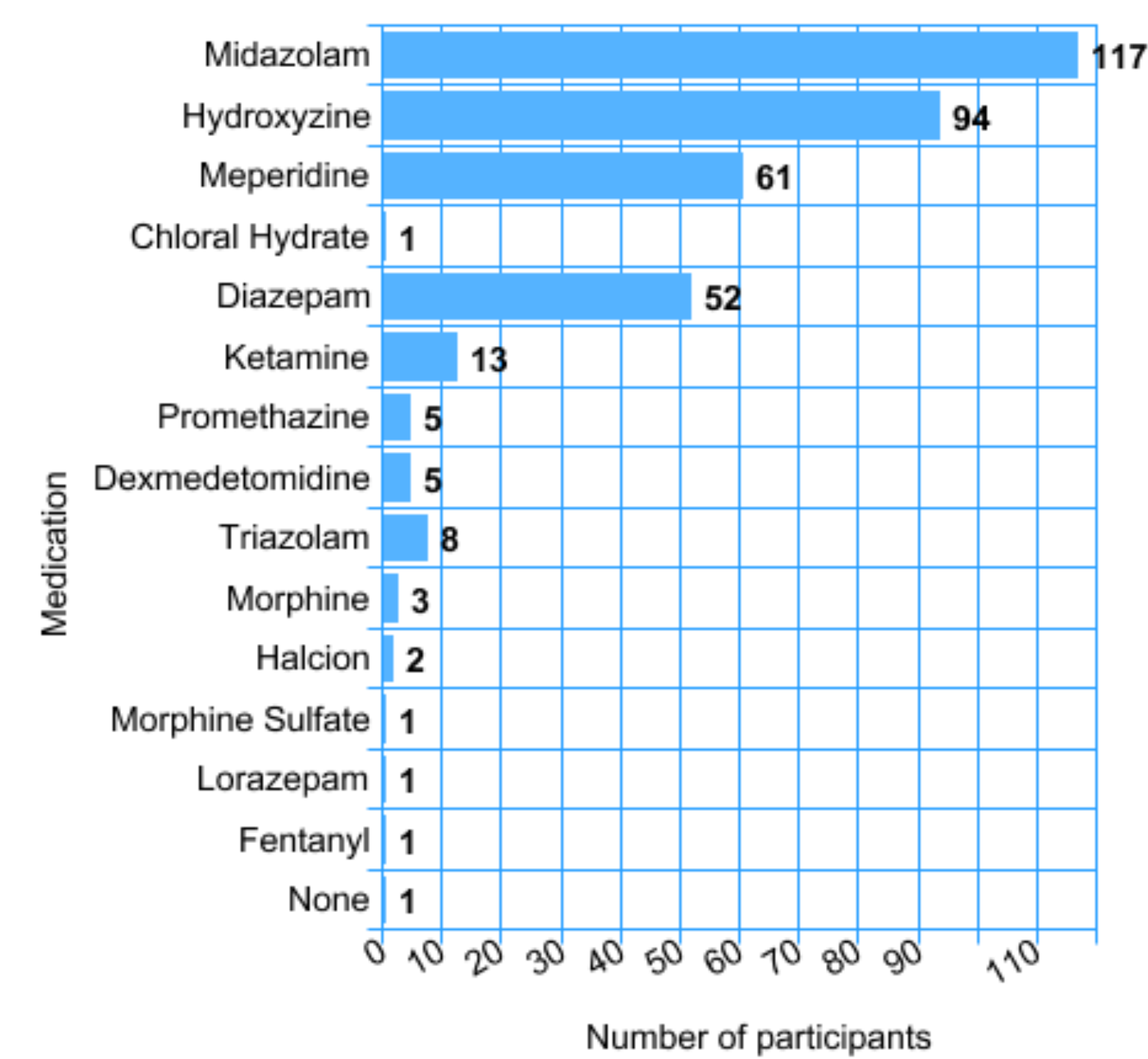


Figure 7. Double Cocktail Regimen

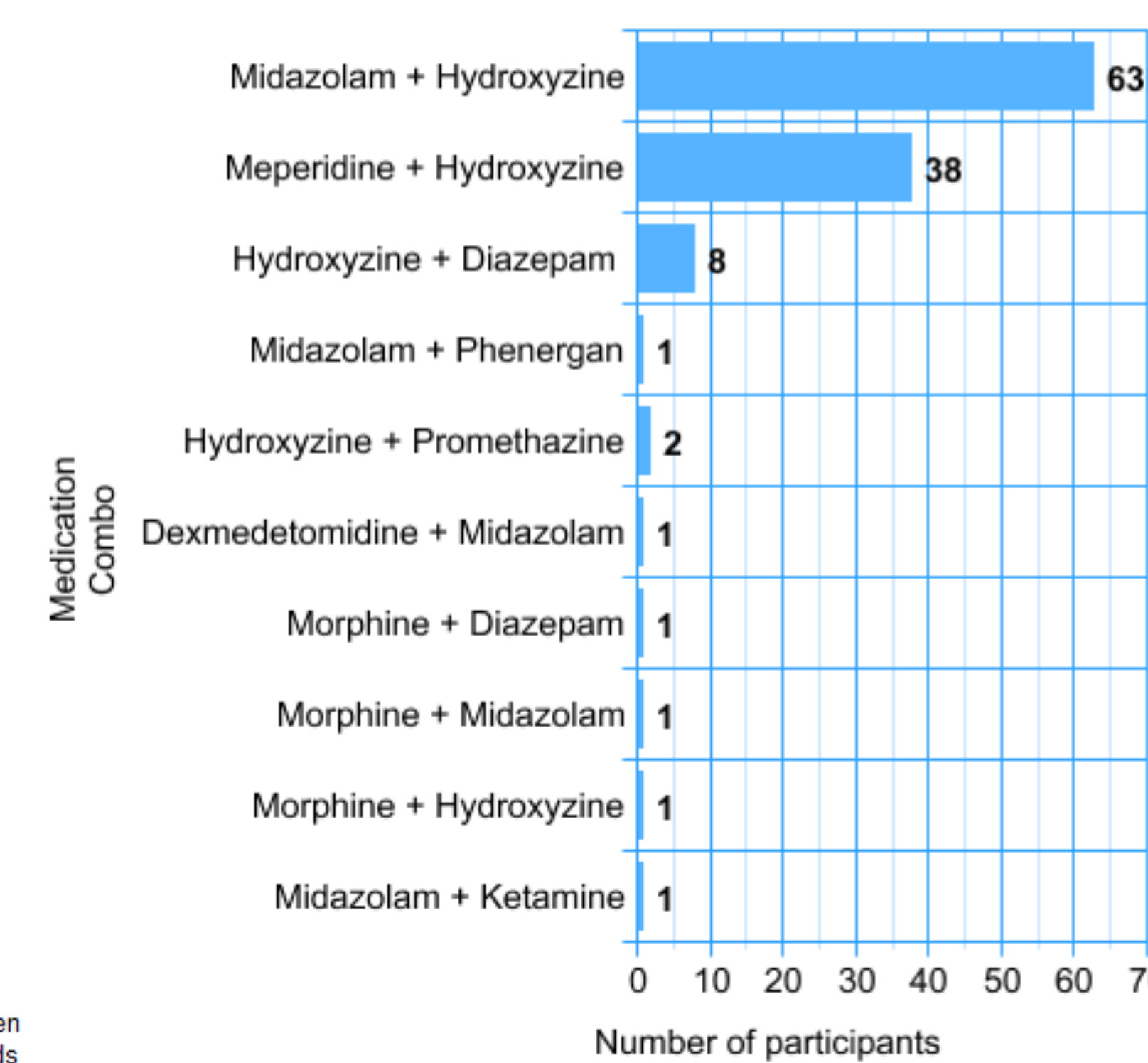
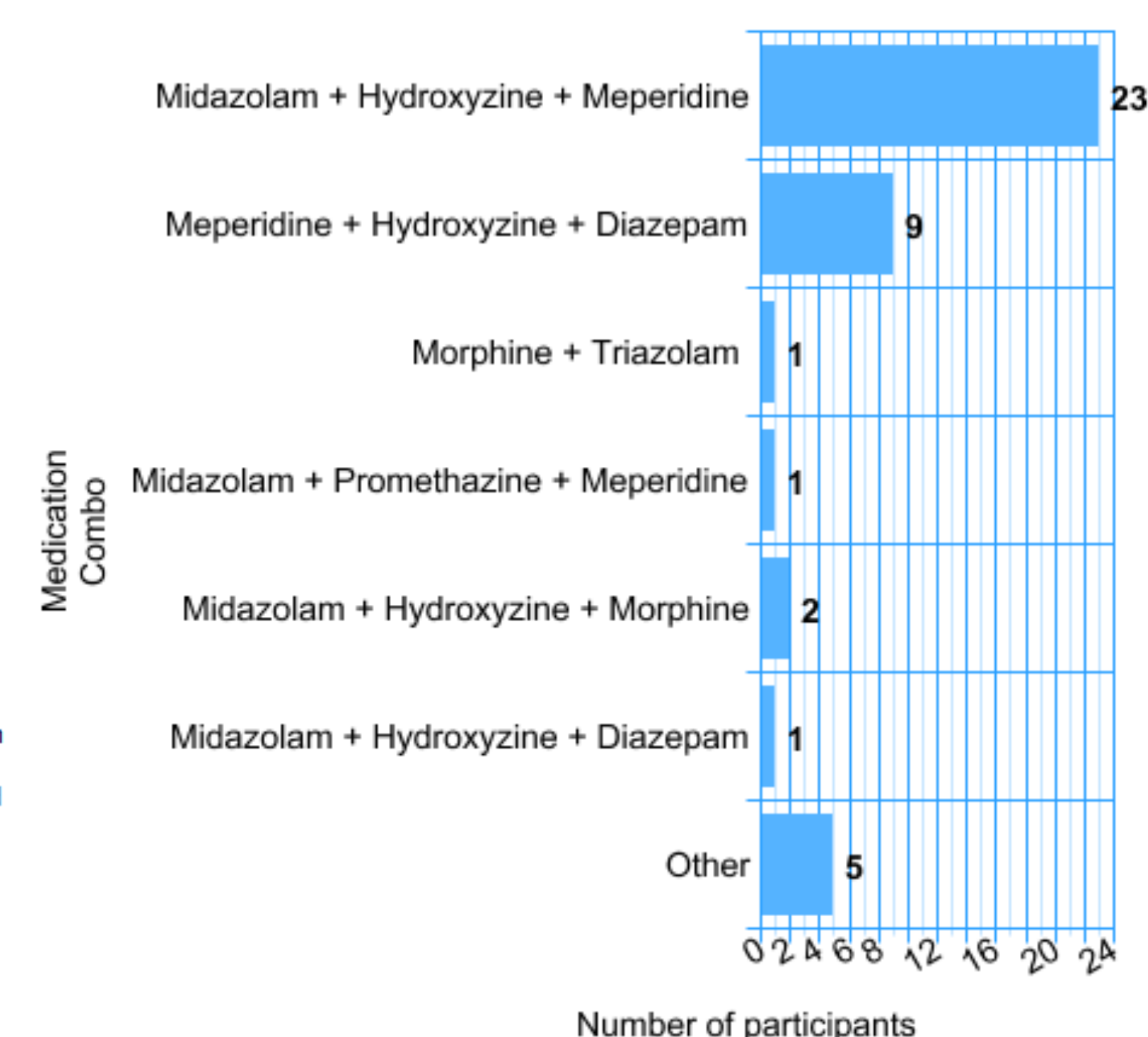


Figure 8. Triple Cocktail Regimen



## Results

121 pediatric dentistry residents, representing 13% of AAPD Pediatric Dentistry Resident members, participated in the survey. Half were in hospital-based residencies, primarily reimbursed through state insurance (99.2%). 55.4% of participants were trained to offer oral conscious sedation (OCS) starting at 24 months, while 4.1% only offered at 4 years and older.

Common oral sedation (OS) medications included Midazolam, Meperidine, and Hydroxyzine, with some exposed to Morphine, Chloral Hydrate, Promethazine, and Dexmedetomidine. Midazolam or diazepam alone were the most common single medications.

75.2% of participating residents were exposed to multi-medication ('cocktail mixes'), with 24.8% only experienced in single medication OCS. Popular two-medication mixes included Midazolam with Hydroxyzine (52%), Meperidine with Hydroxyzine (31%), and Hydroxyzine with Diazepam (6.6%).

38% of participating residents were in programs offering only two medication combinations, while common three-medication combinations included Midazolam with Hydroxyzine and Meperidine (19%) and Meperidine with Hydroxyzine and Diazepam (7%).

22% of participants' programs had fixed dosing regimens, while 32% adjusted dosage, 35% changed medications, and 11% altered medication type based on treatment complexity. 1% only treated one quadrant with OCS.

Regarding effectiveness of managing patient behavior, 17.9% of participating residents perceived no difference between two and three-drug combinations, 34.2% found double drug combinations more effective, and 18.8% preferred three-drug combinations.

**Limitations of study:** The sample size was small in comparison to number of current pediatric dental residents. Participants represented only a small number of residency programs.

## Conclusion

The findings of this research indicate that newly graduating pediatric dental residents have experiences with different oral sedation regimens during their residency training; however it can vary from program to program. AAPD residency programs could use this information to diversify resident experiences as well as potential solutions to ensure that their residents are gaining exposure and experiences to varying regimens.

## References

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