

ABSTRACT

Behavior guidance is fundamental to pediatric dentistry as patient cooperation directly influences treatment quality and success¹. Poor cooperation, extensive dental needs, or significant dental anxiety may require general anesthesia to safely complete care^{1,2}. Although general anesthesia allows comprehensive treatment in a single visit, prior studies suggest these children may exhibit behavioral challenges during subsequent outpatient visits. While existing literature describes a range of basic and advanced behavior guidance techniques⁴⁻⁶, few studies focus on early childhood when dental anxiety and behavior patterns are still developing^{2,3}.

This study addresses this gap in information by examining behavioral guidance techniques utilized for children younger than 7 years and 3 months with ASA I–II status following prior dental treatment rendered under general anesthesia.

MATERIALS AND METHODS

A retrospective chart review following IRB approval (#2026-00008) was conducted of pediatric patients who received dental treatment under general anesthesia (GA) followed by subsequent outpatient care at the Stony Brook Dental Care Clinic (SBDCC). Electronic dental records were reviewed from 12.01.22 – 12.01.25 using the axiUm™ electronic health record system.

Data collected included demographics, ASA classification, details of GA treatment, and subsequent outpatient visits. Treatments were identified using procedure codes for GA/oral rehabilitation, extractions, restorative procedures and behavior management modalities including nitrous oxide inhalation and non-intravenous oral conscious sedation.

Inclusion Criteria

- Patients 7 years 3 months of age and younger
- Classified as ASA I or ASA II
- Documented history of full-mouth dental rehabilitation (FMDR)
- Subsequent outpatient dental treatment limited to posterior teeth
- Complete treatment records available within axiUm™

Exclusion Criteria

- Patients older than 7 years 3 months at time of treatment
- No documented history of treatment under GA
- Incomplete or missing axiUm™ records/ inability to complete subsequent treatment
- Patients receiving restorative treatment involving anterior teeth
- Patients classified as ASA III or ASA IV (significant systemic disease)

RESULTS

Figure 1:

Of 326 GA encounters, 68 patients (20% of total) required subsequent in-office dental treatment

28 (41.2%) – female
40 (58.8%) – male

Figure 1:

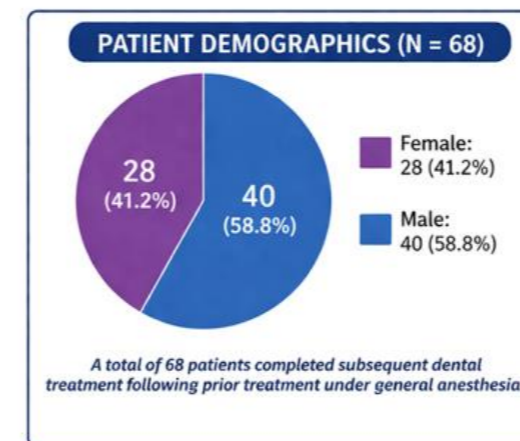


Figure 2:

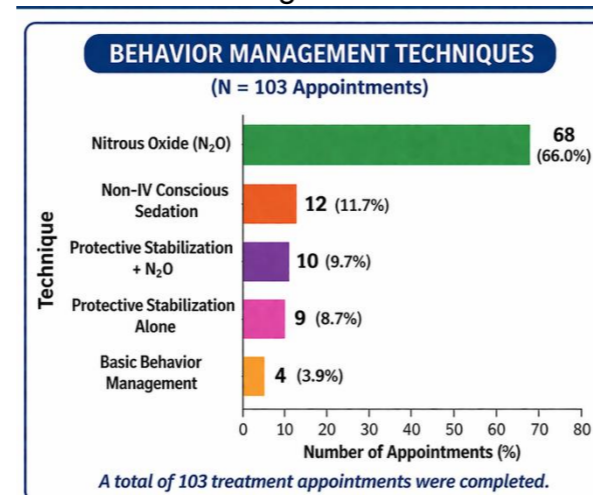


Figure 2:

Of 103 post-GA treatment appointments:
66% - N₂O
11% - non-IV conscious sedation
9.7% – combo protective stabilization/N₂O
8.7% - protective stabilization alone
3.9% - basic behavior management

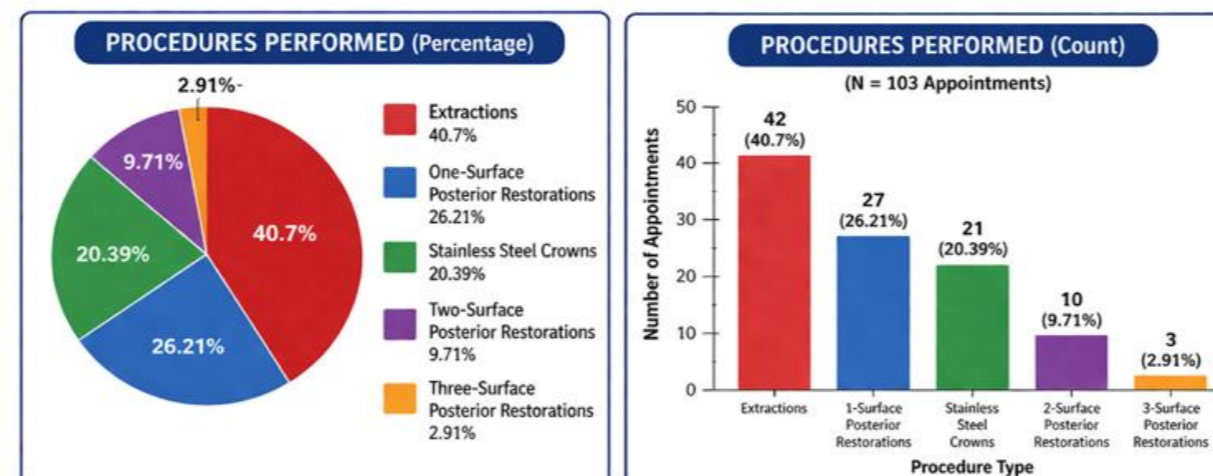
Figure 3:

Of treatment performed in clinic following treatment in OR using GA:

extraction > one-surface > stainless steel crown > two-surface > three-surface

(*only posterior restorations were assessed)

Figure 3:



CONCLUSIONS

- Nitrous oxide (N₂O) was the most frequently used behavior management technique (66% of visits), consistent with AAPD recommendations for minimally invasive behavior guidance.
- More advanced techniques (oral conscious sedation and/or protective stabilization) were required in a minority of visits, suggesting persistent behavioral challenges in some patients post-GA.
- Extractions were the most common procedure (40.7%), indicating ongoing disease burden or limited restorative prognosis.
- Stainless steel crowns (20.4%) were commonly placed, supporting AAPD guidance favoring durable full-coverage restorations in high-carries-risk children.

The predominance of extractions and frequent use of stainless steel crowns reflect ongoing disease burden in this population and align with AAPD recommendations emphasizing durable, full-coverage restorations for children at high caries risk.

Findings emphasize the importance of risk-based treatment planning and aggressive preventive strategies at the time of GA to reduce future retreatment needs.

DISCUSSION

By evaluating the use of nitrous oxide/oxygen inhalation sedation, oral conscious sedation, and protective stabilization, this study aimed to identify patterns that inform anticipatory guidance, treatment planning, and preventive strategies to improve the safety and effectiveness of pediatric dental care.

The majority (94%) of children returning for subsequent treatment visits required ongoing behavior management after GA, with N₂O effective for the majority; however, high extraction rates highlight persistent disease risk and the need for definitive care.

Improved anticipatory guidance and risk-based planning may help reduce the need for invasive procedures and advanced behavior management in this vulnerable population.

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REFERENCES:

