

Factors Affecting the Need for Additional Dental Treatment in an Operating Room Setting at University Hospital

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Introduction

Early childhood caries is a leading cause of dental morbidity and many children frequency require treatment under General Anesthesia (GA). Some children may require another round of GA for recurrent or new carious lesions This subset includes children who cannot be treated in the traditional clinical setting due to their age, medical condition, behavior or extensive restorative need.

Having multiple treatments in the GA is not only costly and drains resources from the health system but also raises concerns about cumulative anesthetic exposure and environmental pollution.

At RSDM, many patients we treat in the OR are from outside referrals, patients who are not able to tolerate treatment in the clinical setting, patients with extensive dental needs or a combination. There are cases where patients presenting for routine recall appointments and must require retreatment under GA.

Prevention strategies after the first OR treatment is important as well as understanding factors that may contribute to the reason for this repeated OR visit

This retrospective study explores associative factors contributing to the need repeated GA to treat dental caries, including special healthcare needs, recall compliance, and age at first OR visit.

Materials/Methods

Axiom Software was utilized to access dental records for RSDM pediatric patients who underwent oral rehab under GA at University Hospital.

Inclusion Criteria

1. Pediatric ages 2-12 years who had a minimum of one hospital code (D9420) completed between January 1, 2013, and December 31, 2025.
2. Patients must demonstrate follow-up for a minimum of three years by completed Periodic Exam visit code (D0120) for 3 years post OR date and/or 2nd hospital code within 3 years
3. Patients who had another hospital code completed within 3 years of the first OR visit, regardless of whether they had a periodic exam in that time frame. The following study parameters will be evaluated for this group:

- Age of patient when both Hospital Codes were completed
- Special Needs
- Number of periodic exams (D0120) – patient compliance

Exclusion:

1. Patients treated for traumatic injuries in the Operating room
2. Hospital code completed, but no minimum 3-year follow-up after the first OR, no treatment rendered, and no other periodic exam codes were completed.

Results

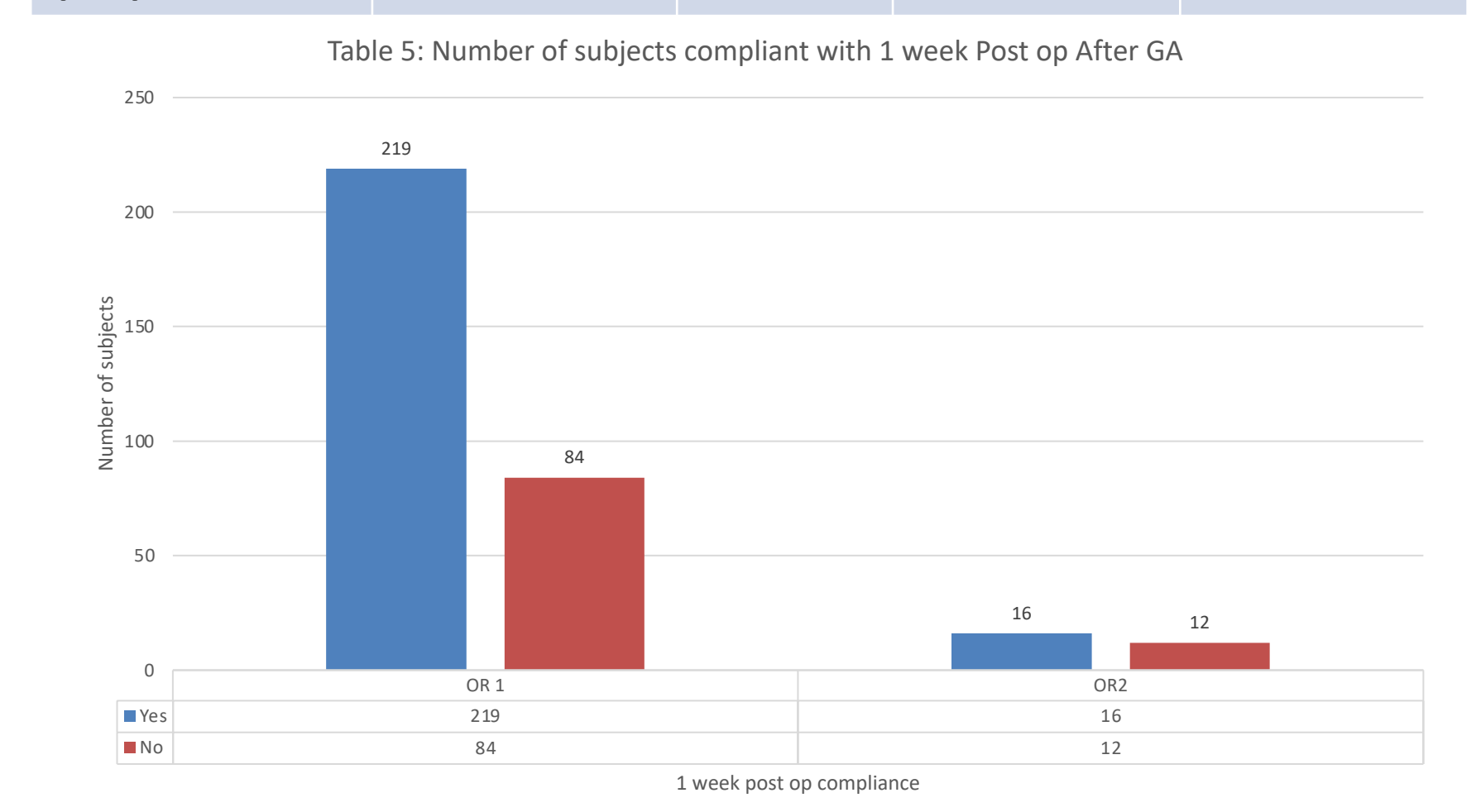
- A total of 1207 charts were received . After meeting the inclusion criteria, a total of 303 patients were included in the final analysis. Of these patients, 28 had more than one hospital code completed.
- 15 children out of the 226 who were 2-5 years old at the time of their first GA had a second round of GA within 3 years (7.1%).
- 9 children out of the 63 who were 6-9 years old at the time of their first GA had a second round of GA within 3 years (12.7%).
- 4 children out of the 14 who were 10-12 years old at the time of their first GA had a second round of GA within 3 years (28.6%).
- 23 children out of the 123 with special health care needs had a second round of GA within 3 years (18.7%)
- 13 children out of the 55 with Autism had a second round of GA within 3years (23.6%)
- 23 children who followed up with at least 1 recall had a second round of GA within 3 years (7.7%)
- 16 children out of 219 that followed up with a post op exam had a second round of GA within 3 years (7.3%)

	# compliant	# noncompliant	Total Number
Total	298	5	303
# GA 2 (%)	23/298	5/28	28

	Special Needs	No SHCN	Total number
Total	123	180	303
# GA2 (%)	23/123	5/180	

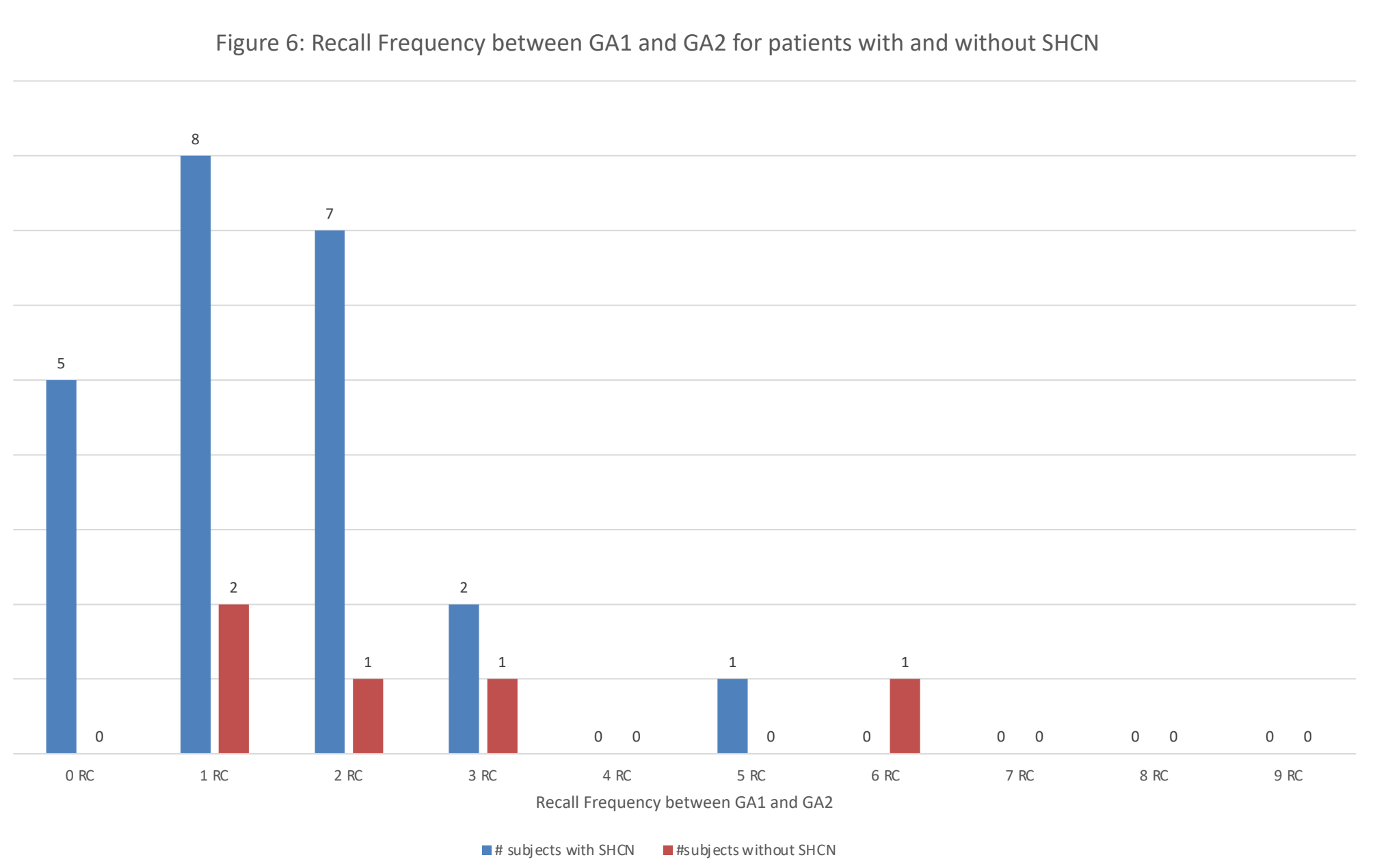
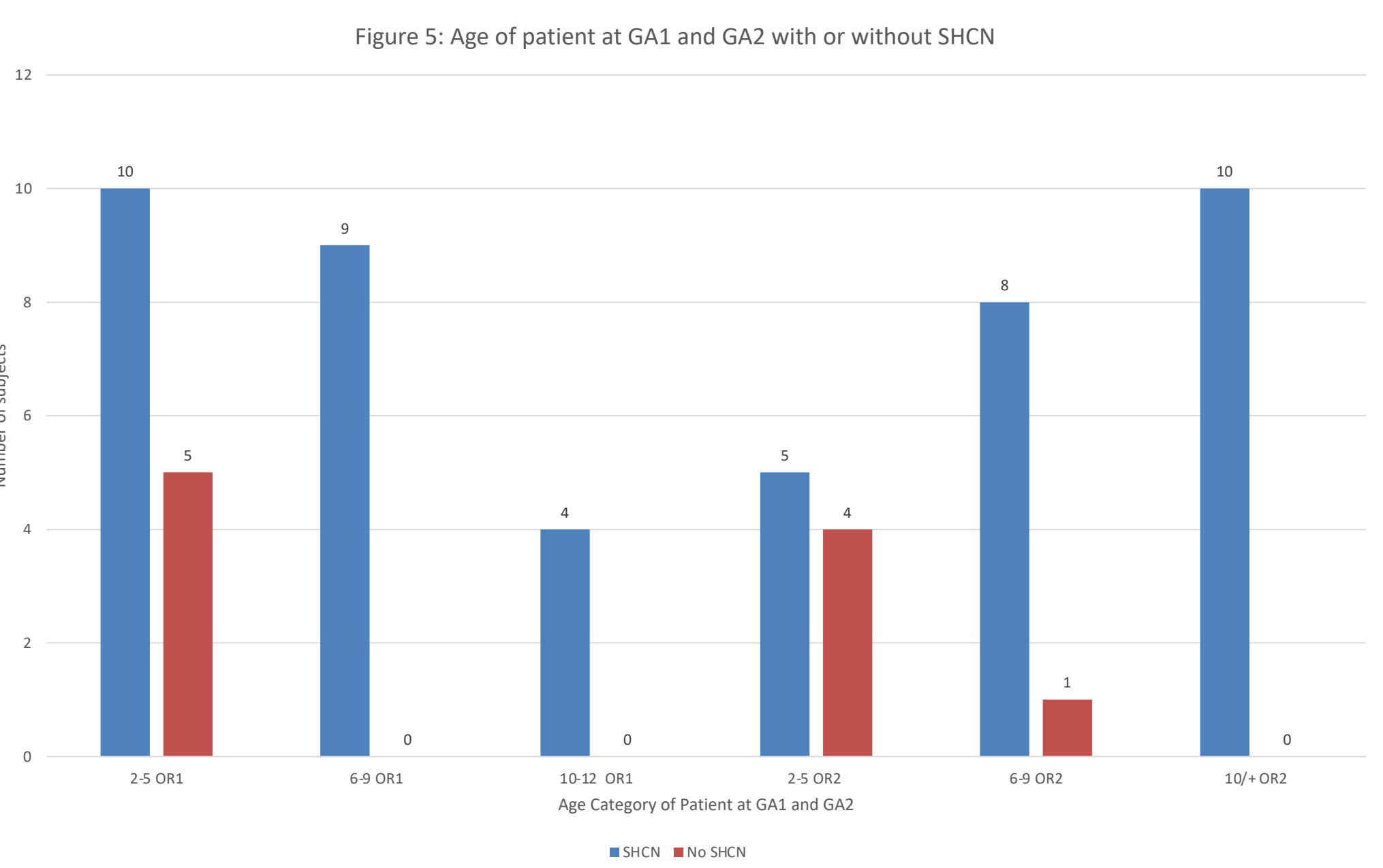
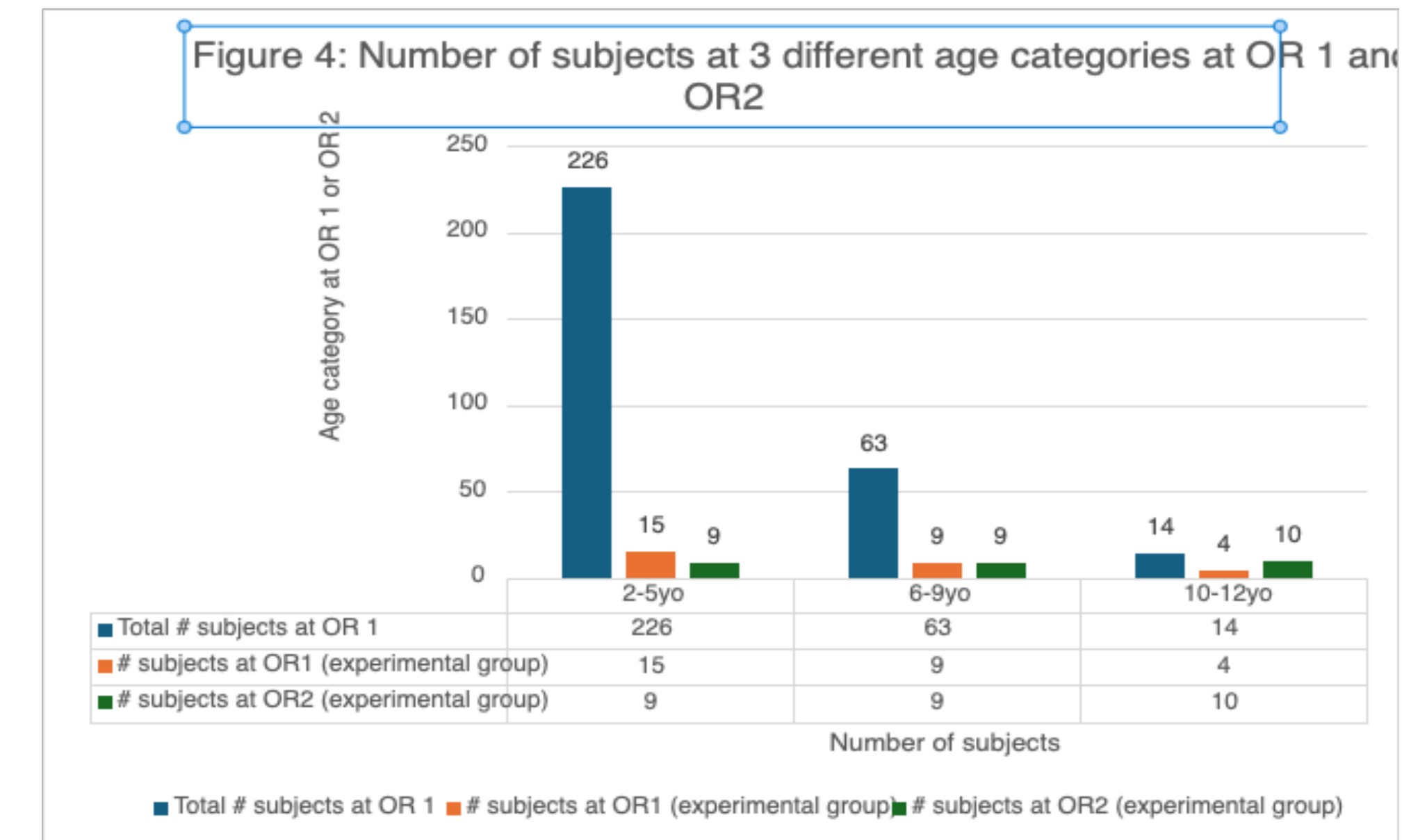
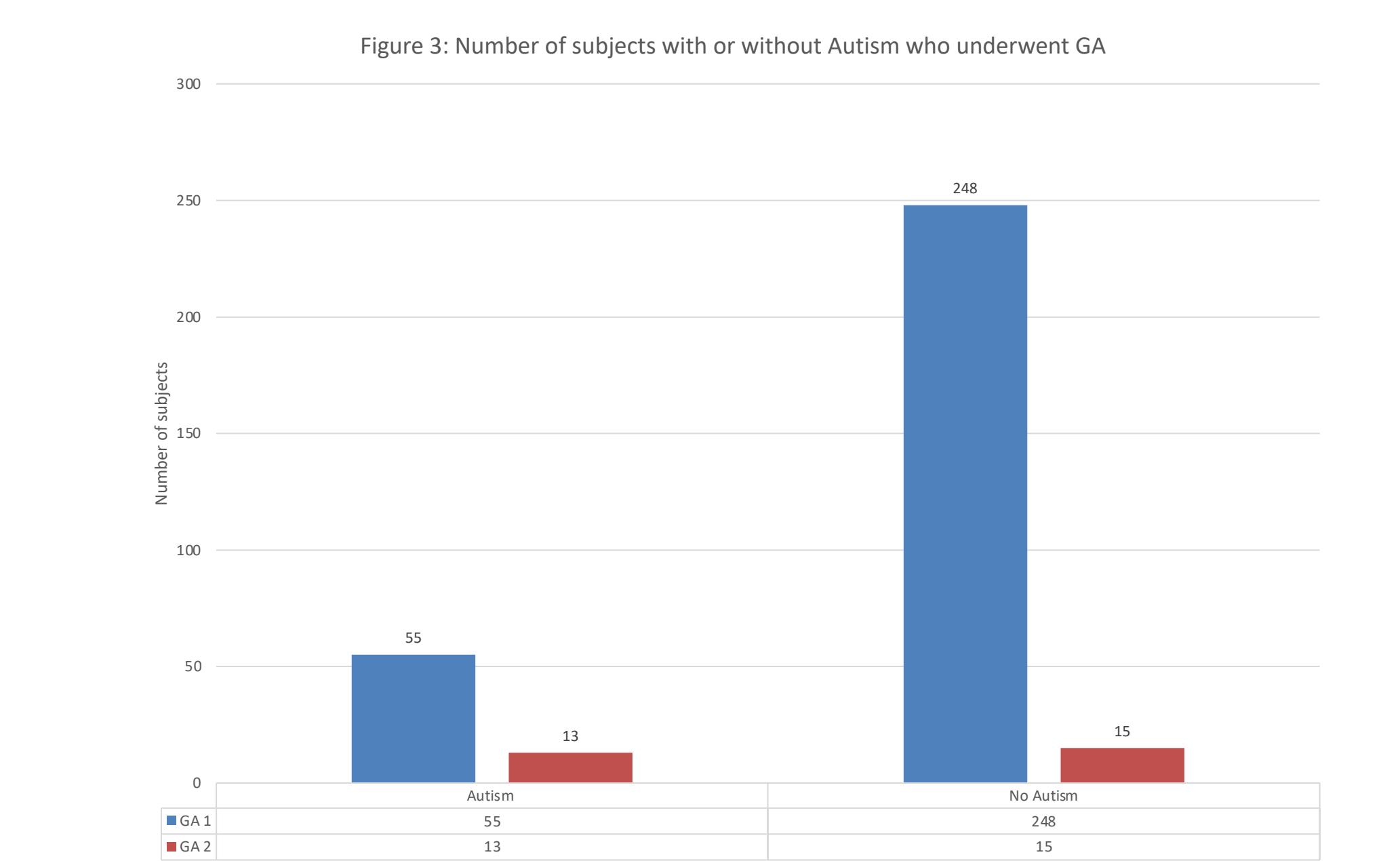
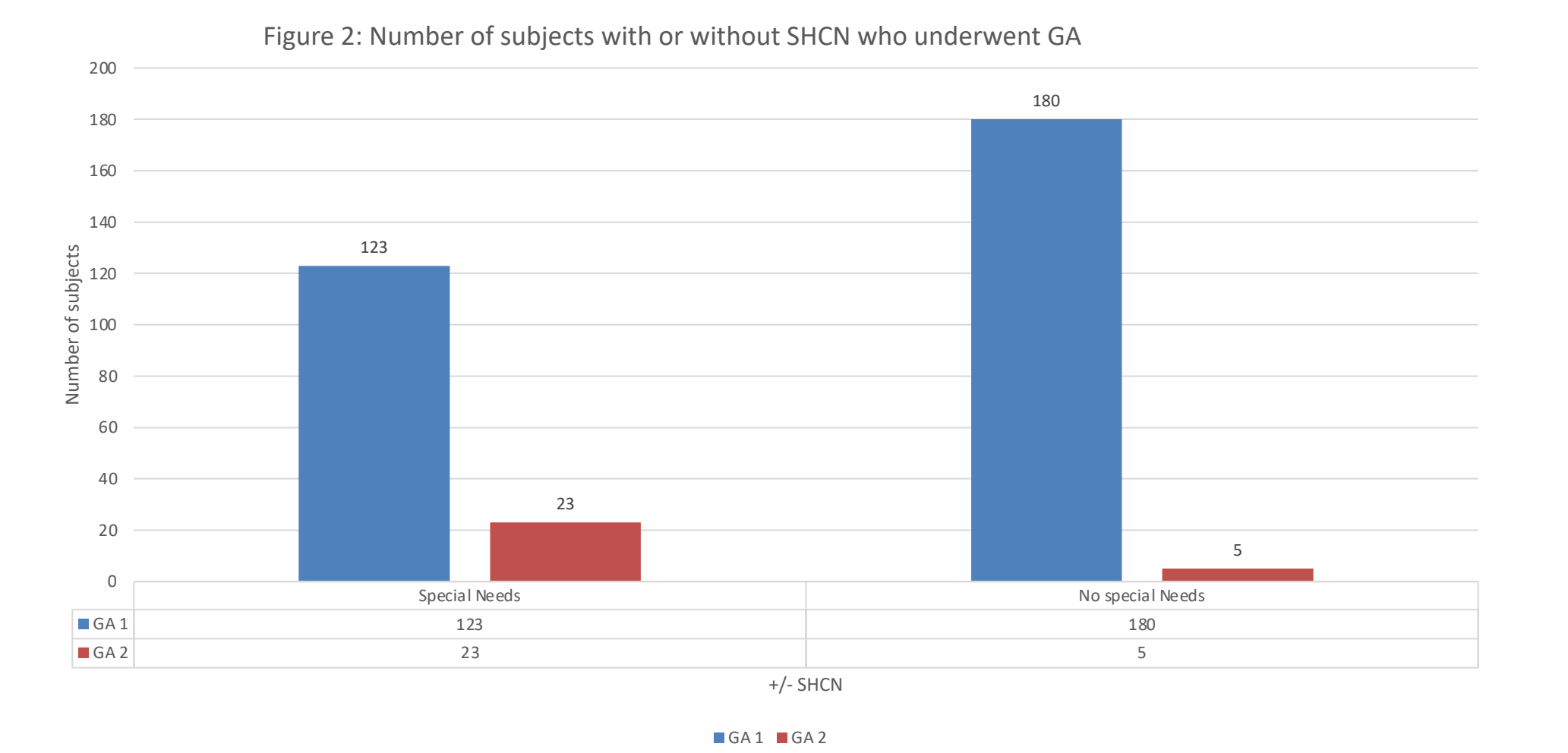
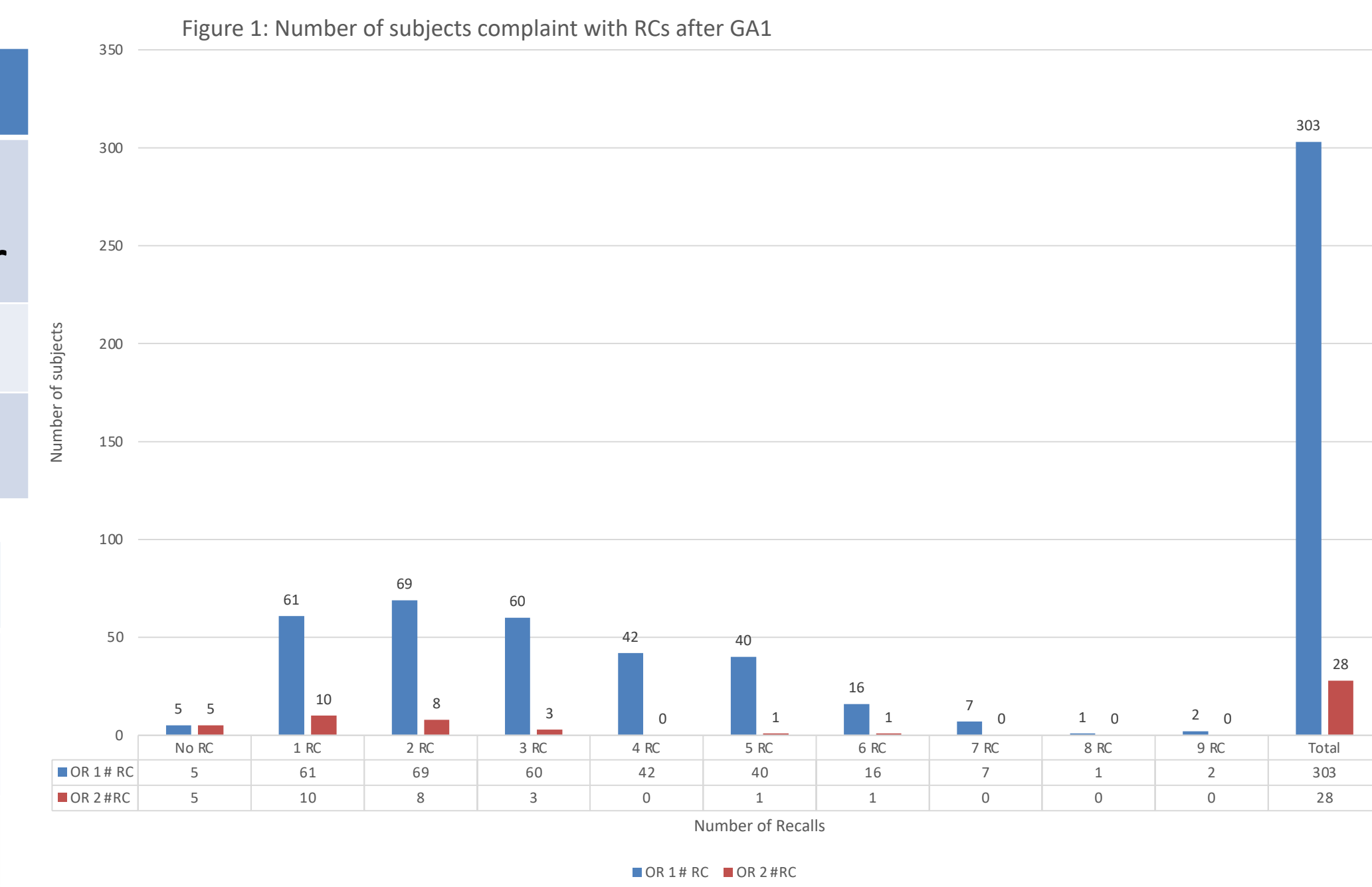
	(+) Autism	(-) Autism	Total Number
Total	55	248	303
# GA 2 (%)	13/55	15/248	

	2-5	6-9	10 - 12	Total
Total	226	63	14	303
# GA 2 (%)	15/226	9/63	4/14	28



Discussion

- Table 1,5 and Figure 1: More patients who were not as complaint with their recalls were more likely to undergo GA2 for new/recurrent caries. More patients requiring another round of GA for FMDR attended their recall visits at a lower frequency after GA and were younger at the time of GA1. This can be due to new teeth erupting (permanent molars) following initial treatment
- There was a slightly higher number of patients who followed up with their Post op visit after the first round of GA compared to the other patients who did not follow up.
 - o Sheller et al (2003): 10% of patients who underwent GA2 did not follow up for exams and only came in as walk in emergencies.
- Table 4 and Figure 4: Younger patients at the time of GA1 were more likely to require further treatment compared to older children
 - o •Worthen et al 2000: 20% of young patients required another round of GA
- Table 2 and Figure 2: Patients with SHCNs were more likely to undergo repeated OR compared to their healthy peers. Guidry et al (2017): patients that are medically compromised are 4 times more likely to undergo a second round of GA.
- Figure 6: Even though there were more patients with SHCN who underwent GA twice within three years, these patients were more likely to have less recalls compared to the healthy cohort.
- Figure 5: Within the 3-year time frame, between OR 1 and OR2, more patients with SHCN compared to no SHCN transferred from one age category to another



Conclusion

Understanding that caries has a complex multifactorial etiology with many risk factors, protective factors and risk indicators that contribute to disease. Even though caries relapse after FMDR under GA is high, it can serve as an acceptable alternative treatment modality to treat ECC in children who are not able to tolerate dental treatment in the clinical setting. FMDR under GA should not be regarded as the "go to" treatment, but should be viewed as a treatment modality highly emphasizing post op prevention plan to reduce the need for repeated GA. Strict recall schedules and prevention strategies should implemented on patients who are high caries risk.

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