

Comparing Oral Health Related Quality of Life for Children Before and After General Anesthesia

Bhakti K Desai DMD¹, Brittaney J Hill DDS, MPH, MS¹, Marcio A da Fonseca DDS, MS¹, Charles W LeHew, PhD¹ and Helen Lee, MD, MPH²

¹Department of Pediatric Dentistry, College of Dentistry, UIC, Chicago, IL, USA

² Department of Anesthesiology, UI Hospital and Health Sciences System, Chicago, IL, USA

INTRODUCTION

- Studies show that dental caries and poor oral health impact children’s overall systemic health, social development, and intellectual development. ^{1,2}
- Due to extensive dental needs, inability to tolerate dental treatment, and age, many children require treatment under general anesthesia.
- Numerous authors have evaluated the OHRQoL of pediatric patients undergoing general anesthesia, and the results have shown definite improvements. ^{3,4,5,6}
- Only one study has now been conducted in the United States. Our aim was to assess the impact of dental treatment under general anesthesia for our patients.

HYPOTHESIS/ OBJECTIVES

Objective:

- To evaluate the OHRQoL (pre-surgery and post-surgery) of pediatric dental patients (3 to 17 years old) before and after being treated under general anesthesia.
- To compare OHRQoL studies completed internationally and the one study completed in the United States so far and understand if the trends are reflected in the United States.

Hypothesis:

- The null hypothesis states there will not be a significant improvement in the patient’s OHRQoL following general anesthesia for complete oral rehabilitation.
- This would be indicated by no change or an increase in the OHRQoL score.

MATERIALS & METHODS

- A total of 86 guardians at the University of Illinois Chicago College of Dentistry completed baseline surveys, and 33 guardians completed follow up surveys from January 2021-Maarch 2022 (IRB #2020-1383).
- ECOHIS survey administered through Qualtrics for baseline and follow-up responses.
- The 13-question ECOHIS survey is a 5-point Likert scale that is divided into two sections: the child impact sections (CIS) and family impact section (FIS).
- The subsection scores are summed to calculate the overall OHRQoL score.
- Follow-up responses between 6 months – 1 year following surgery.
- Paired Samples T-Test and Wilcoxon’s Signed Ranks tests were used to assess statistical significance ($P < .05$).

Inclusion Criteria:

- Patients 3 – 17 years old
- American Society of Anesthesiologists (ASA) Classifications I and II
- Patients in the Department of Pediatric Dentistry at the University of Illinois Chicago undergoing complete oral rehabilitation under general anesthesia in the Outpatient Care Center (OCC).

Exclusion Criteria:

- Medically compromised (ASA > 2)
- Not receiving treatment under general anesthesia.

Figure 1. The Early Childhood Oral Health Impact Scale (ECOHIS)

- How often has your child had pain in the teeth, mouth, or jaw? How often has your child...because of dental problems or dental treatments?
- Had difficulty drinking hot or cold beverages
- Had difficulty eating some foods
- Had difficulty pronouncing any words
- Missed preschool, daycare, or school How often has your child...because of dental problems or dental treatments?
- Had trouble sleeping
- Been irritable or frustrated How often as your child...because of dental problems or dental treatments?
- Avoided smiling or laughing when around other children
- Avoided talking with other children How often have you or another family member...because of your child’s dental problems or dental treatments?
- Been upset
- Felt guilty How often...
- Have you or another family member taken time off from work because of your child’s dental problems or treatments?
- Has your child had dental problems or dental treatments that had a financial impact on your family?

RESULTS

Table 1. Baseline and Follow Up ECOHIS Scores (n = 33)

	Baseline			Follow Up		
	Overall	CIS	FIS	Overall	CIS	FIS
Mean ± SD	27.15 ± 8.31	17.89±5.37	9.26±3.97	18.94±5.36	12.84±3.54	6.09±2.61

Table 2. ECOHIS Score Differences (n = 33)

	Mean Difference (%)
Overall Score	8.21 (32.4%)
CIS	5.05 (28.23%)
FIS	3.07 (57.13%)

Table 3. Paired Samples Statistical Analysis

ECOHIS Questionnaire Categories	Paired Samples T-Test		Wilcoxon’s Test	
	t value	P value	Z score	P value
Overall ECOHIS Score	5.35	< .001	-3.99	< .001
Child Impact Score	4.630	< .001	-3.66	< .001
Family Impact Score	4.83	< .001	-4.00	< .001

- Baseline, child impact subsection, and family impact subsection OHRQoL scores were statistically significantly higher than the follow-up OHRQoL score ($P < .001$).
- Using Pearson’s correlation, there was no correlation between patient age and ECOHIS score ($P > .05$).

CONCLUSIONS

- OHRQoL significantly improved for both children and their families following GA for complete oral rehabilitation.
- A greater percent change in OHRQoL was noted in studies completed internationally.
- A greater percent change in OHRQoL was noted in this study compared to the other study completed in the United States.⁷
- Findings suggest GA can improve child symptoms, function, psychology, and social interactions while reducing parent distress and impact on family function.

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ACKNOWLEDGEMENTS

I would like to thank my research committee (Drs. Hill, da Fonseca, LeHew, and Lee) for their support, encouragement, and generous feedback for my project. I would also like to thank Dr. Avenetti for his support throughout this project too.