



Adverse Events of Children Waiting for Dental Treatment under GETA

Pabón Vázquez E, Paulo Malavé C, Guo K.

University of Puerto Rico, School of Dental Medicine

San Juan, Puerto Rico



Introduction

- Dental caries is the most prevalent chronic disease in both children and adults. General anesthesia is a recognized behavior management option for pediatric patients where non-pharmacologic behavior techniques are not feasible. Across the United States, the average waiting time for a patient to receive dental treatment in the operating room, including patients experiencing dental pain, ranges from 28 to 71 days. In Puerto Rico, there are no studies about the waiting time and classification system for this patient. The UPR SDM school clinic services a generous number of patients referred considering its affordability, the convenient location in the capital area, and the access to the only pediatric tertiary care center on the Island.

Objectives

- Study the waiting time of patients to receive dental treatment under general anesthesia.
- Determine the occurrence of adverse events during the waiting time for dental treatment under general anesthesia.

Materials

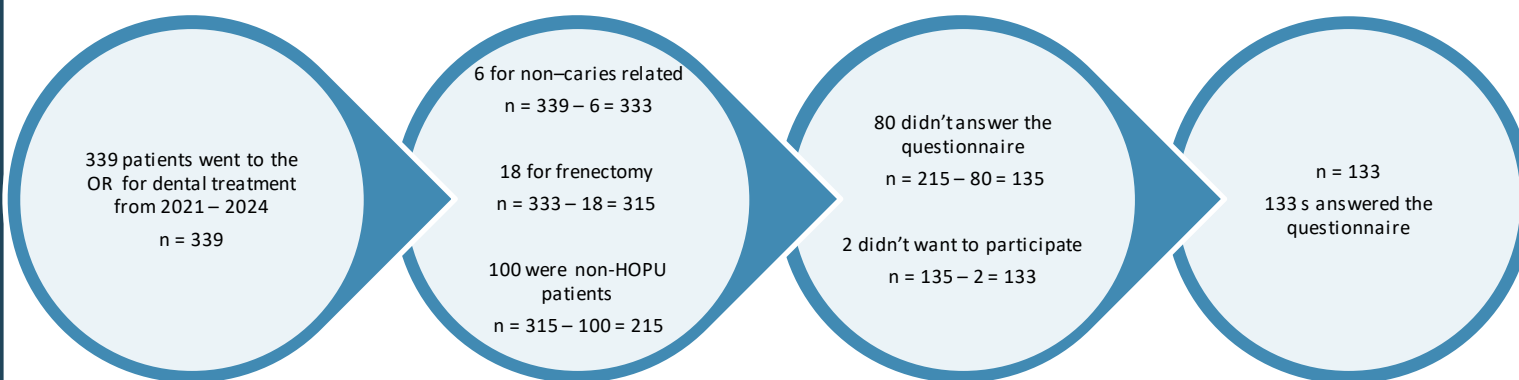


Diagram #1: Sample of the Study

Questionnaire for the Study

During the waiting period before to receive dental treatment in the operating room:

1. Has your child complained about dental pain?
a. Yes
b. No
2. Has your child experienced any difficulty eating or drinking due to dental pain problems?
a. Yes
b. No
3. Has your child experienced any difficulty sleeping due to dental pain (example: waking up during the night with tooth pain, pain depriving them sleep, or something similar)?
a. Yes
b. No
4. Has your child missed school days due to dental related problems?
a. Yes
b. No
5. Has your child taken any antibiotics (amoxicillin, clindamycin, among others) for tooth related pain?
a. Yes
b. No
6. Has your child needed pain medications (aspirin, ibuprofen, among others) for tooth related problems?
a. Yes
b. No
7. Has your child experienced any swelling at the face, neck, mouth area due to dental related problems?
a. Yes
b. No
8. Has your child visited an emergency room due to dental pain, swelling, abscess?
a. Yes
b. No

How many times _____

9. Did your child get hospitalized during the waiting time period before going to general anesthesia dental treatment because of dental infection or other diseases related to teeth?
a. Yes
b. No

How many hospitalizations _____

10. Other adverse effects you can tell us about during the waiting period?

11. Did your child receive dental treatment at the dental clinic of School of Dental Medicine during the waiting time period?
a. Yes
b. No

12. Which type of dental treatment did your child received before going to general anesthesia treatment?
a. SRP
b. Glass ionomer
How many times _____
SRP _____ Glass ionomer _____

13. Did you change your opinion during the waiting time about your child going to GETA?
a. Yes
b. No

14. Did you change your opinion during the waiting time about going to a private dental to receive treatment for your child?
a. Yes
b. No

15. During the waiting time period did your child visit another dental for dental treatment?
a. Yes
b. No

Questionnaire for the Study

Methods

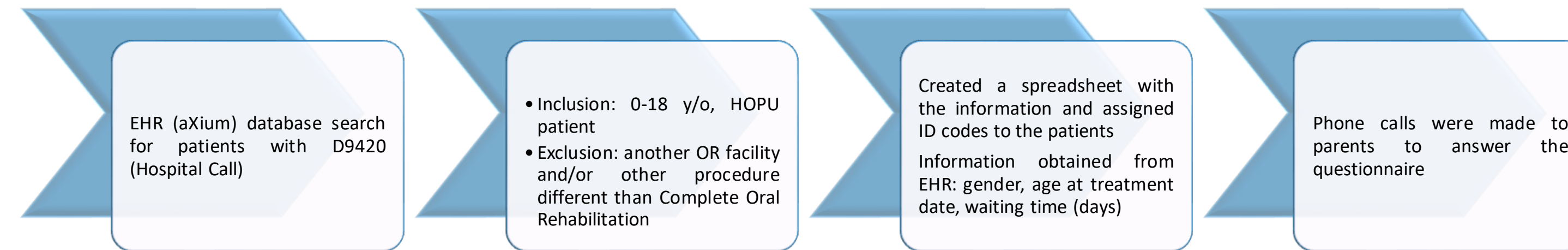


Diagram #2: Methodology of the Study

Results

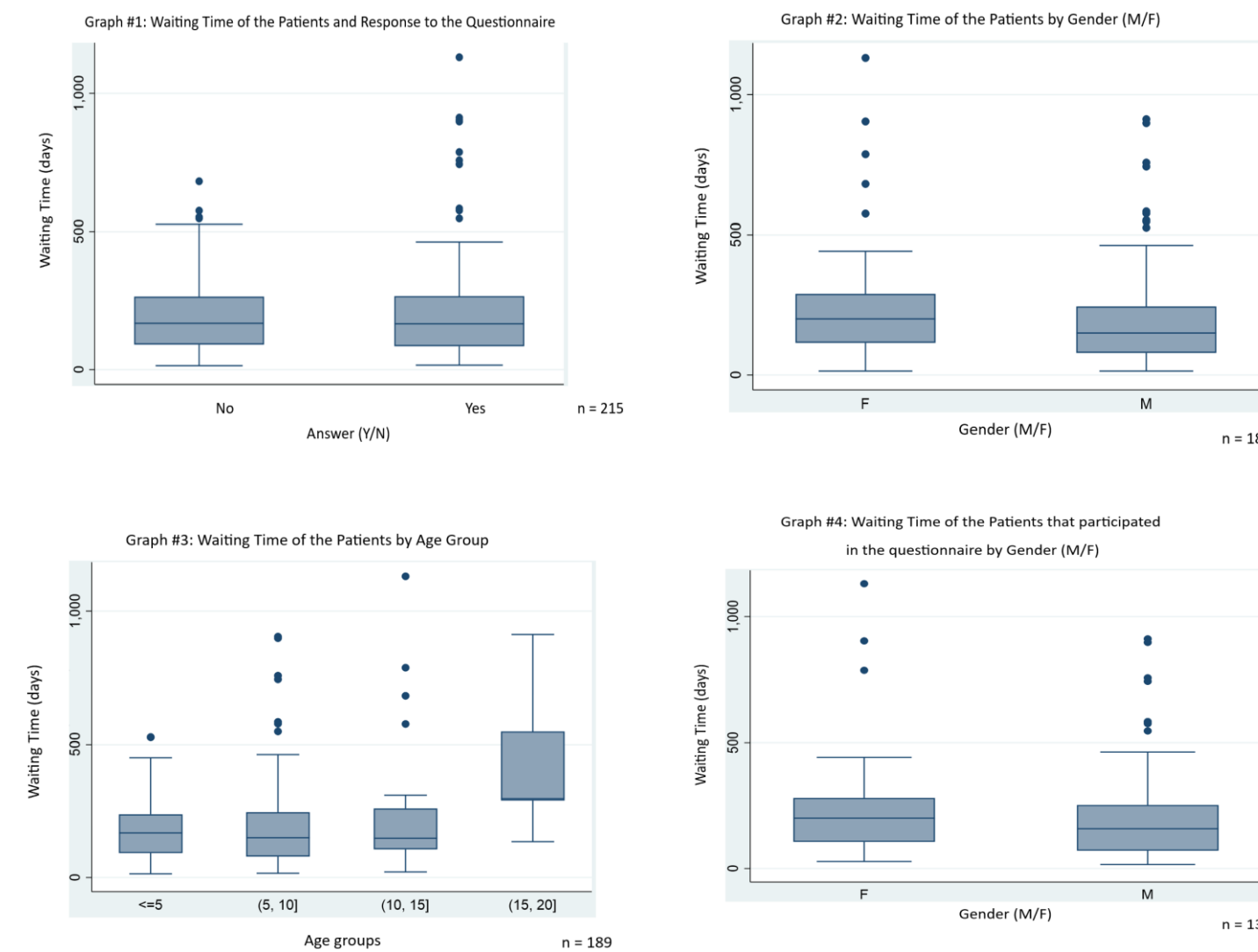


Table #1: General Results of the Questionnaire

	Yes	No
Dental Pain	73 (54.9%)	60 (45.1%)
Difficult eating or drinking	56 (42.0%)	77 (58.0%)
Pain that deprived sleeping	45 (33.8%)	88 (66.2%)
Missed school days	66 (49.6%)	67 (50.4%)
Took antibiotics	42 (31.6%)	91 (68.7%)
Needed pain medication	70 (52.6%)	63 (47.4%)
History of swelling related to dental problems	45 (33.8%)	88 (66.2%)
Visited the emergency room	26 (19.5%)	107 (80.5%)
Required hospitalization	5 (3.8%)	128 (96.2%)
Received dental treatment	22 (16.5%)	111 (83.5%)

Diagram #3: General Results Diagram

Conclusions

- This study brings an opportunity to analyze the actual classification system and create a new one that prioritizes and reduces the possibility of adverse events.
- The average waiting time was higher compared to the time across the nation. The limitations include access to the only tertiary care center, the complexity of patients, and limited scheduling options in the OR.

Future Directions

- Develop a classification system that prioritizes patients according to medical condition, behavior, extension of treatment, and access to dental care.
- Analysis of the occurrence of adverse events after this classification is implemented.
- Establish a protocol to prevent adverse events for patients waiting to receive dental treatment under GETA.

References

1. U.S. Department of Health and Human Services. Oral health in America: A report of the Surgeon General, Executive summary. Rockville, MD: National Institutes of Health, National Institute of Dental and Craniofacial Research. 2000.
2. Dye B.A., Tan S., Smith V., Lewis B.G., Barker L.K., Thornton-Evans G., Eke P.J., Beltran-Aguilar E.D., Horowitz A.M., Li C.H. (2007) Trends in oral health status: United States, 1988–1994 and 1999–2004. *Vital Health Stat.*. Series 11, Data from the *National Health Survey*, 1–92.)
3. American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. The Reference Manual of Pediatric Dentistry. Chicago, Ill.: American Academy of Pediatric Dentistry; 2022:321–39.
4. Pham, L., Tanbonlong, T., Dizon, M. B., Huang, A., & Cooke, M. (2018). Trends in general anesthesia utilization by board-certified pediatric dentists. *Pediatric Dentistry*, 40(2), 124–130.
5. Lewis CW, Nowak AJ. Stretching the safety net too far waiting times for dental treatment. *Pediatr Dent*. 2002 Jan-Feb;24(1):6–10. PMID: 11874063.
6. Goodwin, M., Sanders, C., Davies, G. *et al*. Issues arising following a referral and subsequent wait for extraction under general anaesthetic: impact on children. *BMC Oral Health* 15, 3 (2015). <https://doi.org/10.1186/1472-6831-15-3>
7. Hughes B, Berry E, Unkel J, Reinhartz J, Reinhartz D. Developing a Classification System for Prioritizing Pediatric Dental Patients Needing Treatment under General Anesthesia. *J Can Dent Assoc*. 2022 Jan;88:m2. PMID: 35881058.
8. Dexter, Franklin MD, PhD; Macario, Alex MD, MBA; Traub, Rodney D. PhD; Hopwood, Margaret PhD; Lubarsky, David A. MD. An Operating Room Scheduling Strategy to Maximize the Use of Operating Room Block Time: Computer Simulation of Patient Scheduling and Survey of Patients' Preferences for Surgical Waiting Time. *Anesthesia & Analgesia* 89(1):p 7–20, July 1999. | DOI: 10.1213/00000539-199907000-00003
9. Schulz-Weidner N, Schlenz MA, Jung LG, Uebereck CF, Nehls A, Krämer N. Dental Treatment under General Anesthesia in Pre-School Children and Schoolchildren with Special Healthcare Needs: A Comparative Retrospective Study. *J Clin Med*. 2022 May 6;11(9):2613. doi: 10.3390/jcm11092613. PMID: 35566744; PMCID: PMC9104367.
10. Haubek D, Fuglsang M, Poulsen S, Rølling I. Dental treatment of children referred to general anaesthesia—association with country of origin and medical status. *Int J Paediatr Dent*. 2006 Jul;16(4):239–46. doi: 10.1111/j.1365-263X.2006.00737.x. PMID: 16759320.
11. Badre B, Serhier Z, El Arabi S. Waiting times before dental care under general anesthesia in children with special needs in the Children's Hospital of Casablanca. *Pan Afr Med J*. 2014 Apr 20;17:298. doi: 10.11604/pamj.2014.17.298.2714. PMID: 25328594; PMCID: PMC4198280.
12. Casas MJ, Kenny DJ, Barrett EJ, Brown L. Prioritization for elective dental treatment under general anesthesia. *J Can Dent Assoc*. 2007 May;73(4):321. PMID: 17484795.

Acknowledgments

I would like to thank Ms. Magaly Torres for her support with the REDCap software, Dr. Agrait, Dr. Lydia Lopez, DS-IV Josaranie Nieves, Amberlin Medina, and Javennys Ayala for their help with the data collection and entry, the parents of the patients that participated in this study, and God for the strength to complete this project.

