

BACKGROUND

Pediatric feeding disorders (PFD) are defined by any impairment in oral intake that is not age-appropriate and may be associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction.¹ Many patients with PFD are often fed enterally via a percutaneous endoscopic gastrostomy (PEG) due to swallowing difficulties, malabsorption, or special feeding requirements.² The diet and feeding of pediatric patients are intimately intertwined to their oral health status. Many factors may influence caries risk and utilization of general anesthesia in this population, such as timing of tube placement, first dental visit, feeding therapy utilization, and frequency of recalls. Previous studies have demonstrated lower caries risk in tube-fed children and higher calculus levels.³ However, further analysis is required to fully elucidate the interaction of these risk factors with general anesthesia utilization. Understanding this interaction may also contribute to reducing healthcare costs for families and provide guidance and education for physicians and dentists treating these children.

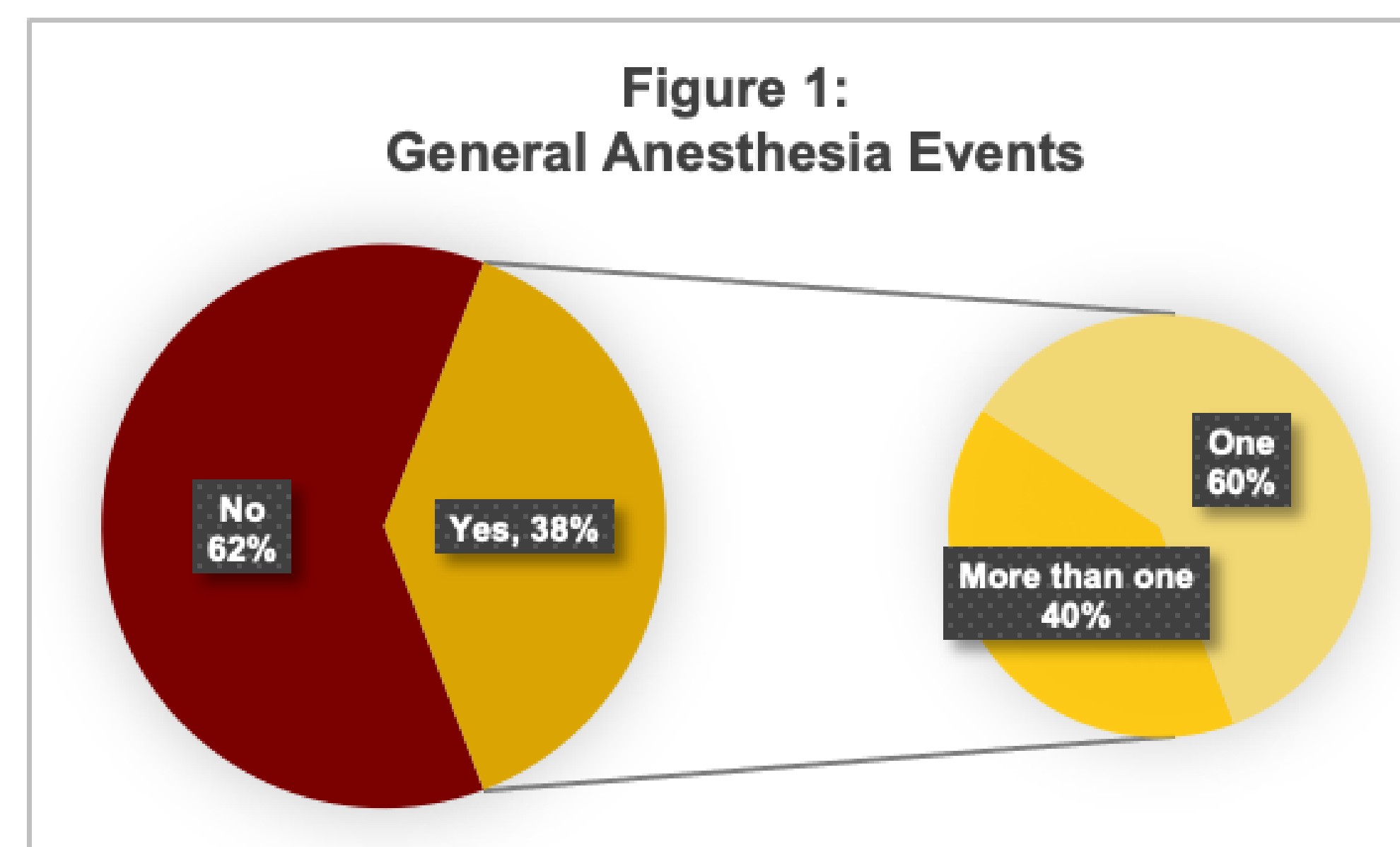
PURPOSE

The purpose of this study is to review the oral health status of children with pediatric feeding disorders at Children's Hospital Los Angeles (CHLA) feeding and dental clinics. Furthermore, the aim is to evaluate the correlation of known risk factors for this population and frequency of operating room events. This includes exploring the roles of preventive oral care and known comorbidities, such as developmental delay, neuromotor challenges, craniofacial anomalies, and pulmonary complications, in the oral health status of this population.

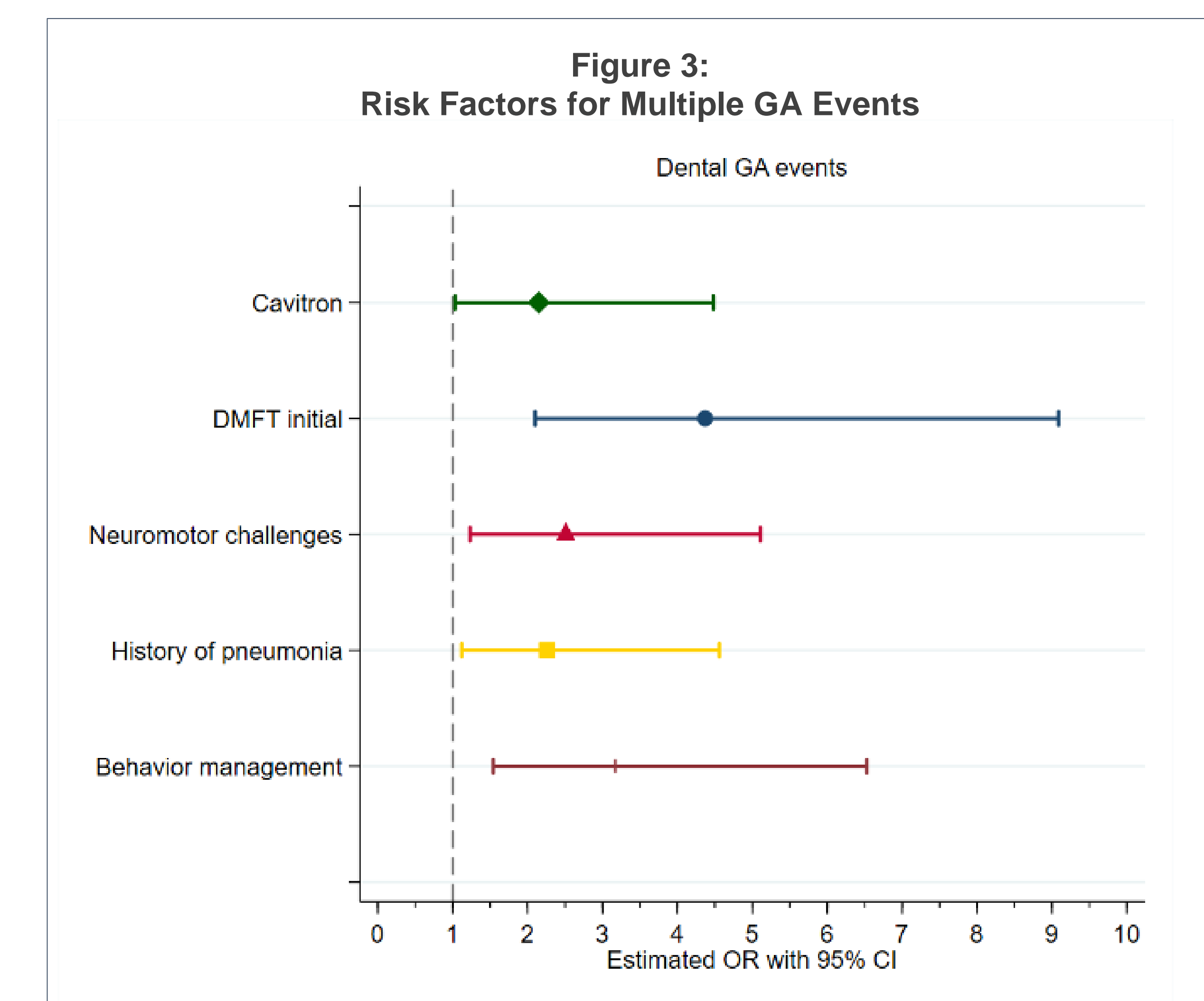
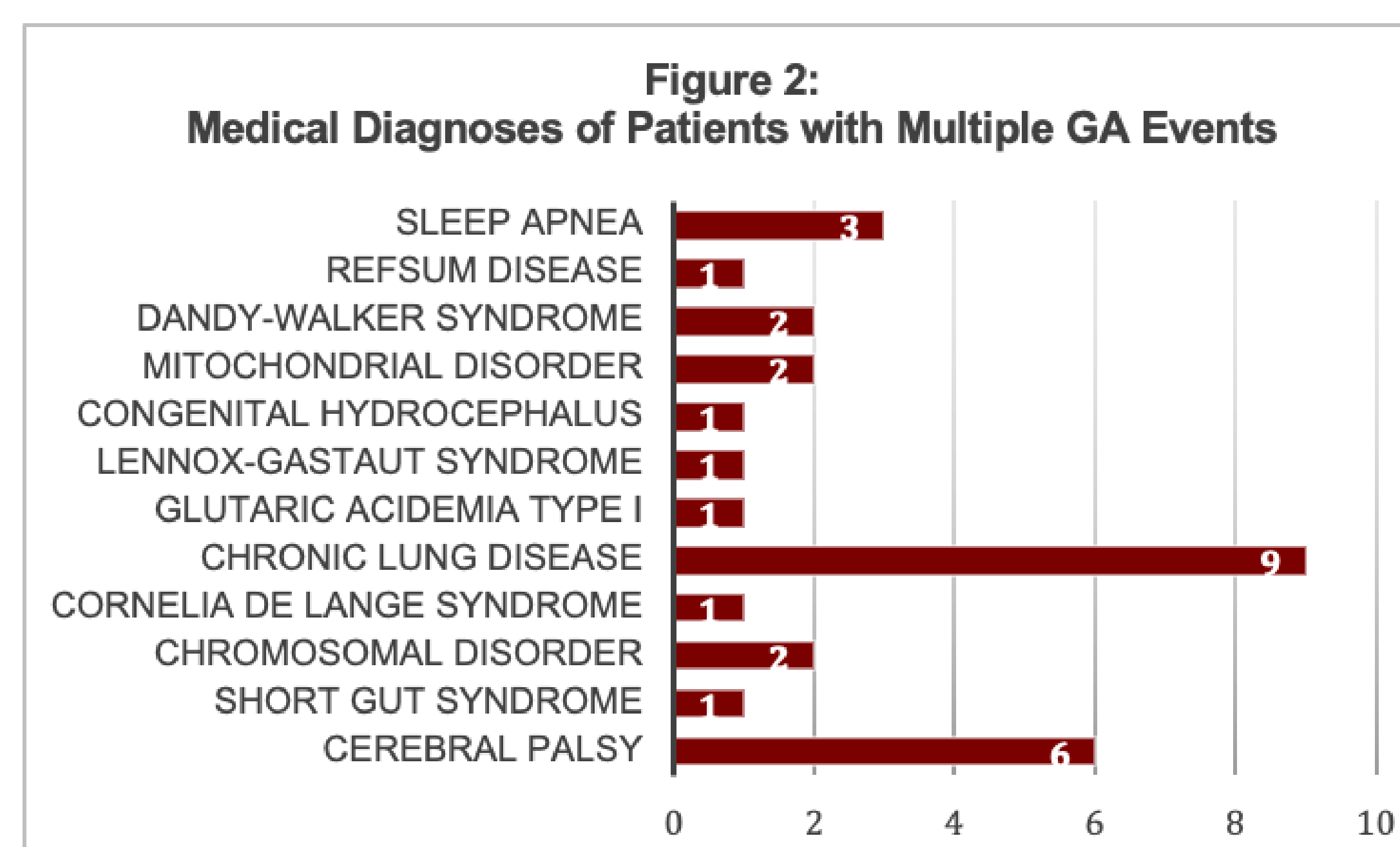
METHODS

A retrospective medical chart review of patients at the CHLA feeding clinic with the diagnosis of pediatric feeding disorders ages 0-18 with SNOMED CT codes was conducted. The following SNOMED CT codes were used: feeding difficulties, feeding difficulty in newborn, feeding difficulty in child, and feeding difficulty in infant. Inclusion criteria consisted of patients 0-17 years old who underwent complete initial assessment in the CHLA feeding clinics between 2015 and 2019, and who underwent at least an initial examination at the CHLA Dental clinic. Exclusion criteria included a lack of any of the following: feeding/swallowing note, OT note with feeding/dysphagia focus, or dental examination note. Caries experience outcomes were measured by a combined dmft/DMFT score. Type of enteral feeding was documented. The association of several risk factors with number of general anesthesia events and caries experience (dmft/DMFT) was analyzed. Bivariate analyses were conducted, using Chi-squared tests for categorical variables and Mann Whitney U test for continuous variables, to ascertain the differences in risk factors by outcomes of caries and general anesthesia experience. To explore associations between potential risk factors and caries experience, univariate and ordinal logistic regression models were used.

RESULTS



- 145 charts were reviewed for this study. Of these, 130 charts met inclusion criteria
- Males comprised 62% of subjects, 38% were females.
- Majority of the sample (83%) was tube fed
- Sixty-five percent (64.7%) of patients were observed to have no caries at first dental visit, and 57.7% had no caries at most recent dental visit.
- Fifty patients (38.5%) had dental treatment completed under general anesthesia, and of these, 20 patients returned to the operating room more than once for dental treatment under general anesthesia (**Figure 1**).
- The most common primary medical diagnoses for patients that required multiple GA events were cerebral palsy (30%), chronic lung disease (40%), and sleep apnea (15%) (**Figure 2**).
- Patients fed by tube did not present with significantly different DMFT at initial exam compared to patients not fed enterally. However, patients fed by tube had significantly lower odds of caries at most recent visit.
- Patients with later age of tube placement were significantly more likely to have more caries, increased severity of caries, and more GA events throughout their lifetimes.
- The following risk factors were associated with higher odds of requiring more than one dental GA event: DMFT of one or more at initial exam (OR: 4.37, 95% CI: 2.10, 9.09), history of pneumonia (OR: 2.26, 95% CI: 1.12, 4.56), history of neuromotor challenges (OR: 2.51, 95% CI: 1.23, 5.11), history of requiring Cavitron scaling completed in clinic (OR: 2.15, 95% CI: 1.03, 4.48), and requiring advanced behavior management techniques (such as protective stabilization) (OR: 3.17, 95% CI: 1.54, 6.53) (**Figure 3**).



CONCLUSIONS

Based upon our results, OR utilization appears to be disproportionately high for this population, despite lower caries risk. This suggests higher costs for the healthcare system and increased burden of care for families of these patients. Our findings offer valuable information for healthcare providers and pediatric dentists in regard to specific risk factors that may place a patient at a higher likelihood of requiring dental treatment under general anesthesia. These include: heavy calculus, history of pneumonia and aspiration risk, history of neuromotor challenges, later age of tube placement, and history of requiring protective stabilization or advanced behavior management techniques.

The oral health status of this population is very dependent upon feeding route and other risk factors associated with pediatric feeding disorders. It is unclear as to what the frequency of recall visits should be in order to affect behavior change and maintenance of good oral health for this population. Dental management should be tailored to suit individual patient needs.

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