

Incidence of Parentally-Reported Dysphagia Symptoms in a Racially and Ethnically Diverse Pediatric Population



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Introduction

- **Objective:** To investigate the incidence of reported dysphagia in children with sleep disordered breathing (SDB)
- SDB encompasses snoring, mouth breathing, obstructive sleep apnea (OSA), and central sleep apnea (CSA), while dysphagia refers to swallowing difficulty.
- SDB is associated with cognitive impairment, behavioral disturbances, cardiovascular abnormalities, and failure to thrive, while dysphagia may result in malnutrition, dehydration, aspiration pneumonia, and compromised quality of life.
- Therefore, understanding the relationship between SDB and dysphagia is crucial for optimizing diagnostic strategies and developing targeted interventions.
- Despite the physical proximity of the oropharyngeal structures that play roles in both conditions, no studies to date have investigated the potential relationship between SDB and dysphagia in children.

Methods

- Boston University Medical Campus IRB approved (H-39878), participants identified via Clinical Data Warehouse
- Eligibility Criteria: aged 0 to <18 and have undergone Modified Barium Swallow (MBS) testing and/or a Clinical Feeding Evaluation (CFE) with a speech language pathologist between 03/01/2018 and 03/01/2020.
- 40-question, anonymous phone survey was administered in >5 languages to parents and guardians.
- Demographic and clinical data collected, including dysphagia and SDB information as well as swallow study and polysomnogram (PSG) results.

Results

Table 1. Patient Sample Demographics (n = 114)

Parental Characteristics		Value	Child’s Characteristics		Value
Age in years, mean (SD)		35.5 (7.4)	Age in years, mean (SD)		3.7 (2.5)
Mother, N (%)		102 (89.5)	Female, N (%)		47 (41.2)
Marital Status, N (%)			Race, N (%)		
	Married	54 (47.4)		White	28 (24.6)
	Divorced/Single	60 (52.6)		Hispanic	30 (26.3)
				Black	35 (30.7)
				Other	21 (18.4)
Preferred Language, N (%)			Enlarged tonsils, N (%)		28 (24.6)
	English	59 (51.8)	Table 2. Frequency of SDB and Severe Dysphagia Symptoms		
	Spanish	30 (26.3)			
	Other	25 (21.9)			
Total Family Income, N (%)					
	\$20K – 49,999	29 (25.4)			
	\$50K – 99,999	9 (7.9)			
	>\$100K	36 (31.6)			
	Nondisclosed	40 (35.1)			

Table 2. Frequency of SDB and Severe Dysphagia Symptoms

Severe Dysphagia Symptoms, N (%)	Value
Solid Food	46 (40.4)
Soft Food	15 (13.2)
Liquids	21 (18.4)
Pain with Swallowing	6 (5.3)
Cough/Choke with Eating	43 (37.7)
Sleep Disordered Breathing	Value
Apneic Episodes, N (%)	23 (20.2)
Apnea Hypopnea Index, Mean (SD)	3.70 (5.18)

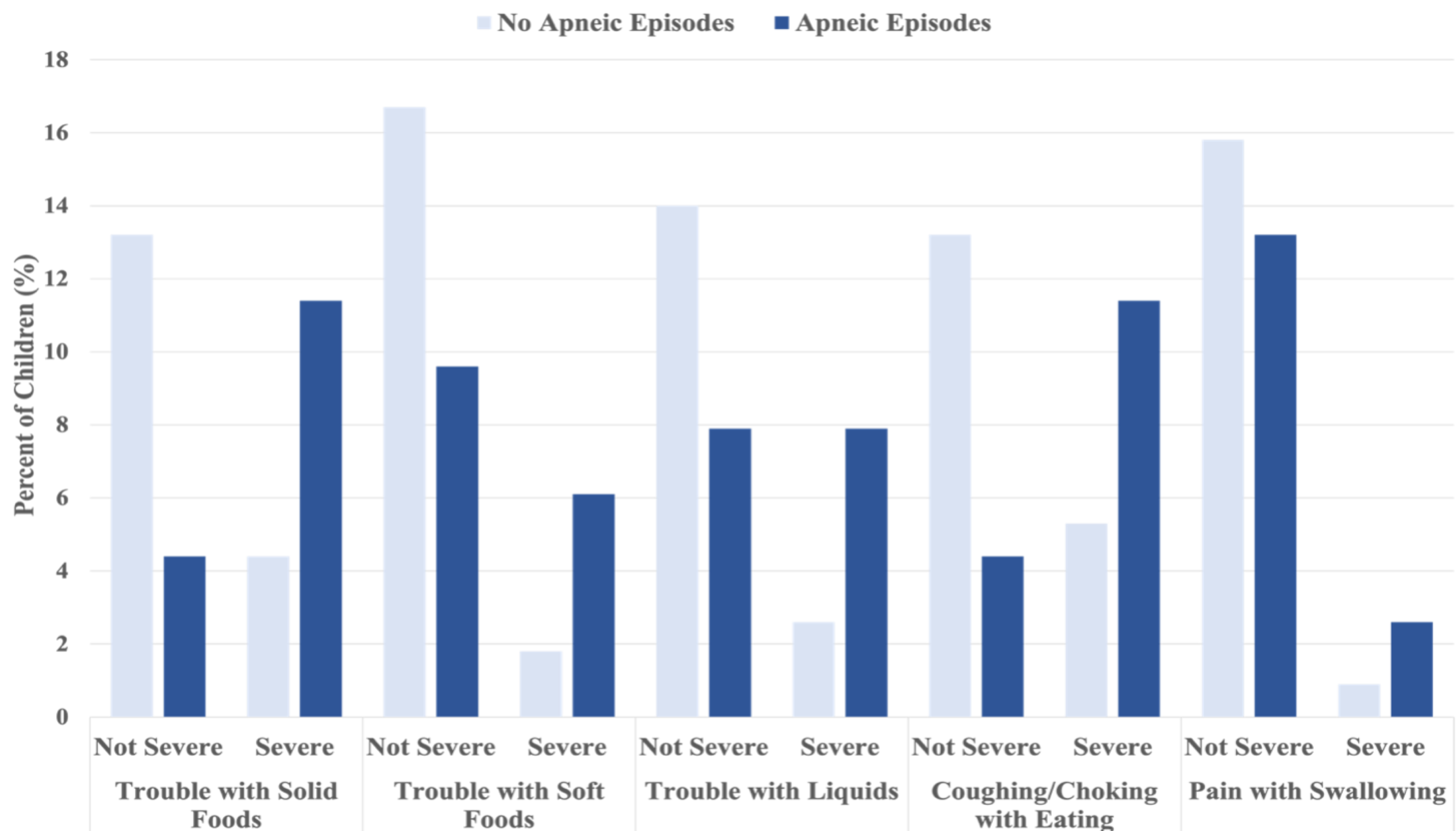


Figure 1. Apneic episodes based on dysphagia symptoms. **Children with apneic episodes had a 7% higher prevalence of severe solid food dysphagia and of severe coughing/choking with eating** than those without apnea.

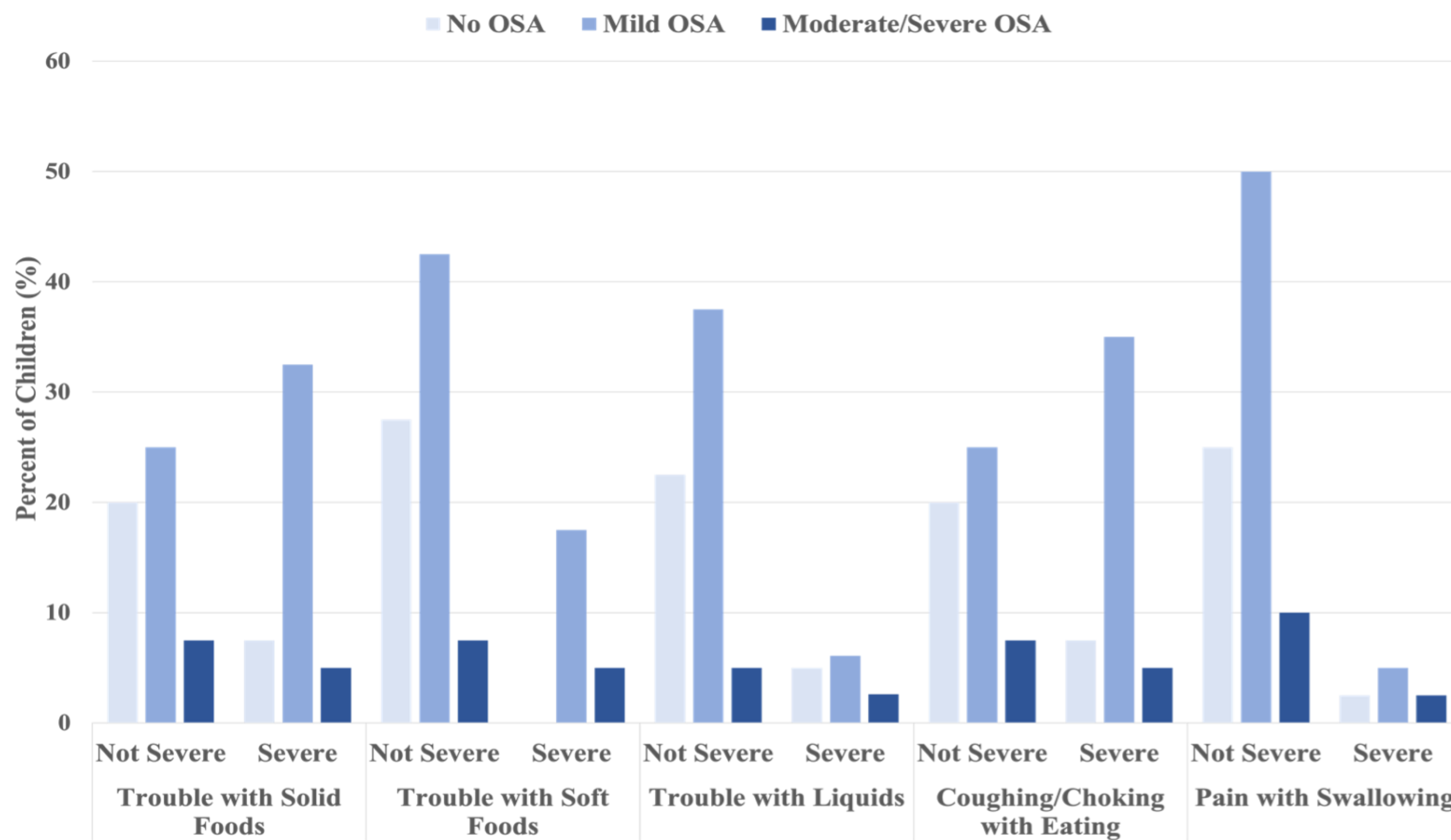


Figure 2. Presence of OSA based on dysphagia symptoms. **Children without OSA per PSG results experienced lower amounts of “severe” dysphagia symptoms.**

Key Outcomes and Conclusions

- Children with **parent-reported apneic episodes** had a **4.6 higher odds of solid food dysphagia (p<0.05)** and **15.3 higher odds of liquid dysphagia (p<0.01)** than those without apneic events.
- Children **with apneic episodes** were **5.76 times more likely to have severe coughing or choking with eating (p<0.05)**.
- Our variable-adjusted model demonstrated a **significant association** between **reported apneic episodes** and **symptoms of severe dysphagia to solid foods, liquids, and severe cough/choking with food**.
- Prevalence of **OSA in pediatric patients is estimated to be between 0-5.7%.** **However, 40% of our cohort** recruited for swallowing disorders also had a PSG.
- The findings of this study demonstrate a **significant correlation** between **parent-reported apneic episodes** and **solid and liquid dysphagia** in addition to **coughing or choking with eating**.