

INTRODUCTION

Sleep disordered breathing (SDB) can have a wide range of consequences in children, such as poor growth, speech and language delays, bedwetting, hyperactivity, and impulsive behavior⁶. Fragmented sleep prevents deep sleep, which is vital for development, especially during the early years of life⁶.

Bonuck et al (2012) found that children, as young as 6 months, who mouth breath, snore, and/or gasp during sleep, were more likely to have behavior and socio-emotional issues by age 4 to 7 years^{1,6}. Gozal et al (1998) found “an increase of obstructive sleep breathing amongst 1st graders who were in the lowest 10th percentile of their class in school performance”^{4,6}.

Children often compensate for airway obstruction by mouth breathing, which when chronic, leads to developmental changes of the lips, jaw, and tongue³. Studies have found that chronic mouth breathing can result in an incompetent lip seal, making a child more susceptible to dental caries, gingivitis, and diseases of the nose and throat^{3,5,7}.

Pediatric dentists are in an ideal position to assess airway issues in children and implement myofunctional therapy because they play a large role in the early years of life and are often the first providers to assess a child’s oral cavity and oropharynx. Assessment of myofunctional disorder also plays a role in prevention as part of comprehensive dental care.

Thus, the specific aim of this study was to survey pediatric dentists’ knowledge of early airway intervention and myofunctional therapy and to identify potential gaps in pediatric dentists’/residents’ knowledge.

METHODS

A 12-question survey assessing provider training, background knowledge, and comfort levels assessing airway issues and providing early airway intervention, was sent out via email to a list of American Academy of Pediatric Dentistry members . Four email reminders were sent out. The questionnaire was hosted by SurveyMonkey to meet security standards for online data transmission. Cross tabulation and statistical significance were calculated to analyze each objective individually.

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RESULTS

Survey was sent out to 8532 email addresses with 784 undeliverable and 418 complete survey responses. The survey received a 4.8% response rate. There was significant difference attributable to years in practice in the frequency of discussing baby-led weaning ($\chi^2 = 14.3$; $p < .001$), Fig. 1 and myofunctional therapy ($\chi^2 = 48.3$; $p < .001$), Fig. 2. The likelihood of participants taking CE about pediatric airway intervention is shown in Fig. 3. Prior airway training during residency and dental school is shown in Fig. 4. The frequencies of assessing signs and symptoms of SDB are shown in Figures 5a and 5b.

Fig. 1: Frequency Discussing Baby-Led Weaning

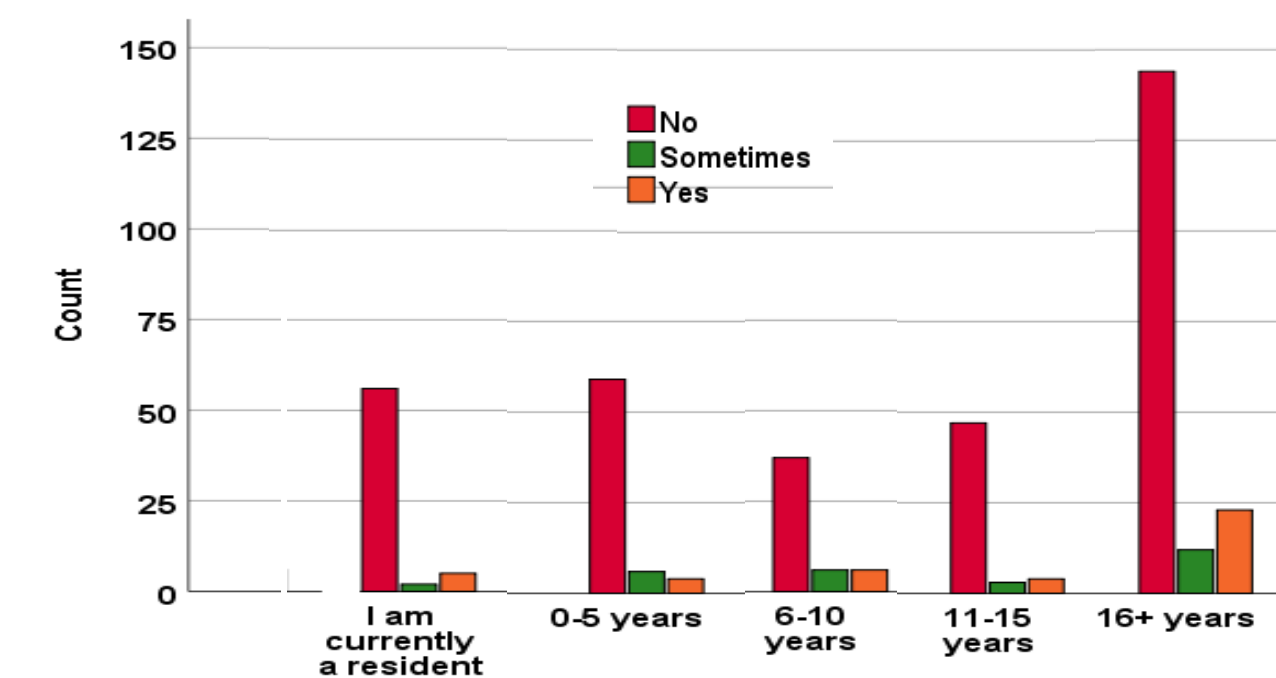


Fig. 2: Comfort Counseling on Myofunctional Therapy

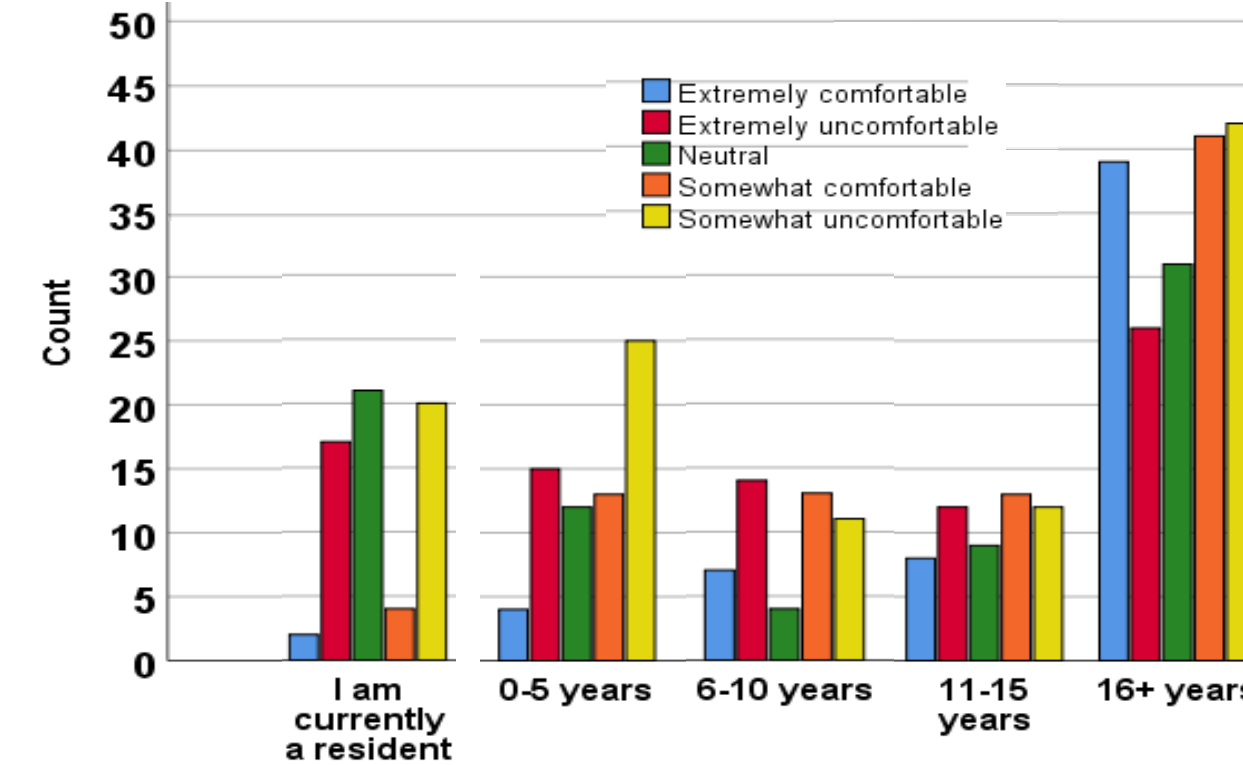


Fig. 3: Likelihood of Taking CE About Pediatric Early Airway Intervention

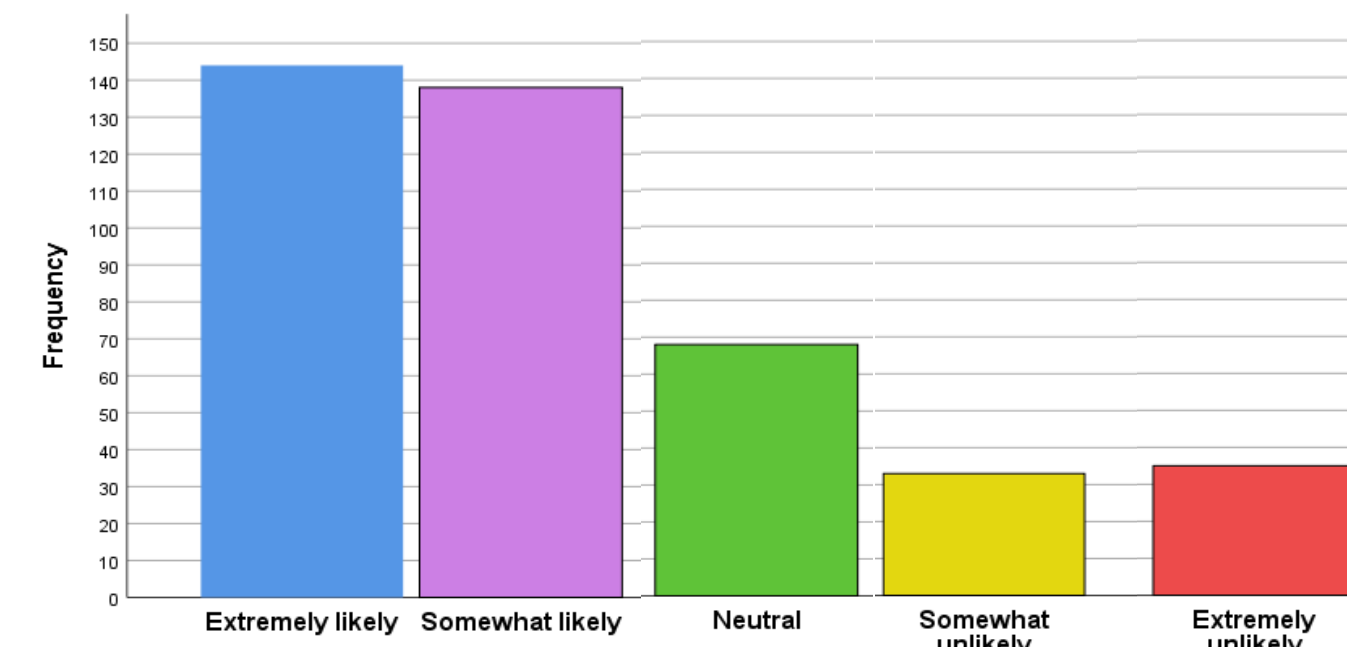


Fig. 4: Airway Training in Residency and Dental School

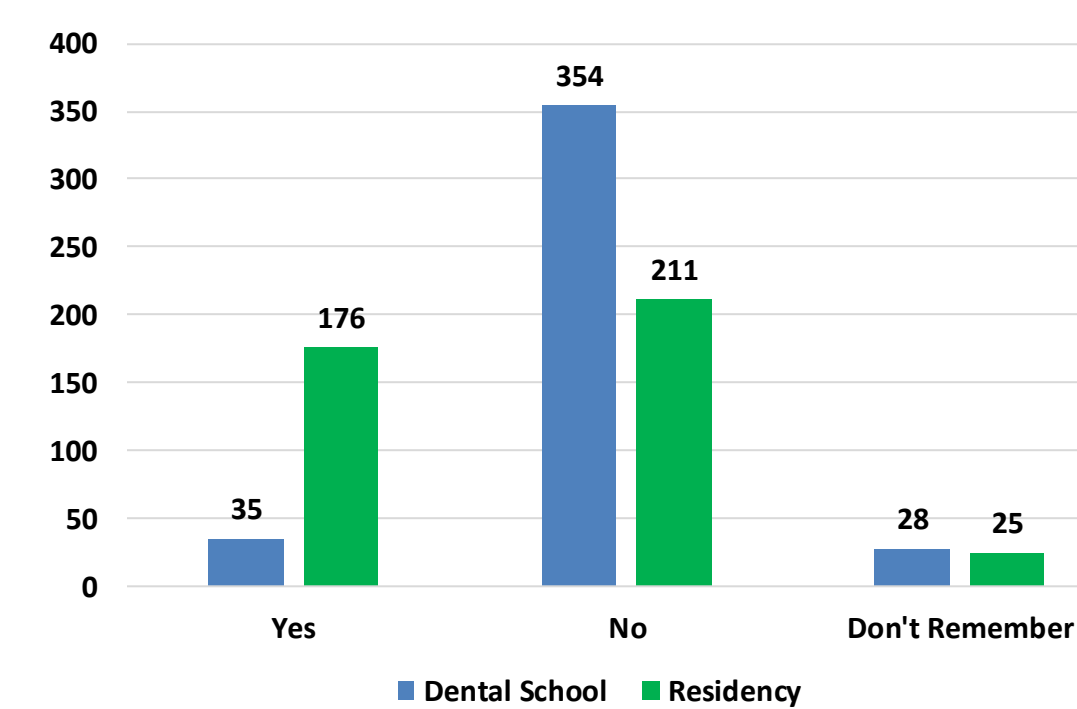


Fig. 5a: Frequency Assessing Signs of SDB

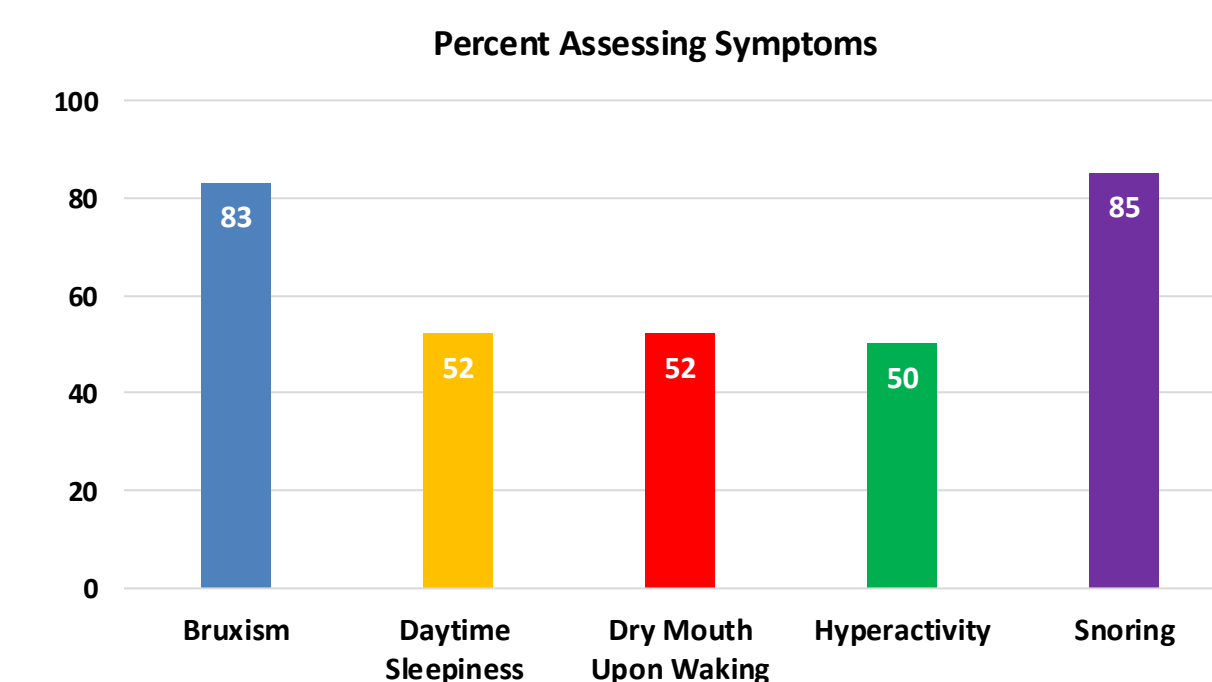
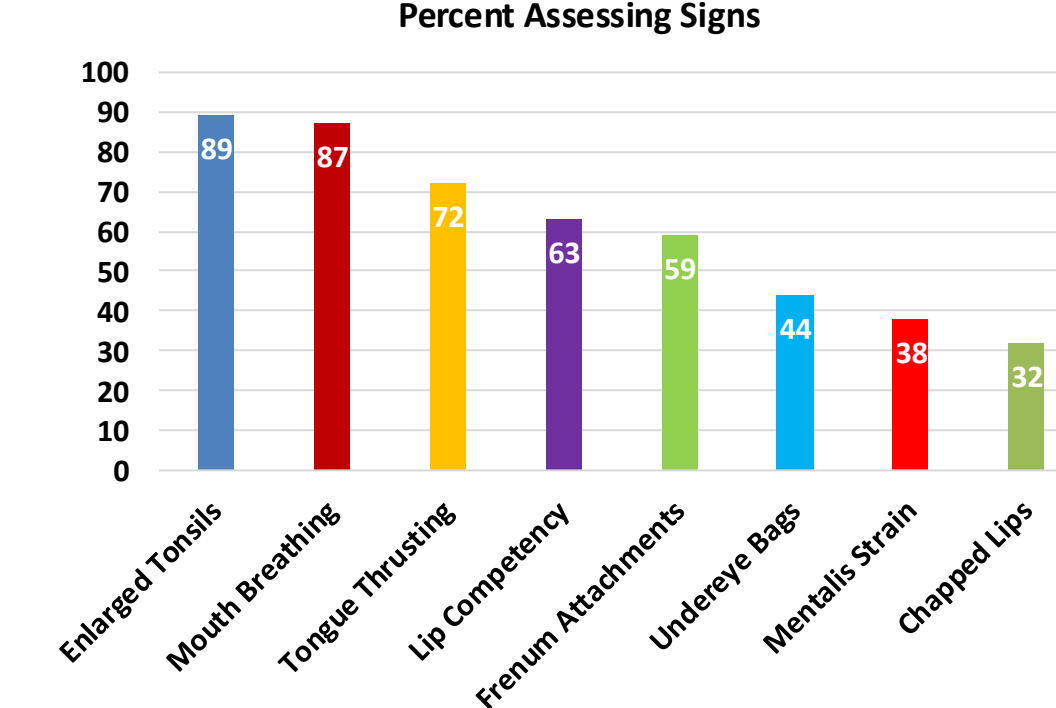


Fig. 5b: Frequency Assessing Symptoms of SDB



There was a significant association between years in practice and frequency of discussing baby-led weaning (BLW) ($\chi^2 = 14.3$; $p < .001$) and myofunctional therapy ($\chi^2 = 48.3$; $p < .001$). The majority of participants reported no training on airway intervention and myofunctional therapy in dental school, while 51% of respondents reported having at least some training during residency (Fig. 4)

The most commonly assessed sign of SDB was enlarged tonsils, while chapped/puffy lips were the least frequently assessed (Fig. 5a).

For symptoms, bruxism and snoring were the most commonly evaluated indicators of SDB (Fig. 5b). More experienced providers were significantly more likely to discuss BLW and myofunctional therapy ($p < .001$), but overall, discussions on these topics remained infrequent across all experience levels (Fig. 1).

DISCUSSION & CONCLUSION

The results reveal an increase in frequency of discussion of BLW and comfort counseling parents on myofunctional therapy with increased years in practice. More emphasis on BLW and myofunctional therapy in residency curricula could lead to more discussions of BLW across providers of all experience levels. However, the results demonstrate an overall infrequency of BLW discussion and general discomfort counseling on myofunctional therapy across providers of all experience levels.

Myofunctional therapy can address several disorders, such as mouth breathing, incompetent lip seal, thumb sucking, OSA, nocturnal bruxism, malocclusion and orthodontic instability, tongue thrusts and reverse swallowing, and speech misarticulations⁷. Camacho et al (2015) published a metanalysis that found myofunctional therapy could decrease OSA by an average of 62% in children and 50% in adults, emphasizing its potential benefits in pediatric dental practice as well as the longevity of its benefits².

The findings highlight a critical gap in pediatric dental education regarding airway-focused assessments and interventions. While experienced providers were more likely to discuss BLW and myofunctional therapy, there remains an overall deficiency in knowledge and confidence across all experience levels. One limitation of this study is the low response rate, with only 4.8% of AAPD members participating in the survey.

Integrating these topics into pediatric dental training programs could improve early diagnosis and intervention for airway disorders, while developing consistent protocols for assessing SDB signs and symptoms could improve early identification and intervention. Fig. 3 shows that over 60% of survey participants would be at least somewhat interested in seeking CE courses about pediatric early airway intervention, establishing provider interest in further education on the topic. Additional studies with broader participation could provide more insights into the barriers preventing widespread adoption of myofunctional therapy in pediatric dental practice.

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