

Pediatric Dentists’ Behaviors and Attitudes Regarding Sleep Apnea

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ABSTRACT

Purpose: To determine the prevalence of screening and attitudes regarding sleep apnea among currently practicing pediatric dentists.

Methods: A survey consisting of 23 questions was sent out via SurveyMonkey to AAPD members. The data was collected over a 4-week period in 2021. Simple statistics and Cronbach’s alpha were used. Assessment was performed of personal, practice, and demographic variables associated with pediatric dentists’ evaluation and treatment of sleep apnea in pediatric patients.

Results: The response rate was 9%. Almost all dentists reported knowing what sleep apnea is, and 74% reported having training. Dentists were internally consistent regarding their attitudes on screening and barriers (Cronbach’s alpha= 0.90 and 0.72, respectively). On 5-point Likert scale from strongly disagree (1) to strongly agree (5), they felt screening should be done (\bar{x} = 4) but were not as confident about their ability to screen (\bar{x} =3). Furthermore, lack of adequate compensation was perceived as a barrier to implementation (\bar{x} =3). Dentists (68%) reported screening for sleep apnea. Many routinely screened new or recall patients; of those dentists who didn’t routinely screen, some screened when parents had concerns regarding mouth/tonsils/oral cavity (81%), or when there were self-reported sleeping issues (78%). Tonsil size and verbal discussion with parents (89%) were some tools/markers used. No variables were found to be associated with likelihood of screening.

Conclusion: Dentists have a role in detecting sleep apnea, but barriers remain before it’s standard practice. Because of the low response rate, results must be evaluated cautiously, with the need for further data on this subject.

INTRODUCTION

Obstructive sleep apnea (OSA) is a disorder in which there is prolonged partial upper airway obstruction and/or intermittent complete obstruction (obstructive apnea) that disrupts normal ventilation during sleep and normal sleep patterns.¹ This, in essence, contributes to poor airflow.²⁻⁵ Reduced airflow leads to oxygen desaturation and subsequent arousal from sleep with spontaneous recovery.⁴ The disordered breathing during sleep can be characterized by recurrent upper airway obstruction, intermittent nocturnal hypoxia, increased awakening, and potential hypoventilation.⁶

Obstructive sleep apnea affects 1% to 6% of all children and in obese children and adolescents the prevalence is reported to be between 13% to 69%.^{3,7,8} It commonly affects children between the ages of 2-7 years of age, years which are critical for growth and development.^{5,9}

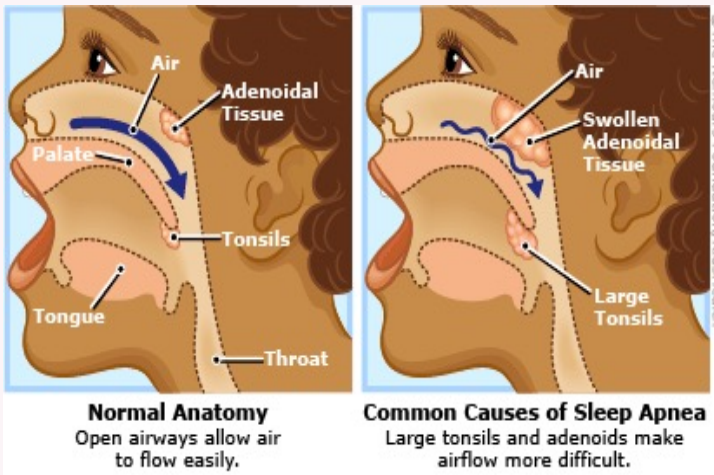
In children, hyperplasia of pharyngeal tonsils and adenoids and craniofacial disharmony are largely associated with high airway obstruction.¹⁰ Some external factors that affect upper airway size include fat deposits (related to body mass index), craniofacial features (related to genetic and functional factors), and hypertrophied tissue (often related to local inflammation).¹

Some significant risk factors for OSA in children include snoring >3 months duration, male gender and obesity.¹¹ Anatomic factors include tonsillar and adenoid hypertrophy, choanal atresia, and respiratory tissue thickening (e.g. caused by disease such as polysaccharidosis and achondroplasia).^{3,11} Children with complex comorbidities including but limited to, obesity, neuromuscular disorders (cerebral palsy, myotonic dystrophies, other myopathies), craniofacial abnormalities, genetic syndromes, sickle cell disease are all at higher risk for sleep apnea.¹²

In more recent years, there has been an increased interest in OSA in pediatric patients, due to a greater awareness of its serious potential impact on quality of life and behavioral conditions.¹³ OSA, if left untreated, has far reaching consequences, including enuresis, attention-deficit disorder, neurocognitive disabilities, behavioral problems, daytime sleepiness, poor academic performance, and failure to thrive.^{6,9} Additionally, pediatric patients, with OSA, undergoing surgery, have a higher rate of preoperative, perioperative and post-operative complications.³

The gold standard for diagnosis and assessment of OSA in children is sleep laboratory-based polysomnography (PSG). This is an expensive technique that is not easily available in all circumstances.^{14,15} A reliable screening questionnaire can help identify pediatric OSA. However, the diagnostic accuracy is generally too low to be considered a definitive diagnostic method in place of polysomnography but can be a very productive adjunct for diagnosis.¹² A questionnaire can investigate nocturnal, daytime, and cognitive symptoms of OSA as well as snoring frequency and volume, daytime sleepiness, inattentive or hyperactive behavior and other symptoms that correlate with OSA.¹⁶

The primary aim of this study is to determine the attitudes of pediatric dentists in screening patients for sleep apnea. Furthermore, if dentists are screening for pediatric sleep apnea, what, if any, actions are they taking for those patients who may have sleep apnea.



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MATERIALS AND METHODS

A survey consisting of 23 questions including demographics, practice characteristics, attitudes and knowledge of practices regarding sleep apnea, was emailed via SurveyMonkey to 6,641 active members of the American Academy of Pediatric Dentistry. Data was collected over a 4-week period, from November-December 2021, and was limited to currently practicing pediatric dentists. The data was analyzed using simple statistics, logistic regression, Cronbach’s alpha and Pearson’s chi squared test. Assessment was performed of personal, practice, and demographic variables associated with pediatric dentists’ evaluation and treatment of sleep apnea in pediatric patients.

Institutional Review Board of the Albert Einstein College of Medicine approval ID #2021-13363 was obtained prior to distribution of the survey.

RESULTS

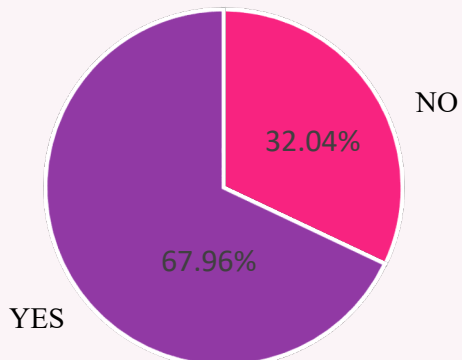
The response rate was 8.9% (n=594). Nearly all (99.7%) dentists reported knowing what sleep apnea is, while 73.9% reported having training in it. Live lecture (68.9%) was the most common form of learning, followed by self-study (68.2%) and residency/academic degree programs (51.8%). Dentists considered the most important years to screen to be between 2-4 years old (61%) and less important in those >18 years old (7.8%).

Dentists were internally consistent regarding their attitudes on screening and barriers (Cronbach’s alpha= 0.90 and 0.72, respectively). Utilizing a 5-point Likert scale from strongly disagree (1) to strongly agree (5), dentists were largely in agreement that screening should be done (\bar{x} = 4.2). Dentists recognized the importance of screening patients (\bar{x} = 4.1). Furthermore, dentists felt it should be integrated into dental programs/residencies (\bar{x} = 4.2), and dentists should learn more about this topic (\bar{x} = 4.1). However, they were not so confident about their ability to screen (\bar{x} =3.3). In addition, lack of adequate compensation was perceived as the greatest barrier to implementation (\bar{x} =3.1).

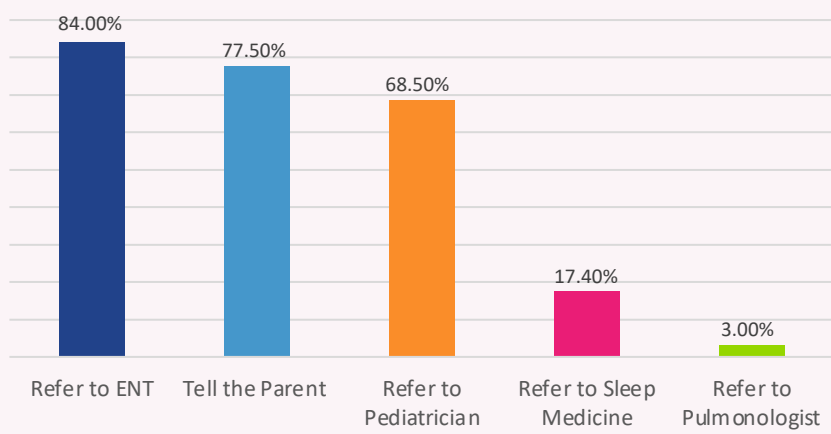
Almost 68% of dentists reported screening for sleep apnea (see graph 1). Of those dentists who screen, 81.3% reported screening ages 2-7 years old. Most dentists routinely screened new or recall patients; of those dentists who didn’t routinely screen (26.9%), some screened when parents had concerns regarding mouth/tonsils/oral cavity (81.2%), or when there were self-reported sleeping issues (77.8%). Tonsil size (88.7%) and verbal discussion with parents (88.6%) were some tools/markers used for screening (see graph 2). The most common step pediatric dentists took with patients suspected of sleep apnea was referring patients to ENT (33.6%) (see graph 3). Many dentists (72.6%) stated they do not follow up at recall/re-care visits with patients suspected to have sleep apnea. Twenty seven percent of dentists, who screened for OSA, provided services to treat sleep apnea, the most common appliances included myofunctional therapy appliances and rapid palatal expanders.

Variables such as age, gender, practice location and current primary position were not found to be associated with likelihood of screening.

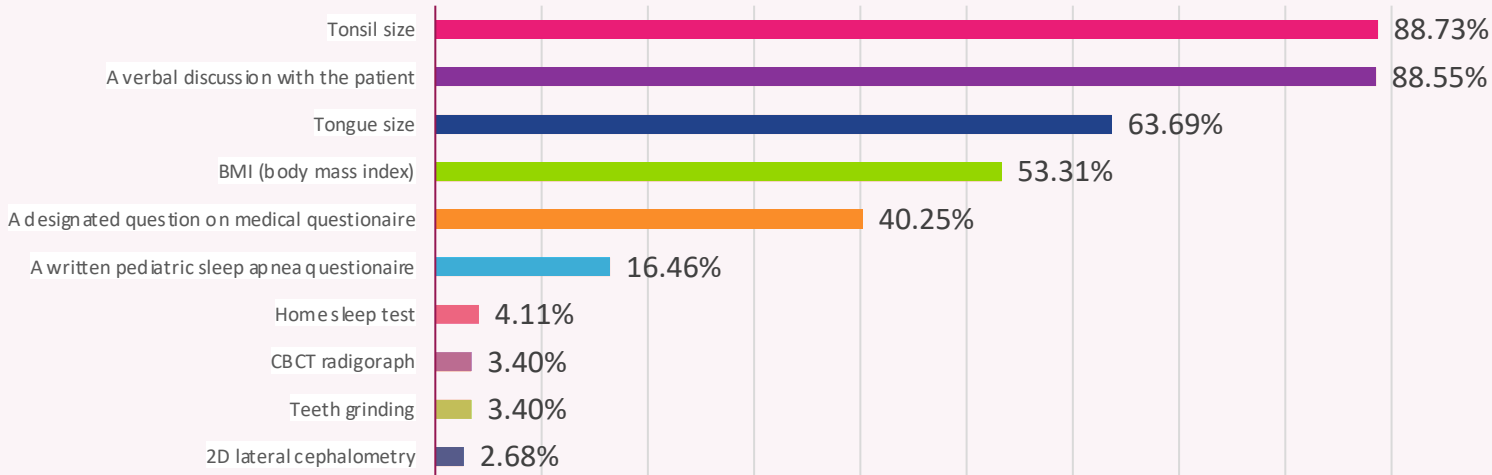
Graph 1. Dentists that perform screenings for OSA in their practice



Graph 3. Next Step taken with Patients suspected of having OSA



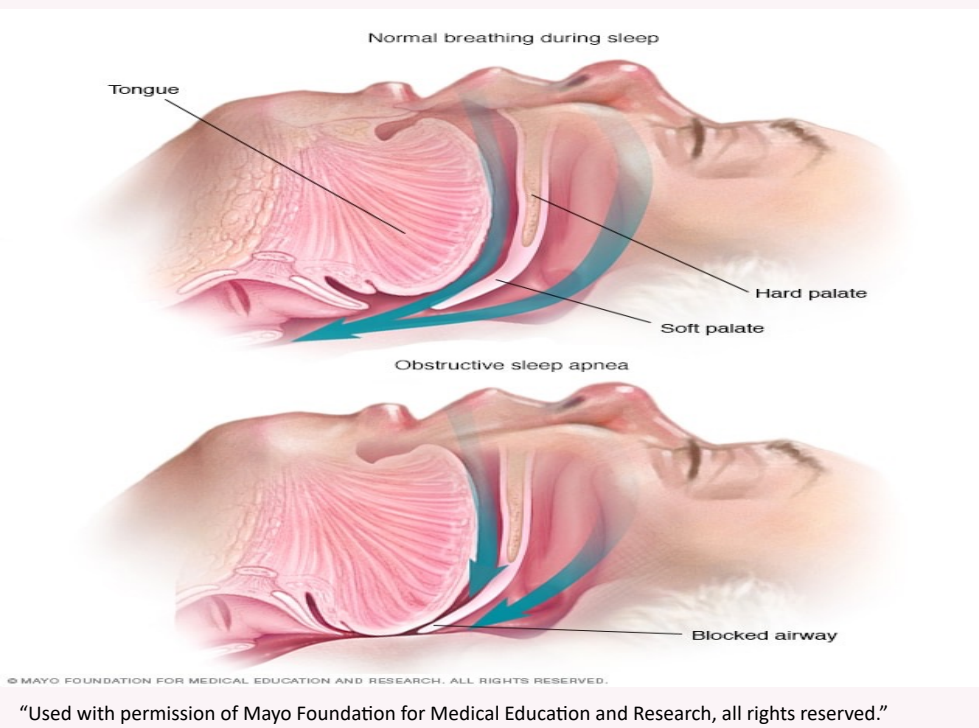
Graph 2. Tools Used to Screen for Sleep Apnea



CONCLUSIONS

Based on this study’s results, the following inferences can be made:

1. Two thirds of responding pediatric dentists feel they play a role in detecting sleep apnea, as seen by 68% of respondents reported screening for OSA.
2. Most dentists felt screening should be done but lacked the confidence to do so.
3. Pediatric dentists learned about pediatric OSA through self-study, live lecture and/or residency/academic programs.
4. Lack of compensation was identified as a barrier for routinely screening patients for OSA.
5. Based on the low response rate the results must be evaluated cautiously, with need for further data on this subject.



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