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LETTER

Beware of the Risk Factors for Pediatric Obstructive Sleep Apnea [Letter]

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Dear editor

The recent study by Yang et al[1] published in the Journal of Nat Sci Sleep has aroused my great interest. While Obstructive Sleep Apnea (OSA) has traditionally considered more prevalent in adults, recent research has revealed the alarming prevalence of OSA in the pediatric population. This study delved into the prevalence, severity, and associations between OSA and diverse conditions in the pediatric population, presenting timely and significant findings. While we commend the study for its valuable contribution, we offer some constructive suggestions for further improvement.

In the study, 70.28% of children with OSA had a BMI < =18.5. Children with low BMI exhibited higher rates of OSA. This statistical outcome may appear contrary to the common understanding of the relationship between obesity and OSA, as it is generally believed that obesity (higher BMI) is more directly related to OSA.[2] Considering that this finding may have an important impact on the diagnosis and treatment strategies of Pediatric OSA, it is important to delve into the author's detailed methods and data processing procedures for statistical analysis.

First, more detailed data analysis. The article could further analyze the differences between Pediatric OSA patients with lower BMI and those with higher BMI. This includes delving deeper into aspects of OSA's severity, accompanying conditions, and age, gender, etc. to determine whether there are other variables (such as tonsil enlargement, adenoid hypertrophy, etc.) that may influence this association.

Second, Research can conduct subgroup analysis according to factors such as age, gender, region, etc., to observe whether the relationship between BMI and OSA is more significant in certain subgroups. The study has revealed that OSA has high severity in the ages of 3 to 12 years, peaking between 4 to 8 years, and declining after 12 years.[1] Further study on whether there are other influencing factors in children with low BMI or younger children (such as tonsil hypertrophy, adenoid hypertrophy, etc). Because there is evidence that obesity and adenoid hypertrophy are the two main established risk factors for Pediatric OSA, with the contribution of adenoidal size in younger children and excess weight is more important in adolescence (ie, older than 12 years).[2] Further analysis of the relationship between age groups and different risk factors could provide a more comprehensive understanding of OSA. Even children with lower body weight should be risk assessed and monitored for OSA, instead of low BMI having higher OSA.

Third, the article conducted univariate statistical tests, such as the chi-square test, to study the association between OSA and other coexisting conditions. Considering the complexity of OSA and potential interactions with multiple factors, we recommend the use of more complex statistical models such as multivariable regression analysis. This can better handle the independent association strength between a specific coexisting condition and OSA while accounting the influence of other relevant variables (such as age, gender, adenoid hypertrophy, rhinitis, asthma, etc).

Fourth, the potential confounding factors. The study has commendably analyzed the role of allergic rhinitis, tonsillar hypertrophy, adenoid hypertrophy, and obesity as a potential risk factor for Pediatric OSA events, contributing to a more nuanced understanding of this complex sleep disorder. However, it is essential to consider other potential confounders such as gender, nocturnal enuresis, otitis media, economic, regional and other factors to enhance the robustness of the

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findings.[3,4] Earlier studies have indicated that the rate of surgery among children aged 7 to 12 years was significantly higher than among children aged 13 to 17 years. Additionally, tonsillectomy in children is more common in medium/small metropolitan area with lower socioeconomic status compared to large central metropolitan areas.[5]

By improving and supplementing the above methods, the reliability of the study can be enhanced and the phenomenon of higher OSA incidence in children with lower BMI can be better explained and understood. In addition, it can also reveal other key factors that influence Pediatric OSA. This analysis can not only increase the depth and breadth of research, but also help form a more comprehensive and scientific understanding of OSA. In conclusion, the study by Yang et al is a significant step forward in understanding of the relationship between risk factors and Pediatric OSA. Our suggestions are merely to further refine an already exceptional research piece. We look forward to more enlightening contributions from the authors in the future.

Ethics Statement

The author has confirmed that the approval of an institutional review board was not required for this work. The author also confirms that informed patient consent was not necessary for this work. The authors affirm they have read the journal's guidelines on ethical publication and affirm that this work is consistent with those guidelines.

Disclosure

The authors report no conflicts of interest in this communication.

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