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Snoring and Obstructive Sleep Apnoea has Neuropsychological Consequences in Children

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Brief Report

Obstructive sleep apnea (OSA) is a nocturnal breathing disease that affects 2-4 percent of the population. Despite the fact that OSA is linked to medical morbidity, its most functionally disruptive consequences in adults appear to be cognitive. There has been little research on the cognitive implications of paediatric OSA. The cognitive functioning of school-aged children with OSA was compared to that of healthy children in this study. The study's main purpose was to determine the presence and pattern of cognitive morbidity in children with OSA. Parent-report questionnaires and laboratory sleep investigations were used to assess sleep. Formal tests and questionnaires from parents and teachers were used to assess neuropsychological functioning. OSA-related cognitive and behavioural impairment was found in the data, with behavioural regulation and some elements of attention and executive functioning being particularly affected.

On measures of IQ, verbal memory, and processing speed, there were no significant changes. Despite the short sample size, exploratory analysis revealed no significant association between cognitive functioning and objective measures of hypoxia or sleep disruption. These findings add to a growing body of evidence that suggests serious neuropsychological abnormalities are linked to paediatric OSA. The findings point to a cognitive morbidity pattern that is similar but not identical to that reported in adults with OSA.

Sleep is necessary for good health, and it is especially important for children's growth. Symptomatic paediatric sleep-disordered breathing (SDB) refers to a group of conditions in which children develop breathing problems while sleeping. The problems vary from mild snoring to obstructive sleep apnea, which is the most serious (OSA). Apnea refers to a brief pause in breathing, which in OSA is caused by a momentary but recurrent blockage of the airway to the lungs. OSA can be caused by a variety of factors in children, including larger tonsils, long-term allergies, and obesity. OSA affects about two out of every hundred children. Loud snoring at night, interrupted, restless sleep, excessive weariness, and concentration problems are all symptoms of OSA.

Researchers believe that if left untreated, it can lead to a variety of long-term health and learning issues; children with sleep disorders have been shown to have memory problems, lower general intelligence, and poor executive function (the ability to adapt to new situations), as well as behavioural issues similar to those seen in attention deficit hyperactivity disorder (ADHD). Adults with sleep apnea have been proven to have anomalies in certain sections of their brain, including the frontal cortex, cerebellum, and hippocampus, but there is no information on whether children have similar changes. Children with sleep apnea may have cognitive problems, but there isn't much evidence on this.

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Formal tests and questionnaires from parents and teachers were used to assess neuropsychological functioning. OSA-related cognitive and behavioural impairment was found in the data, with behavioural regulation and some elements of attention and executive functioning being particularly affected. On measures of IQ, verbal memory, and processing speed, there were no significant changes. Despite the short sample size, exploratory analysis revealed no significant association between cognitive functioning and objective measures of hypoxia or sleep disruption. These findings add to a growing body of evidence that suggests serious neuropsychological abnormalities are linked to paediatric OSA. The findings point to a cognitive morbidity pattern that is similar but not identical to that reported in adults with OSA.

Snoring is a common symptom of SDB. PS is not linked to gas exchange irregularities or sleep fragmentation at the mild end of the SDB spectrum. Hypoxia, hypercarbia, and sleep fragmentation are all symptoms of OSA. Upper airway obstruction caused by aberrant anatomy (e.g., adenotonsillar hypertrophy in children) and/or insufficient control of the muscles that maintain upper airway patency is the most common cause of OSA. Respiratory effort is maintained in OSA, although airflow is restricted partially or totally.

In contrast to research in adults, the limited investigations in children that have tested cerebral oxygenation in children with SDB have found that children appear to be able to sustain cerebral oxygenation. Despite this, it is obvious that paediatric SDB has major negative impacts on the brain in areas such as autonomic regulation, respiration, behaviour, and neurocognition, all of which have been recognised as negative consequences in children with SDB. These alterations in brain shape and function are concerning because they occur during youth, when the brain is still developing. It's still unclear whether they're permanent or reversible if the underlying SDB is treated. Furthermore, it is unknown if this repair is affected by the infant's age or how long the youngster has been alive.

Overnight polysomnography is the gold standard for diagnosing paediatric respiratory problems while sleeping. This phrase refers to the simultaneous and continuous recording of functional parameters sufficient for characterising cardiorespiratory events in relation to various sleep phases throughout the night. Two or more electroencephalogram (EEG) channels, two or more electromyographic channels, chest and abdominal motions, oronasal flow, blood oxygen saturation, and CO_2 measurement are typically recorded during the test. Because there is not always a correlation between the severity of the polysomnographic instrumental data (in terms of number of events and levels of O_2 desaturation) and the gravity of symptoms, the polysomnographic result must always be contextualised with the symptoms and signs and referred to the general clinical picture [1-5].

References

1. Halbower, Ann C., and E. Mark Mahone. "Neuropsychological morbidity linked to childhood sleep-disordered breathing." *Sleep Med Rev* 10 (2006): 97-107.
2. Przybelski, Anna Gabriel, Alissa M. Irwin, and Meredith E. Rumble, et al. "Identifying obstructive sleep apnea in geriatric outpatients with neuropsychological testing." *Alzheimers Dement* 17 (2021): e056669.
3. Macchitella, Luigi, Daniele Luigi Romano, Chiara Valeria Marinelli, and Domenico Maurizio Toraldo, et al. "Neuropsychological and socio–cognitive deficits in patients with obstructive sleep apnea." *J Clin Exp Neuropsychol* 43 (2021): 514-533.
4. Latreille, Véronique, Kim C. Willment, Rani A. Sarkis, and Milena Pavlova.

"Neuropsychological correlates of obstructive sleep apnea severity in patients with epilepsy." *Epileptic Disord* 21 (2019): 78-86.

5. Gaeta, Anna Michela, Ivan D. Benítez, Carmen Jorge, and Gerard Torres, et al. "Prevalence of obstructive sleep apnea in Alzheimer's disease patients." *J Neurol* 267 (2020): 1012-1022.

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