The impact of obstructive sleep apnea on cognitive function: A narrative review

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ABSTRACT

Introduction: Obstructive Sleep Apnoea (OSA) is a common sleep disorder marked by recurrent upper airway obstruction during sleep, resulting in intermittent hypoxia and disrupted sleep architecture. Beyond its well-known impact on respiratory health, OSA is increasingly recognized for its substantial effects on cognitive functioning. The purpose of this study is to explore how does the cognitive function affected due to OSA. It specifically focuses on identifying the risk factors contributing to cognitive impairment, the cognitive domains most affected, and the underlying pathophysiological mechanisms linking OSA to cognitive decline. **Materials and Methods:** A narrative review was carried out utilizing databases including PubMed, Google Scholar, and ResearchGate. Search terms included "obstructive sleep apnoea," "cognitive function," "risk factors," and "neurocognition." From an initial pool of 50 articles, 8 studies were selected based on predefined inclusion criteria: original research, publication in English, and direct relevance to cognitive impairment associated with OSA. **Results:** The review highlighted several risk factors associated with cognitive decline in individuals with OSA, including advanced age, obesity, elevated hsCRP levels, and lower educational attainment. Attention and memory were the most frequently affected cognitive domains. The underlying mechanisms contributing to this impairment include intermittent hypoxia, systemic inflammation, oxidative stress, and structural brain changes particularly in the hippocampus and prefrontal cortex. Hence, these factors lead to deficits in executive functioning, attention, and memory. **Conclusion:** OSA plays a significantly role in cognitive decline particularly attention and memory being the most affected. The presence of modifiable risk factors emphasizes the need for early diagnosis and prompt intervention. Gaining insight into these underlying mechanisms can inform clinical strategies aimed at reducing cognitive impairment in OSA patients and enhancing their long-term quality of life.

Keywords: Obstructive sleep apnoea, review, sleep