

7th World Congress on **Addictive Disorders & Addiction Therapy**
&
29th International Conference on **Sleep Disorders and Psychiatry**

July 16-18, 2018 London, UK

The effects of untreated sleep disorders in traumatic brain injury and its impact on executive function**Melissa Mansukhani**

Joe DiMaggio Children's Hospital, USA

Statement of the Problem: Individuals who have sustained traumatic brain injury have a higher risk of suffering from sleep disorders. The most common of the sleep disorders is sleep apnea. Sleep apnea is defined as the cessation of breathing in conjunction with frequent arousals and hypoxemia. Researchers have found that untreated sleep apnea has been linked to cognitive decline and behavioral deficits. However, not much light has been shed on the effect of untreated sleep disorders in traumatic brain injury. The purpose of this analysis is to describe what the impact is on executive function when traumatic brain injury occurs and sleep apnea is not treated along with other more common treatments for this condition.

Methodology & Theoretical Orientation: Review and evaluate published work related to sleep apnea. An ecological framework was utilized to focus on the interaction between the counselors and the staff to understand this relationship and the context in which it occurs.

Findings: There continues to be a need for more research in the long-term effects of untreated sleep apnea in traumatic injury patients. When the brain is injured the normal pathways for executive function are disturbed. Hypotension and hypoxia both contribute to poor cognitive outcomes. Depending on the incident's duration and extent of tissue hypoxia it is linked to poor neuropsychological outcomes post-traumatic brain injury. Many studies have concluded the relationship between sleep apnea and cognitive deficits, including executive function, attention/vigilance, language, memory and psychomotor speed. Authors also believe that untreated childhood obstructive sleep apnea could permanently alter a developing child's cognitive potential. In more severe OSA cases the gold standard is still continuous positive airway pressure without oxygen. Another important connection is the relationship between sleep apnea executive dysfunction and post-TBI is comorbid psychopathology. Patient's post-TBI has a risk of developing depression but with sleep apnea the risk is nearly twofold for major depression.

Conclusion & Significance: Patients with post-TBI would benefit from proper sleep evaluation to determine what the right intervention is to effectively treat his/her overall condition. Untreated OSA or SA will result in decline in cognitive as well as executive functions. Gold standard of OSA treatment is CPAP without oxygen. Recommendations are made for proper treatment of post-traumatic brain injury patients.

Recent Publications

1. Langlois J A and Sattin R W (2005) Traumatic brain injury in the United States: Research programs of the centers for disease control prevention (CDC). *J Head Trauma Rehabil* 20(3):187-188.
2. Johnston A J, Steiner L A, Coles J P, Charfield D A, Fryer T D, et al. (2005) Effect of cerebral perfusion pressure augmentation on regional oxygenation and metabolism after head injury. *Crit Care Med* 33:189-195.
3. Rose J C, Neill T A and Hemphill J C 3rd (2006) Continuous monitoring of the microcirculation in neurocritical care: an update on brain tissue oxygenation. *Curr Opin Crit Care* 12:97-102.
4. Naismith S, Winter V, Gotsopoulos H, Hickie I and Cistulli P (2004) Neurobehavioral functioning in obstructive sleep apnea: differential effects of sleep quality, hypoxemia and subjective sleepiness. *J Clin Exp Neuropsychol* 26:43-54.
5. Valencia Flores M, Bliwise D, Guilleminault C, Cilveti R and Clerk A (1996) Cognitive function in patients with sleep apnea after acute nocturnal nasal continuous positive airway pressure (CPAP) treatment: sleepiness and hypoxemia effects. *J Clin Exp Neuropsychol* 18(2):197-210.

JOINT EVENT

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Biography

Melissa Mansukhani has her expertise in pediatric sleep evaluation. Her hard work and dedication to her patients and families have shaped the pediatric sleep center at Joe DiMaggio Children's Hospital. Her 11 years of pediatric clinical sleep experience and 15 years of clinical and research helped shape pathways to improve healthcare and technological training for her staff. She has built this program, after years of experience teaching, evaluating and managing in hospital and research institutions. The Joe DiMaggio Children's Hospital Sleep Center is a patient-family centered organization that diagnosis, evaluates and treats patients with pediatric sleep disorders. She is a member of the American Association of Sleep Technologists (AASST), where she sat on the Standards and Guidelines Committee, authored the pediatric split night protocol and contributed to other protocols.

melissa.mansukhani@gmail.com

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