**Article Manuscript**

**Title:** Using Radiofrequency Identification Automated Technologies for Predictive Analytics of Signaling Factors to Determining In-Patient Post Treatment of Sleep Quality

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**Abstract:** The supply chain has incorporated products by putting them into hair scarfs.

This study introduces the use of mini chips in health and beauty products and can reduce fatigue through enhanced sleep patterns. The mini chip could be placed in the scarf and used as a prototype. RFID technology provides the supply chain with specific information that is used to identify products and make communication easier. (Muhammad, et. al. 2013)

This paper presents a new tool herein referred to as a scarf prototype which is developed to analyse EMG (electromyogram), ECG (electrocardiography), EEG (electroencephalogram), and EOG (electro-oculogram) signals that focuses in the area of sleep disorders. The mini chips used can be used to determine a solution for sleep disruption by using automated analytics. This could lead to improvement in our understanding of sleep disruption and overall sleep physiology. Automated technology allows repeated measurements, evaluation of sleep patterns, and provide suggestions to improve a person’s quality of sleep. This analysis compares the use of polysomnography and the scarf prototype. The analytics provide models and shows correlation between variables, such as EMG, ECG, EEG, and EOG. This study shows that the results from the scarf prototype is just as reliable as the original method, polysomnography.

**Keywords:** *EMG; EEG; ECG; EOG; Polysomnography*

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