Abstract

Background: Obstructive Sleep Apnea (OSA) is a serious sleep disorder. It is associated with a range of neurocognitive and cardiovascular complications, leading to a compromised quality of life. Continuous positive airway pressure (CPAP) is the first choice for most patients with OSA. The effectiveness of the treatment is limited due to the prevalence of non-adherence to the therapy. Current evidence indicates CPAP adherence rate range from 30 to 60%. Non-adherence to CPAP reduces the overall effectiveness of treatment of OSA, leaving the patients at an increased risk for comorbid conditions. No previous projects investigating adherence rate of CPAP therapy in this setting's patient population had been completed.

Purpose: The purpose of this evidence-based quality improvement project was to determine the proportion of patients who were not adherent to the CPAP treatment after one month and three months of usage.

Methods: A retrospective chart review included 100 patients with newly diagnosed OSA and prescribed CPAP therapy within an inclusion period of nine months. Descriptive statistical analysis included frequency tables for categorical variables to measure adherence to CPAP treatment in a sleep medicine clinic. The usage of CPAP was evaluated from the secure digital (SD) card of the CPAP machine at 1 month and 3 months follow-up.

Result: An adherence rate of 79% was found after 1 month of therapy in this population. The percentage of patients’ adherent to CPAP increased after 3 months to 88%. The result of one proportion Z-test showed there was a significant increase in the percentage of adherence (Z=3.93, p < .0001). The result of chi-square and Fisher exact showed there was association between BMI and adherence status (p < .0001). Although gender and race were not statistically
significant, it may be clinically significant to determine if there are approaches that are more successful for the middle-aged, male, African American group in this small sample.

**Conclusion:** Our study includes 100 patients newly diagnosed OSA and using CPAP as treatment. Seventy-nine percent were adherent to the treatment after 1 month and eighty-eight percent were adherent after 3 months of initiation. Measurement for CPAP adherence in this new setting highlighted the most significant opportunities for improvement. The translation of CPAP adherence is essential to improve health outcomes in OSA patients.