Medical Xpress

Stable bedtime helps sleep apnea sufferers adhere to treatment

June 5 2013

(Medical Xpress)—A consistent bedtime routine is likely key to helping people with obstructive sleep apnea adhere to their prescribed treatment, according to Penn State researchers.

Obstructive sleep apnea (OSA) occurs when the upper airway collapses during sleep. It is the most common type of sleep-disordered breathing, and chances of it occurring are greater in obese people. OSA is the second most prevalent sleep disorder among adults.

The first line of treatment for sleep apnea is a noninvasive, in-home treatment called CPAP—continuous positive airway pressure therapy. However, if patients do not use the treatment consistently for the majority of sleep hours each night, it cannot help.

"It has been shown that routine is important for adherence when it comes to medication, and routine is also relevant to CPAP adherence," said Amy M. Sawyer, assistant professor of nursing, who will report her results at SLEEP 2013, the annual meeting of the Associated Professional Sleep Societies, in Baltimore on June 5.

The researchers define CPAP adherence as using the treatment for at least four hours each night. They found that if a patient's bedtime was consistent within 45 minutes, they were significantly more likely to use the CPAP machine for at least four hours each night. A patient whose bedtime was inconsistent—varying by an hour and five minutes or more—was much less likely to adhere to treatment.

The researchers found that adults whose bedtime varied by more than 75 minutes or more per night, were 3.2 times more likely to use CPAP less than four hours per night after one month of treatment. For every 30-minute increase in bedtime variability, or inconsistency, the odds of nonadherence to CPAP treatment were 1.8 times greater.

Sawyer and her colleague Tonya King, professor of public health sciences, Penn State College of Medicine, are the first to study the consistency of bedtime and its correlation to treatment adherence.

The researchers asked 97 volunteers who were about to begin CPAP treatment to keep a sleep diary beginning seven days prior to starting treatment. The volunteers recorded the time they went to bed and the time they woke up each day for seven consecutive days.

Each CPAP machine had a microprocessor built in that sent CPAP-use information every 24 hours to the researchers. The microprocessor recorded the patient as using the CPAP machine when breathing through the CPAP mask was detected for longer than 20 minutes.

While the researchers found that regularity of bedtime before beginning CPAP use did not influence adherence during the first week of treatment, it did affect adherence for the first month.

"Unlike many other treatments, CPAP treatment adds new complexity to a person's daily routines," said Sawyer. She and King think that using CPAP is a learned behavior that needs to become a habit.

Sawyer indicated that next steps include figuring out ways to help patients incorporate CPAP use into their daily routine and also studying other consistencies or lack thereof in bedtime routine—beyond what time a person goes to bed that may influence a person's ability to regularly use CPAP.

A grant from the National Institutes of Health, National Institute of Nursing Research supported this research.