

Comparing Ways to Identify Sleep Apnea in People with Traumatic Brain Injury during Inpatient Rehabilitation

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Organization

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What was the research about?

People who have a traumatic brain injury, or TBI, often have sleep apnea. Sleep apnea causes the upper airway to become blocked during sleep. It can make TBI symptoms worse and make recovery difficult. Screening helps identify who is at risk for sleep apnea. Then, doctors use tests to diagnose sleep apnea.

In this study, the research team compared ways to screen for and diagnose sleep apnea in people receiving hospital rehabilitation for moderate or severe TBI. For screening, the team compared

- The STOP-Bang survey
- The MAPI survey
- The Berlin survey
- A wristband that tracked total sleep time

To diagnose sleep apnea, the research team compared

- A standard sleep test with a trained technician monitoring the patient in a sleep lab, which doctors consider the gold standard, or most reliable, test
- A sleep test using portable equipment, which is easier to do and costs less

The research team wanted to learn if using portable equipment wasn't worse at diagnosing sleep apnea than the standard test.

What were the results?

Screening. To identify people with TBI who were at risk for moderate to severe sleep apnea, the STOP-Bang and MAPI surveys worked about the same. STOP-Bang and MAPI worked better than the Berlin survey or wristband. To identify people with TBI who were at risk for mild sleep apnea, all three surveys worked about the same and better than the wristband.

Diagnosis. Portable equipment wasn't as good as the standard test to diagnose sleep apnea. It was less likely to detect mild sleep apnea, and it was less accurate in diagnosing sleep apnea severity for people with moderate or severe sleep apnea.

Who was in the study?

The comparison of diagnostic tests included 214 people receiving inpatient treatment for TBI at one of six rehabilitation centers across the country. The screening study included 248 people at these centers. Of these patients, 74 percent were White, 20 percent were Black, 13 percent were Hispanic, 3 percent were Asian, and 2 percent were another race or ethnicity. The average age was 44, and 82 percent were men; 61 percent had severe TBI.

What did the research team do?

The research team gave people both tests to diagnose sleep apnea on the same night. People also wore the screening wristband. Within three days, people with TBI, family members, and doctors filled out the STOP-Bang, MAPI, and Berlin surveys. Each survey asked about slightly different risk factors for sleep apnea.

The research team compared the diagnostic tests. They also looked at how well the surveys and wristband worked to screen for sleep apnea.

A person with TBI, a caregiver, nurses, doctors, and therapists helped to plan the study.

What were the limits of the study?

The study didn't include people with very mild or very severe TBI who were unable to undergo testing. Results may differ for these people.

Future research could continue to explore ways to diagnose mild sleep apnea in people with TBI.

How can people use the results?

Hospitals can use the results when considering ways to screen for and diagnose sleep apnea in people with TBI.

To learn more about this project, visit www.pcori.org/Richardson382.