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Quick Review of Model System Research

Working Memory Capacity Links Cognitive Reserve With Long-Term Memory in Moderate to Severe Traumatic Brain Injury (TBI): A Translational Approach[1]

What is the study about?

Researchers examined working memory capacity as an influential variable in the relationship between cognitive reserve and long-term memory. Cognitive reserve can be estimated with measures of intellect. A greater cognitive reserve may allow some people to better cope with cognitive impairment that results from trauma or disease. For example, people with TBI and a high cognitive reserve may have better long-term memory outcomes.

Who participated in the study?

The study group included 50 people (37 men, 13 women) with moderate to severe traumatic brain injury (TBI). These people were fluent in English, had no prior history of brain disease, and were at least 1 year post-injury. Researchers used the Glasgow Coma Scale to measure the severity of TBI in 16 people. Among the remaining 34 people, researchers measured the severity of TBI by CT scans or by talking to family members.

How was the study conducted?

Participants completed a series of tests that measured three constructs: cognitive reserve, long-term memory, and working memory capacity. Through statistical analysis, researchers measured the relationships between these constructs.

What did the study find?

Researchers found that working memory capacity plays a part in and helps to explain the relationship between cognitive reserve and long-term memory. Results support the notion that cognitive reserve may be a function of working memory capacity and differences in mental processing. Thus, memory rehab methods may be a useful treatment option for TBI. Rehab methods that target working memory capacity may improve long-term memory, however, additional research is necessary.

The contents of this quick review were developed under a grant (number H133A110004) from the U.S. Department of Education, National Institute on Disability and Rehabilitation Research. However, these contents do not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the Federal Government.

[1] Sandry, J., DeLuca, J., & Chiaravalloti, N. (2015). Working memory capacity links cognitive reserve with long-term memory in moderate to severe TBI: a translational approach. Journal of Neurology, 262(1), 59-64.