

Evidence points to potential roles for cognitive rehabilitation therapy in treating traumatic brain injury

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There is some evidence about the potential value of cognitive rehabilitation therapy (CRT) for treating traumatic brain injury (TBI), but overall it is not sufficient to develop definitive guidelines on how to apply these therapies and to determine which type of CRT will work best for a particular patient, says a new report from the Institute of Medicine.

Research has yielded promising data on the effectiveness of some forms of CRT for helping patients with TBI, but the majority of the evidence is limited due to methodological shortcomings in the studies and challenges in studying the use of CRT in this patient population, said the committee that wrote the report. Obtaining the necessary evidence requires improvements to the way those data are collected and standardization of the terms used to describe these personalized therapies and their outcomes.

Given that methodological shortcomings in the evidence do not rule out potential meaningful benefits for patients, the committee supported the ongoing use of CRT for people suffering from TBI while improvements are made in the standardization, design, and conduct of studies.

CRT is an umbrella term for a range of systematic, goal-oriented approaches to overcoming or compensating for cognitive impairments such as those caused by TBI. There are several forms of the therapy that vary by technique as well as the symptoms they target. Roughly 10

million people worldwide have TBI, which can cause significant physical, emotional, and cognitive disabilities and may have spillover effects on family members and caregivers. TBI has become known as the "signature wound" of the wars in Iraq and Afghanistan. From 2000 to 2010, the number of military service members diagnosed with TBI nearly tripled from just under 11,000 to more than 30,700, the report notes. The majority of injuries are mild and only a small percentage are severe, but recovery is often lengthy and incomplete, especially in more severe cases. The report responds to a request from the U.S. Department of Defense for an objective evaluation of CRT's effectiveness to guide decisions about the use and coverage of these interventions in the military health system.

Researchers face many challenges in studying CRT for TBI, including lack of standardized terms for the different forms of CRT and the difficulty of evaluating the influence of coexisting factors that can affect CRT's impact -- such as post-traumatic stress disorder and other concurrent health conditions and environmental factors such as family support. The evidence base has also been limited by the relatively small number of people enrolled in many of the studies.

Larger sample sizes and standardized data are required to improve future studies of CRT's effectiveness for TBI treatment, the report says. More extensive experimental trials and a commitment to mining clinical practice data in the most rigorous way possible are needed to answer questions about which patients benefit most from which CRT intervention or combination of interventions, the committee concluded. The research community needs to define and standardize the variables that characterize differences among patients, the outcomes that are used to measure the impact of treatment, and the treatments themselves. Although there is little evidence of any risk for harm associated with CRT, the committee suggests additional research to further evaluate potential adverse effects. Research should be designed to explore the

effects of CRT interventions across various levels of TBI severity and durations, the report adds.

"Survivors of [traumatic brain injury](#) may face long-term challenges in rehabilitation and reintegration to everyday life. They need an effective health care infrastructure and evidence-based treatment and rehabilitation policies to care for and cope with their impairments," said committee chair Ira Shoulson, professor of neurology, pharmacology, and human science, and director of the program for regulatory science and medicine, Georgetown University Medical Center, Washington, D.C. "This report lays out a research agenda to surmount the shortcomings and challenges that have thus far limited our understanding of the full effectiveness of various forms of [cognitive rehabilitation](#) therapy in helping patients with different severity and stages of TBI."

Provided by National Academy of Sciences

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