

Computerized rehab aids those suffering from brain injuries

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For the first time, researchers have shown that computerized cognitive rehabilitation (a program to help brain-injured or otherwise cognitively impaired individuals to restore normal functioning) can improve attention and executive functioning in brain injury survivors including traumatic brain injury (TBI) and stroke.

The findings, which appear online in the *Journal of Head Trauma Rehabilitation*, may lead to improved treatment outcomes in patients with [brain injury](#), especially for patients with limited mobility and means and those residing in rural areas.

Persistent cognitive problems are very common following brain injury, especially in executive functioning, attention and learning.

The research team conducted a systematic literature review of computerized treatment for attention and [executive function](#) in adults who suffered a brain injury. Studies published before or during April 2015 were evaluated for quality and methodology as no previous reviews had been completed. They found eight of 11 studies reported significant gains in cognitive function following treatment in TBI patients, with the three remaining studies reporting trends toward significance. Similarly, 10 of 12 mixed population studies observed significant improvements on measures of attention and executive function, with the remaining two studies reporting positive trends. Five studies reported significant improvements subsequent to treatment for stroke patients.

"The results of this systematic review provide encouraging evidence that computerized cognitive rehabilitation can improve attention and executive functioning in brain injury survivors," explained corresponding author Yelena Bogdanova, PhD, assistant professor of psychiatry at Boston University School of Medicine and principal investigator at the VA Boston Healthcare System.

According to the researchers computerized treatment delivery can significantly reduce the wait time and cost of treatment, provide immediate access to treatment in any location, improve the quality of life of patients and reduce the burden of caregivers.

Bogdanova believes further studies are needed. "It is important to evaluate the efficacy of computerized cognitive training programs and to provide specific guidelines for computerized methods of rehabilitation in patients with brain injury, as it can reduce cost and increase accessibility of [treatment](#) to traditionally underserved populations," she added.

Provided by Boston University Medical Center

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