

VISN 5 MIRECC Research Abstract

Cognitive Remediation for Schizophrenia Dwight Dickinson, PhD

Cognitive impairment is now widely considered to be a central feature of schizophrenia. The vast majority of patients with the illness demonstrate clear deficits relative to healthy controls, most often reported in domains of processing speed, attention, working memory, new learning, and executive/reasoning abilities. Two considerations relating to cognitive impairment in schizophrenia are critical for the current application. (1) A growing body of literature connects neuropsychological performance with community functioning, including social competence, independent living, and vocational performance. (2) Optimal pharmacological treatment offers limited cognitive benefit and does little to relieve the profound functional disability experienced by patients. These factors, in combination with promising developments in work with other populations, have fostered an upsurge of interest over the past decade in the possibility of cognitive remediation in schizophrenia. The importance of treating cognitive impairments in these patients was recently highlighted by a new NIMH Request for Proposal (NIMH-02-DM-0006, Measurement and Treatment Development Activities on Cognition in Schizophrenia), and the current Program Announcement (PA-99-134, Exploratory/Development Grants for MH Intervention Research) lists among its 'topics for consideration' the development of "innovative rehabilitative strategies to address neurocognitive deficits which contribute to functional impairment or treatment compliance."

It is by now quite clear that various practice- and instruction-based interventions can, at a minimum, lead to narrow changes in cognitive performance in people with schizophrenia. It is unknown whether and how a broadly-targeted cognitive remediation program might cause broader changes in cognitive performance, and how such change might be associated with improvement in daily functioning for these patients. Although substantial work has addressed cognitive remediation in schizophrenia, various issues have slowed the emergence of consensus about the clinical promise of this intervention. Much of the work to date has been experimental, rather than clinical, with narrow aims. Clinical investigations have been poorly controlled or based on very loosely specified procedures, preventing replication and rigorous analysis of efficacy.

We seek funding (under PA-99-134) to develop a standardized computer-assisted cognitive remediation (CACR) program for schizophrenia patients. As we indicated in the Introduction, CACR addresses 'cognitive control' and certain underlying cognitive processes. The intervention features: 1) strategy training; 2) guided cognitive exercise; 3) use of selected computer learning activities; and 4) a supportive, one-on-one training model. Preliminary work has helped us identify these components and meld them into a workable, promising program. The program needs to be further standardized and piloted before it can be examined in a large clinical trial. Our specific aims are:

1. To extend our preliminary work, particularly focusing on the standardization of the CACR program, including refinement of our training manual and development of training videotapes and competence and adherence standards.
2. To conduct a controlled pilot trial with 50 patients to examine the differential effect of CACR in improving performance on neuropsychological and everyday problem solving measures, which are putative mediators of community functioning. This work will allow accurate estimation of critical intervention parameters (e.g., effect size) in preparation for a large clinical trial.