Cognitive Remediation in Early Episode and Chronic Outpatients with Schizophrenia: Who Has More to Gain?

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BACKGROUND

- Individuals with schizophrenia experience impairments across a number of neurocognitive domains including attention, processing speed, memory, and executive functioning.
- These deficits persist despite pharmacological intervention and serve to maintain functional disability (e.g., independent living, community involvement, or interpersonal behaviour)
- There is strong evidence that cognitive remediation therapy (CRT) produces robust improvements in neurocognition and adaptive functioning in chronic schizophrenia
- However, impairment is present in nearly all neurocognitive domains by the time of the first episode of psychosis (though typically not as severe as they are during the chronic phases)
- The typical age of onset is during a critical developmental window for acquiring adaptive living skills and interpersonal skills. These considerations highlight the importance of early intervention for cognitive functioning in schizophrenia.

PURPOSE: The purpose of this study is to compare the effects of cognitive remediation therapy on neurocognitive change and its generalization to behavior change in early episode versus chronic patients.

METHOD

Participants: 15 community-dwelling early episode patients (<5 years after first episode of psychosis; M=3.4, SD=1.4) and 15 chronic patients with schizophrenia (>5 years after first episode of psychosis; M=16.3, SD=8.6, who were matched on premorbid intelligence, baseline symptom severity, and total time hospitalized.

Procedure: Patients were randomized to cognitive remediation alone or with a skills intervention treatment. Treatment consisted of standard weekly CRT (Scientific Brain Training Pro) for 12 weeks in small group sessions. Participants were assessed before, and after treatment on a variety of neuropsychological, symptomatic, functional, and capacity and functional performance measures.

Measures:
- Clinical symptoms were assessed with the PANSS and BDI (reported as mean item score)
- Neurocognition was measured using the Brief Assessment of Cognition in Schizophrenia (BACS), which measures the following cognitive domains: verbal memory, psychomotor speed, processing speed, executive functioning, working memory, and verbal fluency, reported as a z-score
- Functional Competence was measured using role-play laboratory-based measures, presented as percent of total score

- Interpersonal = Social Skills Performance Assessment (SSPA)
- Adaptive = UCSD Performance-Based Skills Assessment Battery (UPSA)

Real-world Performance was measured with three domains from a third-party rating scale: the interpersonal behaviour, Community activities, and Work skills from the Specific Level of Function Scale (SLOF) reported as percent of total score

Data Analysis:
We examined qualitative changes in neurocognition (% from each group that achieved neuropsychological “normalization”) by comparing the proportion of patients who transitioned from impaired on a neurocognitive composite score at baseline (z-score < -1.0) to within normal limits (z-score > -1.0) and had at least a modest clinical effect (0.5 SD units)

Two-way Repeated Measures ANOVAs were conducted to examine overall treatment outcomes in neurocognition, symptoms, acquired skills, and real world performance, as well as between group differences and interaction effects.

RESULTS

- Treatment of cognitive impairments is feasible in both early episode and chronic schizophrenia,
  - The clinical meaningfulness and generalization to functioning appear to be more substantial when delivered early in course the illness.
  - These findings that suggest generalization to functioning, alongside previous work demonstrating a neuroprotective effect in the early course of illness (Eack et al., 2010), put CRT in a position to enter best practices for early intervention.
  - Chronically ill patients improve in cognition but might require supplemental skill-based treatments to foster generalization to everyday functioning.

CONCLUSIONS

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