Cognitive Remediation in Severe Mental Illness

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Why is Cognitive Functioning Important in Schizophrenia?

• Cognitive impairments are:
  – Common in persons with schizophrenia
  – Associated with increased risk of developing schizophrenia
  – Related to a broad range of functioning (such as self-care and independent living, social relationships, work)
  – Predictive of response to rehabilitation (e.g., social skills training, supported employment)
For these reasons, it is of interest to improve cognitive functioning in schizophrenia.
Cognitive Remediation Programs

- Attempts to improve cognitive functioning in schizophrenia have a lengthy history (40+ years)
- Cognitive remediation approaches, some adapted from treatment of traumatic brain injury, involve a variety of methods, such as computer based or paper and pencil rote practice, strategy coaching, and group-based practice approaches
Take the shortest way.
You are to visit all white circles.
Effectiveness of Cognitive Remediation

• First meta-analysis involving sufficient studies to evaluate effects on psychosocial functioning: (McGurk, Twamley, Sitzer, Wolfe, Mueser(2007))
• 26 studies
• 1151 clients
• Examined effects on cognitive functioning, symptoms, psychosocial functioning
• Explored moderators of outcome, including characteristics of consumers & cognitive remediation programs, and provision of adjunctive psychiatric rehabilitation
Effect Sizes for 26 Studies of Cognitive Remediation on outcomes for Schizophrenia

- Cognitive Performance: 0.41
- Psychosocial Functioning: 0.36
- Symptoms: 0.28
Effects of Cognitive Remediation on Psychosocial Functioning in Studies that Provided Adjunctive Psychiatric Rehabilitation vs. Studies that did not

Effect Size (d) on Psychosocial Functioning

- No Adjunctive Psychiatric Rehabilitation: 0.05
- Adjunctive Psychiatric Rehabilitation: 0.47
Summary of Meta Analysis

• A newer, more rigorous meta analysis has been completed with 40 randomized controlled trials with attention to rating methodological rigor of the studies (Wykes, Huddy, Cellard, McGurk, Czobar, under review).

• How similar are the effects of the updated analysis on the same outcomes (cognition, symptoms, functional outcomes) reported in the 2007 meta analysis?
Comparative Effect Sizes Between McGurk, Twamley et al. (2007) & Wykes, Huddy et al. (under review)
Adjunctive Psychosocial Rehabilitation as a Moderator of Functional Outcomes

McGurk et al.  
Wykes et al.

Adjunctive  
No Adjunctive
Summary

• A more rigorous meta analysis indicated similar effects overall, with somewhat stronger effects on overall cognitive functioning and on functional outcomes, and somewhat weaker effects on symptoms.

• Of particular interest is the replication of adjunctive psychiatric rehabilitation as a moderator of functional outcomes.

• Current results suggest combining cognitive and psychosocial rehabilitation may help those who did not previously benefit from psychosocial practices alone, or serve to create a stronger response overall.
The Thinking Skills for Work Program

- Designed for clients not benefiting from supported employment
- Fully integrated with supported employment
- Combines computer cognitive training with in vivo applications
- Is implemented by cognitive specialist who is member of supported employment team
CHECKPOINT

Pattern ok

sec 8

Objects produced 3
- by mistake 0
- left on belt 3
- by mistake 0

←tempo→

←tempo→ sort out↓
Summary of Elements of TSW

The goals of the TSW program are to: 1) determine clients’ array of cognitive strengths and weaknesses; 2) improve cognitive skills through focused computerized practice; 3) anticipate the need for coping strategies for cognitive areas that may remain of concern; 4) ongoing consultation regarding individually tailoring of specific coping strategies based on the clients’ needs and job demands.
Post Treatment Cognitive Composite Scores

*p<0.01
Thinking Skills for Work Program: 2-3 Year Employment Outcomes

Percent Working per Treatment Group Through Month 26 of Follow-up

Month | Percentage
--- | ---
1 | 5
3 | 10
5 | 15
7 | 20
9 | 25
11 | 30
13 | 35
15 | 40
17 | 45
19 | 35
21 | 30
23 | 25
25 | 20

TAU

Treatment
Overall Conclusions

- Cognitive remediation improves cognitive performance in persons with schizophrenia, a finding supported by two recent meta analyses.
- For cognitive remediation to extend effects to functioning, adjunctive psychiatric rehabilitation is necessary.
- The Thinking Skills for Work program was designed to integrate cognitive remediation with supported employment in order to improve outcomes for consumers with cognitive impairments.
- Elements of the program include assessment, computerized cognitive practice, in vivo application of individualized compensatory strategies, and ongoing cognitive consultation.
- Three randomized controlled trials support the feasibility and effects of this program on cognitive functioning and work outcomes. Additional work is underway to replicate and further understand the effects of integrating cognitive remediation with vocational rehabilitation.