Combining interventions to foster recovery in Severe Mental Illness: A Cognitive Remediation and tDCS pilot trial.

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The majority of people with a severe mental illness (SMI) show serious cognitive impairments that cause deficits in daily functioning. Cognitive enhancement interventions can improve cognitive functioning, which may ultimately result in improved daily functioning.

**Cognitive remediation (CR)**
- Aim to improve cognitive functioning by
  - repeated practice of adaptive exercises
  - support & guidance from trained therapist
  - developing problem-solving strategies
  - transfer of learned skills to daily life

**Transcranial Direct Current Stimulation (tDCS)**
- Aim to improve cognitive functioning by applying a weak current across the scalp to modulate brain function.

**Study aim** This pilot trial will investigate whether CR on its own, or in combination with tDCS, is a relevant and feasible intervention to improve functioning in people with SMI.

**BACKGROUND**

**METHOD**

26 service users dependent on residential facilities

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<thead>
<tr>
<th>T₀</th>
<th>Care as usual 16 weeks</th>
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<tbody>
<tr>
<td>T₁</td>
<td>Group 1 (n=13): CR + sham tDCS 16 weeks, 2x/week</td>
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<tr>
<td>T₂</td>
<td>Group 2 (n=13): CR + active tDCS 16 weeks, 2x/week</td>
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<td>T₃</td>
<td>Care as usual 6 months</td>
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**CR program: CIRCuTS¹**
- Computerized Interactive Remediation of Cognition and Thinking Skills
  - Personalized training based on individual goals
  - Targets meta-cognition
  - Ecologically valid tasks

**tDCS**
- Aim to stimulate fronto-parietal brain networks
  - Target area: left DLPFC
  - Anode: F3
  - Cathode: F4
  - 2 mA
  - 20 min during CR

**Primary outcome**
- Functional outcome: Life Skills Profile (LSP)

**Secondary outcomes**
- Cognitive functioning
- Feasibility
- Acceptability
- Clinical functioning

If the results of this pilot trial indicate trends towards improved cognitive and daily functioning, we will extend the trial into a multi-centre randomized controlled trial. This trial contributes to the development of new interventions that foster functional recovery of service users with severe mental illness living in residential facilities.

¹Reeder et al., 2016

This trial has received ethical approval and is registered in the Dutch Trial Registry (NL954).

This work is funded by Stichting tot Steun VCGZ

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