Competitive Memory training (COMET) bij hallucinaties

15 jaar Gz-psycholoog: jong en onstuimig
20 september 2013, Tropenmuseum, Amsterdam
Mark van der Gaag
The prevalence of voice hearing in the population

<table>
<thead>
<tr>
<th>Study</th>
<th>Number</th>
<th>Age</th>
<th>% Hallucinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhossche et al, 2002</td>
<td>914</td>
<td>11-18</td>
<td>6% adolescents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3% young adults</td>
</tr>
<tr>
<td>Bartels-Velthuis et al., 2010</td>
<td>3870</td>
<td>7-8</td>
<td>9%</td>
</tr>
<tr>
<td>McGee et al., 2000</td>
<td>788</td>
<td>11</td>
<td>8%</td>
</tr>
<tr>
<td>Wigman et al, 2011</td>
<td>5422</td>
<td>12-16</td>
<td>30% ever</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6.4 % often/always</td>
</tr>
<tr>
<td>Poulton et al., 2000</td>
<td>761</td>
<td>11</td>
<td>13%</td>
</tr>
</tbody>
</table>
## Auditory hallucinations in other diagnoses

<table>
<thead>
<tr>
<th>%</th>
<th>N</th>
<th>Diagnosis</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>40</td>
<td>Posttraumatic Stress Disorder</td>
<td>Anketel et al, 2010</td>
</tr>
<tr>
<td>40</td>
<td>53</td>
<td>PTSD war combat veterans</td>
<td>David et al, 1999</td>
</tr>
<tr>
<td>37</td>
<td>372</td>
<td>Bipolar 1 disorder</td>
<td>Keck et al, 2003</td>
</tr>
<tr>
<td>30</td>
<td>171</td>
<td>Borderline Personality Disorder</td>
<td>Yee et al, 2005</td>
</tr>
<tr>
<td>23.1</td>
<td>101</td>
<td>Eight symptoms of depression</td>
<td>Ohayon &amp; Schatzberg, 2002</td>
</tr>
<tr>
<td>9.5</td>
<td>879</td>
<td>One symptom of depression</td>
<td>Ohayon &amp; Schatzberg, 2002</td>
</tr>
<tr>
<td>13.7</td>
<td>329</td>
<td>Dementia</td>
<td>Lyketsos et al, 2000</td>
</tr>
<tr>
<td>9.7</td>
<td>216</td>
<td>Parkinson disease</td>
<td>Fenelon et al, 2000</td>
</tr>
</tbody>
</table>
Normal voices and mad voices

• **Identical phenomenology**

• **Appraisal processes**

Voices are not a psychotic symptom

- **Voices are not associated to dopamine dysregulation**

- **Voices and delusional explanations are psychotic**
New developments

• **Relational CBT**

• **Graded Exposure**

• **Avatar therapist**

• **Internet-based**

• **Acceptance and Commitment Therapy**
Learning of meaning

Voice content makes predictions about future events
‘Obey or you will be punished!’

- Challenge power of voices
- Behavioural experiments

Voice content elicits past memories and opinions about the self
‘You have always been a looser, remember being bullied at school?’

- Undo voices of memory-induced mood swings
Initial evaluation of the effects of competitive memory training (COMET) on depression in schizophrenia-spectrum patients with persistent auditory verbal hallucinations: A randomized controlled trial

Mark van der Gaag¹,²*, Bas van Oosterhout³, Kirstin Daalman⁴, Iris E Sommer⁴ and Kees Korrelboom⁵
Study design

• Randomised controlled trial: COMET + TAU versus TAU
• Pre-post assessments
• Primary outcome: Depression and Auditory Hallucinations
  • Beck Depression Inventory (Beck, 1996)
  • Auditory Hallucinations Rating Scale (Haddock, 1999)
• Mediators
  • Voices Acceptance and Activity Schedule (Shawyer, 2007)
  • Self-esteem rating scale (Lecomte, 2006)
  • Power-scale of Beliefs about Voices Questionnaire (Chadwick, 2000)
  • Social Comparison Rating Scale (Allen & Gilbert, 1995)
COMET Protocol
9 sessions including pre-test and post-test session

Specify content of auditory hallucinations
  • E.g.: You are a fool, a looser

Specify personal meaning of hallucinations
  • E.g.: I am weak and incompetent

Specify credible incompatible personal meaning
  • E.g.: I am strong and competent at moments

Strengthen incompatible meaning by
  • Notify moments of strength
  • Imagine these incompatible scenes, together with
  • Incompatible posture and facial expression
Themes and counter themes

Vulnerable versus resilient
Powerless versus in control
Unlovable versus lovable
Rejected versus accepted
Incompetent versus competent
Worthless versus valuable
Bad versus good enough
Weak versus strong
Re-activate positive memory representations

To re-live activate

- Sensory memory (especially the visual-auditory memory)
- Postural, mimicked and emotional memory
- Symbolic verbal memory

Homework assignment is to practice five times a day to relive the positive memory (facilitate memory access and strengthen the incompatible memory representations)
Sample characteristics

Table 1. Characteristics of the study sample at baseline

<table>
<thead>
<tr>
<th></th>
<th>COMET</th>
<th>TAU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td>21 male/18 female</td>
<td>19 male/19 female</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorganized</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Paranoid</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Residual</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Schizo-affective</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Psychosis not otherwise specified</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td><strong>Level of education (1–7)</strong></td>
<td>4.4 (1.6)</td>
<td>4.4 (1.4)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>40.4 (12.0)</td>
<td>40.6 (12.1)</td>
</tr>
<tr>
<td><strong>SCRS</strong></td>
<td>47.7 (19.8)</td>
<td>51.8 (26.5)</td>
</tr>
<tr>
<td><strong>BaVQ-R power</strong></td>
<td>11.8 (4.0)</td>
<td>10.2 (4.3)</td>
</tr>
<tr>
<td><strong>VAAS A</strong></td>
<td>35.5 (8.6)</td>
<td>36.0 (7.5)</td>
</tr>
<tr>
<td><strong>SERS-positive</strong></td>
<td>40.7 (13.8)</td>
<td>43.1 (13.3)</td>
</tr>
<tr>
<td><strong>SERS-negative</strong></td>
<td>39.6 (14.1)</td>
<td>38.8 (14.8)</td>
</tr>
<tr>
<td><strong>BDI-II</strong></td>
<td>23.9 (13.1)</td>
<td>23.1 (12.0)</td>
</tr>
<tr>
<td><strong>AHRS</strong></td>
<td>29.9 (5.0)</td>
<td>29.6 (5.4)</td>
</tr>
</tbody>
</table>

SCRS, Social Comparison Rating Scale; BaVQ-R power, Beliefs about Voices Questionnaire – Revised power subscale; VAAS A, Voices Acceptance and Action Scale general voices part; SERS positive, Self-Esteem Rating Scale positive Self-Esteem; SERS negative, Self-Esteem Rating Scale negative Self-Esteem; BDI-II, Beck Depression Inventory-II; AHRS, Auditory Hallucination Rating Scale.
Hospital staff recruited patients with daily auditory hallucinations of severe intensity and asked them for informed consent.

148 patients were screened for eligibility:
- 41 did not fulfill inclusion criteria
- 30 declined intervention study

77 were randomised:
- 39 COMET + TAU
  - 39 received allocated treatment
    - 11 withdrew consent
    - 0 lost to follow-up
    - 39 analysed
- 38 TAU
  - 0 withdrew consent
  - 0 lost to follow-up
  - 38 analysed

Figure 2. Flow of participants in the study.
Dropouts

• COMET: 11 dropouts
• TAU: 0 dropouts

• Dropouts do not differ from completers on sex, age, level of education and any of the measures

• Completers in COMET do not differ from completers in TAU
## Results

### Table 2. Results of linear mixed modelling of the primary and secondary outcome measures

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COMET</td>
<td>TAU</td>
</tr>
<tr>
<td></td>
<td>mean (SE)</td>
<td>mean (SE)</td>
</tr>
<tr>
<td>BDI-II</td>
<td>23.9 (2.0)</td>
<td>23.1 (2.0)</td>
</tr>
<tr>
<td>PSYRATS-AHRS</td>
<td>29.9 (0.8)</td>
<td>29.6 (0.8)</td>
</tr>
<tr>
<td>PSYRATS-AHRS</td>
<td>10.3 (0.4)</td>
<td>10.1 (0.4)</td>
</tr>
<tr>
<td>cognitive</td>
<td>interpretation</td>
<td></td>
</tr>
</tbody>
</table>

BDI-II, Beck Depression Inventory-II; PSYRATS-AHRS, Psychosis Rating Scale – Auditory Hallucination Rating Scale; PSYRATS-AHRS appraisal, cognitive interpretation of voices subscale of the Psychosis rating Scale-Auditory Hallucinations Rating Scale.

In total, 36% (10 out of 28) of COMET patients and 11% (4 out of 38) of the TAU group attained recovery from depression (a reduction of at least 7 points and a score of 0–13 on the BDI).
Direct and indirect effects

Figure 1. Path models of the total effect of treatment on symptoms (upper figure) and multiple-mediated effects of treatment on symptoms (lower figure).

Note. C, total effect of treatment $X$ on symptoms $Y$; $C'$, direct effect of treatment $X$ on symptoms $Y$ with mediators partialled out; $a_1$ and $a_2$, effect of treatment $X$ on mediators $M_1$ and $M_2$; $b_1$ and $b_2$, effect of mediators $M_1$ and $M_2$ on symptoms, irrespective of treatment condition.
## Results mediator analysis

### Table 3. Results of multiple mediation analysis on depression with bootstrap indirect results

<table>
<thead>
<tr>
<th></th>
<th>Direct and total effects p-values</th>
<th>Bootstrap indirect effects 95% confidence interval $a \times b$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$a$</td>
<td>$b$</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SERS pos-neg</td>
<td>0.001</td>
<td>0.050</td>
</tr>
<tr>
<td>VAAS A</td>
<td>0.039</td>
<td>0.014</td>
</tr>
<tr>
<td>SCRS</td>
<td>0.005</td>
<td>0.172</td>
</tr>
<tr>
<td>BaVQ power</td>
<td>0.001</td>
<td>0.084</td>
</tr>
</tbody>
</table>

A, effect of treatment on the mediator; b, effect of the mediator on depression irrespective treatment condition; $c'$, effect of treatment on depression without the indirect effect of the mediator; $a \times b$, bootstrap results for indirect effects; lower and upper limits of confidence intervals for test of mediation with 5,000 bootstrap re-samples and bias correction; SERS pos-neg, Self-Esteem Rating Scale positive minus negative subscale; SCRS, Social Comparison Ranking Scale; BaVQ power, power subscale of the Beliefs about Voices Questionnaire; VAAS A, Acceptance and Action subscale of the Voices Acceptance and Activity Scale; *Significant at 0.05.
Conclusions

• COMET improves depression and appraisal of auditory hallucinations

• COMET changes are fully mediated by
  • Self-esteem
  • Acceptance of voices
And partially mediated by
  • Attributed power to the voices
  • Social ranking of voices and self
Conclusions (cont.)

- Very short intervention strengthening positive self-imagery neural networks is related to more positive and less negative self-esteem.

- Activating the positive emotive network also changed cognitive appraisals without cognitively challenging these appraisals.

- Intervention is too limited in sessions (4 preparatory and 3 therapy sessions) to be effective on psychopathology. In future more booster sessions and integrating of technique in CBT for voices.
Conclusions (cont.)

• All dropouts in COMET condition
  • Too much strain on homework assignments
  • Limitations in imagery and reliving of positive personal memories
  • Lack of positive personal memories
  • Too shy to stand up and practice imagery in sessions
Conclusions (cont.)

• This study confirms the efficacy of COMET as a transdiagnostic training technique

• Efficacy now demonstrated in:
  • Self-esteem in personality disorders
  • Self-esteem in depression
  • Eating disorders
  • OCD
  • Depression in the elderly
  • Auditory hallucinations
Thank you for listening!

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