Self-help therapy for insomnia: a meta-analysis

Annemieke van Straten, PhD

E-mental health summit
15 oktober 2009
Sleep disorders

• Hypersomnia
  – Sleeping too much

• Para-insomnia
  – E.g. nightmares, sleep-walking

• Insomnia
  – Secondary
  – Primary
Insomnia

- **Symptoms**
  - Time awake and asleep at night
  - Number of nights a week
  - Duration of the sleep problem
  - Day-time consequences

- **DSM**
  - Awake for at least 30 minutes
  - For at least 3 nights a week
  - For one month (3 in next DSM)
  - Disability in daily life
Prevalence and consequences

• 30% of population suffer sleep initiation or maintenance problem

• 10% has daytime consequences
  – Fatigue
  – Mood swings
  – Difficulties in concentration

• Long-term consequences
  – Poor quality of life
  – Reduced work performance
  – (traffic) accidents
High co-morbidity

- Medical diseases
- Mood disorders
  - 90% of all with MDD suffer from insomnia
  - people with insomnia 10 times more likely to develop MDD
- Anxiety disorders
  - People with insomnia 15 times more likely to develop an anxiety disorder
- Substance abuse
Co-morbidity

• Cause?
• Consequence?
• Third factor explaining both?

• More and more evidence
  – Insomnia precede mental disorders

• Treating insomnia:
  – Decrease burden associated with insomnia
  – might prevent mental disorders!
Treatment

- Cognitive-behavioral therapy
  - Information
    - General
    - Sleep hygiene
  - Relaxation
  - Behavioral techniques
    - Sleep restriction
    - Stimulus control
  - Cognitive techniques
    - Worry, fear, dysfunctional thoughts about sleep

- Treatment unavailable → (web-based) self-help
Meta-analyses

- Search in several databases + references
- RCTs: self-help interventions in insomnia
- 10 studies including 1000 patients
  - 6 studies (9 comparisons): SH vs WL
  - 1 study: SH vs face-to-face treatment
  - 3 studies: SH vs WL + SH vs face-to-face treatment
## Self-help versus waiting list

<table>
<thead>
<tr>
<th>Study name</th>
<th>Outcome</th>
<th>Std diff in means</th>
<th>Lower limit</th>
<th>Upper limit</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alperson1</td>
<td>Combined</td>
<td>0.883</td>
<td>-0.227</td>
<td>1.992</td>
<td>0.119</td>
</tr>
<tr>
<td>Alperson2</td>
<td>Combined</td>
<td>0.371</td>
<td>-0.653</td>
<td>1.394</td>
<td>0.478</td>
</tr>
<tr>
<td>Currie</td>
<td>Combined</td>
<td>0.555</td>
<td>-0.078</td>
<td>1.189</td>
<td>0.086</td>
</tr>
<tr>
<td>Mimeault1</td>
<td>Combined</td>
<td>0.361</td>
<td>-0.302</td>
<td>1.023</td>
<td>0.286</td>
</tr>
<tr>
<td>Mimeault2</td>
<td>Combined</td>
<td>0.790</td>
<td>0.140</td>
<td>1.440</td>
<td>0.017</td>
</tr>
<tr>
<td>Morawetz</td>
<td>Combined</td>
<td>1.041</td>
<td>0.500</td>
<td>1.582</td>
<td>0.000</td>
</tr>
<tr>
<td>Morin</td>
<td>Combined</td>
<td>0.125</td>
<td>-0.158</td>
<td>0.409</td>
<td>0.386</td>
</tr>
<tr>
<td>Riedel1</td>
<td>Combined</td>
<td>0.389</td>
<td>-0.182</td>
<td>0.959</td>
<td>0.182</td>
</tr>
<tr>
<td>Riedel2</td>
<td>Combined</td>
<td>0.157</td>
<td>-0.400</td>
<td>0.713</td>
<td>0.581</td>
</tr>
<tr>
<td>Rybarczyk</td>
<td>Combined</td>
<td>0.714</td>
<td>-0.063</td>
<td>1.511</td>
<td>0.079</td>
</tr>
<tr>
<td>van Straten</td>
<td>Combined</td>
<td>-0.013</td>
<td>-0.270</td>
<td>0.244</td>
<td>0.921</td>
</tr>
<tr>
<td>Ström</td>
<td>Combined</td>
<td>0.135</td>
<td>-0.317</td>
<td>0.586</td>
<td>0.560</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.362</td>
<td>0.155</td>
<td>0.570</td>
<td>0.001</td>
</tr>
</tbody>
</table>

### Effects on sleep estimates (combined)
### Self-help versus waiting list

<table>
<thead>
<tr>
<th></th>
<th>Pooled effect</th>
<th>Heterogeneity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep efficiency</td>
<td>0.42*</td>
<td>65%</td>
</tr>
<tr>
<td>Sleep onset latency</td>
<td>0.29*</td>
<td>0%</td>
</tr>
<tr>
<td>Total Sleep time</td>
<td>0.02</td>
<td>19%</td>
</tr>
<tr>
<td>Wake after sleep onset</td>
<td>0.44*</td>
<td>64%</td>
</tr>
<tr>
<td>Sleep Quality</td>
<td>0.33*</td>
<td>52%</td>
</tr>
<tr>
<td>Combined</td>
<td>0.36*</td>
<td>45%</td>
</tr>
</tbody>
</table>
And...

- Pooled effect size for depression 0.51*
- Pooled effect size for anxiety 0.28*
- Subgroup analyses: no significant effects
  - With or without support
  - Book or other format
  - With or without co-morbidity with other mental health problems
- Long term effects: stable over time
Self-help versus face-to-face treatment

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</tr>
</thead>
<tbody>
<tr>
<td>Bastien1</td>
<td>Combined</td>
<td>-0.250</td>
<td>-0.991</td>
<td>0.491</td>
<td>0.508</td>
</tr>
<tr>
<td>Bastien2</td>
<td>Combined</td>
<td>-0.165</td>
<td>-0.885</td>
<td>0.554</td>
<td>0.653</td>
</tr>
<tr>
<td>Currie</td>
<td>Combined</td>
<td>-0.180</td>
<td>-0.803</td>
<td>0.444</td>
<td>0.573</td>
</tr>
<tr>
<td>Morawetz</td>
<td>Blank</td>
<td>0.210</td>
<td>-0.486</td>
<td>0.906</td>
<td>0.554</td>
</tr>
<tr>
<td>Rybarczyk</td>
<td>Combined</td>
<td>-0.378</td>
<td>-1.162</td>
<td>0.407</td>
<td>0.345</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.141</td>
<td>-0.457</td>
<td>0.175</td>
<td>0.381</td>
</tr>
</tbody>
</table>

Meta Analysis

Effects on sleep estimates (combined)
### Self-help vs face-to-face treatment

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<th>Heterogeneity</th>
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</thead>
<tbody>
<tr>
<td><strong>Sleep efficiency</strong></td>
<td>-0.31</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Sleep Onset Latency</strong></td>
<td>-0.37*</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total Sleep Time</strong></td>
<td>-0.03</td>
<td>51%</td>
</tr>
<tr>
<td><strong>Wake After Sleep Onset</strong></td>
<td>0.02</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Sleep Quality</strong></td>
<td>-0.50</td>
<td>0%</td>
</tr>
<tr>
<td><strong>combined</strong></td>
<td>-0.14</td>
<td>0%</td>
</tr>
</tbody>
</table>
Conclusions self-help for insomnia

• Sleep improves
• The effects are moderate
• Anxiety and depression improve
• Effects remain stable over time

• Self-help fits well as a first step in a stepped care model for insomnia

a.van.straten@psy.vu.nl