Clinical efficacy and economic evaluation of internet cognitive behavioural therapy for major depressive disorder

A systematic review and meta-analysis

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Background

Major depressive disorder affects 300 million globally
Treatment gap estimated at 50%

Large economic costs

Increased demand for mental health services

Technological advancements
- Internet
- Triple A: Availability, Accessibility, Affordability

(WHO, 2017)
Use of the Internet in Mental Health: ICBT

Facilitates access to evidence-based psychological treatment

Cognitive Behavioural Therapy (CBT)
- Face-to-face
- Therapist assists individual to identify, challenge, and replace negative thoughts

Internet Cognitive Behavioural Therapy (ICBT)
- Access to structured, self-help materials
- Self-directed vs. guided ICBT, assistance delivered remotely by therapist

(Andersson, 2009)
Systematic Review and Meta-Analysis

- ICBT for depression shown to be clinically efficacious (e.g. Richards & Richardson, 2012)
- Economic evaluation as a means to evaluate clinical efficacy → Current economic reviews are scoping (e.g. Hedman et al., 2012)

*Aims*
- Determine extent of depressive symptom improvement following ICBT relative to comparator treatments
- Examine contribution of moderator variables
- Determine costs associated with symptom improvement (economic evaluation)
Methods

Search Terms
Variations of major depression AND internet AND cognitive behavioural therapy
Limiters: Year 2006-2016

Inclusion Criteria
1. Adult sample with diagnosis of depression (e.g., meeting DSM/ ICD criteria)
2. Compared ICBT to usual care, waitlist, or face-to-face CBT
3. Reported on at least one of the following: depressive symptoms, full economic evaluation

Exclusion Criteria
e.g. prevention studies
Results: Clinical Efficacy

Systematic Review
3,021 ICBT participants, mean age = 42.73 years

Description of ICBT programmes
• Guided ICBT (n = 24) unguided ICBT (n = 6)
• Guidance frequently provided by weekly e-mail and 5-15 mins telephone call (n = 8)

Meta-Analysis
ICBT superior treatment, $g = 0.44, 95\%$ CI[0.31, 0.57]
Results: Moderator Analysis

<table>
<thead>
<tr>
<th>Moderator</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>X</td>
</tr>
<tr>
<td>Baseline depression severity</td>
<td>X</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>X</td>
</tr>
<tr>
<td>Depression status (current, remission)</td>
<td>X</td>
</tr>
<tr>
<td>Guidance (guided, unguided)</td>
<td>X</td>
</tr>
<tr>
<td>Comparator Group</td>
<td>✓</td>
</tr>
</tbody>
</table>

ICBT was just as efficacious as face-to-face CBT, $g = 0.06$, 95% CI[-0.67, 0.79] (2 studies)

Therapist guided ICBT moderately varied, $I^2$ index of heterogeneity = 67.60%
Results: Economic Evaluation

5 studies
774 ICBT participants, mean age = 39.10 years

Guided ICBT = higher costs, improved outcomes (additional cases of recovery or gain in quality-adjusted life years)

→ strong likelihood of being cost-effective considering country-specific WTP thresholds (UK, Australian, Dutch contexts)
Conclusions

Guided ICBT is a promising, cost-effective treatment for depression

Limitations

Few economic evaluations
Publication bias (adjusted $g = 0.32$)

Funnel Plot. After imputation of hypothetical missing studies, the adjusted, weighted mean effect size was $g = 0.32$
Implications for Practice

Demand > provision
⇒ Integration of accessible, cost-effective solutions into healthcare settings is essential

*Stepped Care Approach*
Effective, yet least resource-intensive treatment provided first, i.e. ICBT

Ensure the availability of accessible and affordable treatment
Thank you. Any questions?
Additional

Cost components

• Individual costs
e.g. travel to/from GP, over-the-counter medication

• Healthcare costs
e.g. primary or secondary care, hospital inpatient stays, hospital outpatient visits, direct intervention costs (therapist cost, ICBT programme licence fee)

• Societal costs
e.g. lost work days or work productivity