A systematic review of internet-based self-help therapeutic interventions to improve distress and disease-control among adults with chronic health conditions

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CRD summary
The authors concluded evidence demonstrated that Internet-based self-help interventions had guarded promise in the improvement of distress and disease-control among adult patients with chronic illnesses. The authors' conclusions reflect the data presented but limitations in the analysis mean their reliability is uncertain.

Authors' objectives
To assess the efficacy of Internet self-help interventions for distress and disease control among adult patients with chronic illnesses

Searching
EMBASE, CINAHL, MEDLINE and PsycINFO were searched for published or in-press articles in English in peer reviewed journals to December 2011. Search terms were reported. Reference lists of included studies were also searched.

Study selection
Eligible were studies of self-help Internet-based psychosocial therapeutic interventions for adults (18 years and older) with a chronic physical health condition. Outcomes of interest were distress, quality of life or well-being measured using an appropriate tool. Randomised controlled trials (RCTs), quasi-randomised trials or feasibility RCTs were eligible. Studies that provided information or education only without a therapeutic component were excluded as were studies of health conditions in the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders), including eating disorders and insomnia, were excluded.

Studies of chronic health conditions included chronic pain, diabetes, irritable bowel syndrome, tinnitus, fatigue, epilepsy and breast cancer. Most studies had a high female bias. Most studies were conducted in the USA, with others conducted in Sweden, Netherlands and Australia. Half of studies were cognitive behavioural therapy (CBT) interventions while the remaining studies used CBT as part of a multi-component intervention; one studied used Emotional Freedom Techniques. Most studies used the Internet on personal computers as a treatment modality, others used a CD-ROM or personal digital assistants. Interventions were largely self-help, others included a moderated or guided component. Intervention duration ranged from four weeks to six months and from four to eight modules. Comparison groups varied, most were treatment as usual, wait-listing or no treatment, some studies used a placebo condition or active treatments.

Titles and abstracts were selected by one reviewer, with a second reviewer independently examining studies from one randomly selected database. Two reviewers independently screened full papers for inclusion with disagreements resolved by discussion.

Assessment of study quality
Study quality was first assessed by two independent reviewers using methods by Chambless and Hollon. The criteria used were: appropriate control condition; adequate sample size; sufficient power to detect moderate differences; specified inclusion criteria; and reliable and validated outcome measures. The quality of reporting was assessed using some criteria from the Cochrane Collaboration Risk of Bias tool including: allocation and concealment, blinding of assessors and management of incomplete outcome data.

Data extraction
One reviewer extracted data on the effects of self-help on psychosocial and disease outcomes. Data were checked by a second reviewer.

Methods of synthesis
Studies were combined in a narrative synthesis grouped by health condition.

**Results of the review**

Twenty-four studies were included in the review. Sample size ranged from 43 to 958 participants. Only four studies met all the combined quality assessment criteria specified by Chambless and Hollon and the Cochrane Collaboration. Most studies reported sample sizes larger than 25 participants per group. All studies clearly reported inclusion criteria and used reliable and well-validated measures. Five studies reported adequate allocation concealment. Most studies reported adequate blinding of assessors. Strategies to manage incomplete data were reported in 11 studies.

**Chronic pain** (nine studies): Three of eight studies using CBT reported statistically significant reductions in depression, anxiety, stress or distress compared with control, and two studies reported statistically significant reductions in catastrophising. Six out of nine studies reported statistically significant improvements in participants’ pain levels compared with control groups. One study found no difference between Internet CBT with or without telephone support on number of headaches.

**Type 2 diabetes** (five studies): There were no statistically significant improvements in distress outcomes between treatment and control groups. Three studies reported improvements in physical health measures.

**Irritable bowel syndrome** (four studies): Statistically significant improvements were reported for anxiety (two studies), quality of life (three studies), and depression (one study). Significant reductions were also reported in irritable bowel symptom severity (two studies), and abdominal pain (one study).

**Tinnitus** (two studies): One study reported treatment was superior to control groups in reducing tinnitus-distress, depression and annoyance. The follow-up study reported that benefits were maintained at 12 months follow-up. One study reported interventions were superior to control for tinnitus-specific physical outcomes, while one study found they were equivalent to the control group.

There were no significant differences between intervention and control groups for psychosocial outcomes for epilepsy (one study), fatigue (one study), or cancer (one study), however each of these reported some improvements in disease control outcomes.

Other results were reported.

**Authors’ conclusions**

The evidence demonstrated that Internet-based self-help interventions had guarded promise in the improvement of distress and disease-control among adult patients with chronic illnesses.

**CRD commentary**

Inclusion criteria were broadly stated and several relevant sources were searched. However, restriction to English language studies meant some data may have been missed. Study quality was assessed using appropriate criteria and the assessment fully reported. Reviewer methods to reduce error and bias appeared appropriate. A narrative synthesis was appropriate given the differences between studies in terms of design, interventions and outcomes. Characteristics of the included studies were presented in tables, although the design of each study was unclear. Results for individual studies were reported without supporting data or levels of statistical significance and ‘vote counting’ how many showed a beneficial effect was conducted, which did not take into account the effect of sample size or study quality.

The authors’ cautious conclusions reflect the data presented but limitations in the analysis mean their reliability is uncertain.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that additional research was needed to increase the evidence base, particularly for diabetes, epilepsy, cancer, fatigue and cardiovascular illnesses. Further research should investigate whether application-based interventions could increase the efficacy and utility of these interventions (e.g. mobile phones).
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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.