E-health self-care interventions for persons with chronic illnesses: review and future directions
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CRD summary
This review concluded that web-based and telephone-based self-management interventions for people with chronic conditions may serve as useful adjuncts to traditional therapies and that further data were required to justify their widespread use. The quality of the studies on which the conclusion was based was not clear, so the appropriateness of the conclusions is unclear.

Authors' objectives
To conduct a review of e-health interventions for people with chronic illnesses.

Searching
MEDLINE, PsycINFO and CINAHL were searched (2002 to 2007). Search terms were provided.

Study selection
Randomised controlled trials (RCTs) of self-management interventions with a substantial e-health component delivered to people with a chronic or recurring condition for an average of one year were eligible for inclusion. To be classified as having a substantial e-component the intervention had to use telephone, videoconferencing or the web (email, website, online discussion group) as the major mode of delivery.

Participants in the included studies had a range of chronic conditions. These included mental ill-health (depression, panic disorder, post-traumatic stress and complicated grief), diabetes, cardiac related (smoking cessation, cardiac rehabilitation and heart transplantation) and various other conditions (pulmonary disorders, cancer and chronic pain). Interventions were mostly web-based or telephone-based and varied widely in content, intensity and duration across and within chronic conditions. They included educational websites, online discussion forums and minimal mediated contact with clinicians by phone or email.

The authors did not state how many reviewers performed the selection of papers for inclusion.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Details of individual studies were extracted and results summarised.

Two reviewers independently extracted data. Disagreements were resolved through consensus.

Methods of synthesis
Studies were grouped by condition and then type of intervention (telephone-based or web-based delivery) and the results were discussed in a narrative. The authors summarised which studies did and did not report statistically significant improvement with the intervention compared to control.

Results of the review
Seventy-one RCTs were included. The authors noted that many of the studies used routine medical care as the comparator, which potentially led to confounding between the amount of contact and the e-intervention and an overestimation of the effectiveness of the e-intervention.

Mental health interventions (11 RCTs): There was an overall positive pattern of results for web-based interventions for
mental health conditions; six out of seven psychoeducational interventions for people with mental health conditions reported statistically significant benefit on all or most outcomes compared to control and one did not. All four telephone-based showed positive benefits on mental health outcomes.

**Diabetes interventions (14 RCTs):** Six of seven web-based interventions showed positive effects on a range of behavioural, psychosocial and biological measures. Two of the seven studies of telephone-based interventions reported statistically significant improvement in the intervention group compared to control and the other five studies did not. The authors noted that the short duration of the interventions, inclusion of participants with disadvantaged and disrupted living conditions and severe illness may have been contributing factors in the lack of benefit.

**Cardiac conditions (12 RCTs):** Seven of the 11 studies that used a telephone-based intervention reported a positive benefit compared to control and four studies did not. Improvements included reduced hospitalisation. In the single web-based study there were fewer cardiovascular events and greater weight loss in the intervention than in the control group.

**Other conditions:** Twenty-eight RCTs assessed interventions in a range of different conditions. Only studies that related to pulmonary conditions, cancer and chronic pain were discussed. Most studies reported positive improvements with the e-interventions.

**Authors’ conclusions**
Web-based and telephone-based interventions that provided options for engagement with healthcare experts and peers may serve as useful adjuncts to traditional therapies; further data were required to justify their widespread use.

**CRD commentary**
There was a clearly stated review question. A number of relevant databases were searched but specific attempts were not made to locate unpublished studies therefore relevant studies may have been missed. Appropriate methods were reported to reduce error and bias in data extraction, but not study selection. Study quality was not assessed and the findings of studies were not considered in the context of their methodological quality, although the authors highlighted limitations of the control groups used in many studies that may have led to an overestimation of benefits of the intervention. Due to the diversity of the included studies, even within conditions, a narrative synthesis seemed appropriate. However, due to the large number of included studies it was fairly broad and superficial and in the absence of information about study quality it was not possible to assess the reliability of the included studies.

**Implications of the review for practice and research**
**Practice:** The authors stated e-health interventions that provided one-to-one interaction with health educators, website bulletin boards and monitored chat groups were important in maintained patient engagement.

**Research:** The authors stated that further research was required that recruited adequate samples of people from different ethnic populations, used appropriate comparison groups, evaluated the goodness of fit between the health condition and the technology and assessed cost-effectiveness.

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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.