The multimedia computer for office-based patient education: a systematic review

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CRD summary
This review assessed the randomised evidence for computer-assisted patient education. The authors concluded that more evidence of its impact on clinical outcomes is required. As no synthesis of the clinical outcomes in the included studies was reported, it is difficult to determine the reliability of this conclusion.

Authors' objectives
To evaluate the use of computer-assisted patient education.

Searching
MEDLINE was searched via PubMed to April 2004; the search terms were reported. The Cochrane Database of Systematic Reviews was also searched and the references of identified studies were checked. Only English language reports were eligible for inclusion.

Study selection
Randomised controlled trials (RCTs) that assessed the use of multimedia computer techniques, including graphics and/or audio with or without supporting text, to impart an educational message to patients were eligible for inclusion. The intervention could be delivered in the office setting or at home, from stand-alone software or through the Internet. Studies that used computers to generate paper-based information materials were excluded, as were those using handheld computers. The included studies used comparison groups given phone contact, usual care, paper-based or audio-only materials, nursing interventions, a specific website or standard education. The interventions in the included studies used a range of computer or web-based interventions, in some cases with additional nursing interventions, and ranged in duration from one session to 9 months. Eligible studies enrolled participants aged at least 18 years. Both studies of outpatients and in-patients were eligible for inclusion. The included studies involved diverse populations, with the exception of 4 trials in patients with breast cancer. Inclusion criteria were not stated for the outcomes. The outcomes reported included clinical indicators, knowledge retention, health attitudes, shared decision-making, health-service utilisation and costs.

Two reviewers assessed abstracts or full texts of articles for eligibility; in the case of disagreement, a majority decision of three reviewers was taken.

Assessment of study quality
The validity of the studies was assessed using the following criteria: use of a power calculation, randomisation, blinded assessment of the outcomes, baseline comparability of the groups, and appropriate statistical evaluation of the outcomes.

Two reviewers assessed study validity.

Data extraction
For each study the results were reported as text without accompanying data. The authors did not state how many reviewers carried out the data extraction.

Methods of synthesis
The studies were combined in a brief narrative, supported by evidence tables.

Results of the review
Twenty-six RCTs (n=4,695) were included in the review.

Power calculations were used in 5 studies; appropriate randomisation was reported in 10 studies, and 20 assessed
baseline comparability of the groups. Three studies used blinded outcome assessors and 17 used appropriate statistical methods.

Fifteen studies examined patients’ health attitudes, while 12 reported one or more clinical indicators as outcome measures. Clinical outcomes reported in the included studies included changes in depression scores, cardiovascular events, inhaler technique, recognition of facial affect, weight loss, menopausal symptoms, joint stiffness, blood sugar control, and a range of psychological measures such as measures of ability to participate in treatment processes. The authors did not present a synthesis of the health outcomes of the included studies; the results of individual studies were summarised in the evidence table.

Cost information
It appears that 5 studies (19.2%) reported information on the costs. No further information was reported in the review.

Authors’ conclusions
The field of computer-assisted patient education is still maturing. More evidence of the impact on clinical outcomes will be required before computer-assisted patient education is accepted in the office setting.

CRD commentary
The review question and inclusion criteria were clear. The authors searched two relevant databases but did not report searching for unpublished studies. This, together with the decision to restrict the review to studies reported in English, might have increased the chance that some relevant studies were not included in the review. The authors reported using measures to minimise bias and error in the study selection and validity assessment processes, but not in the data extraction. The validity assessment used appropriate criteria. The decision to adopt a narrative synthesis was appropriate in view of the level of clinical heterogeneity between the studies. However, the synthesis did not include an evaluation of the clinical outcomes of the included studies and details in the evidence tables were limited. It appears that the authors’ conclusion may reflect the evidence of the review but, in the absence of an appropriate evidence synthesis, this is difficult to determine.

Implications of the review for practice and research
Practice: The authors stated that physicians need to be aware of and make use of the influence of computer-assisted patient education in order to improve the quality of clinical care.

Research: The authors did not state any implications for further research.

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