Self-management interventions for type 2 diabetes: a systematic review

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CRD summary
This review concluded that self-management interventions seemed effective for diet, self-monitoring of blood glucose, knowledge and diabetes-specific quality of life; there were mixed results for exercise and clinical outcomes. Several potential sources of bias and the unknown quality of the included studies suggest these conclusions should be considered with caution.

Authors' objectives
To assess the effectiveness of multicomponent interventions aimed at self-management in patients with type 2 diabetes.

Searching
PubMed, PsycINFO and Web of Science were searched from January 2000 to March 2010 for published studies in English. Search terms were reported. Reference lists of reviews and included studies were scanned for relevant articles.

Study selection
Randomised controlled trials with a pre-test/post-test design that evaluated a diabetes self-management programme compared with no intervention in adults (at least 18 years) with type 2 diabetes were eligible for inclusion. Outcomes of interest were of challenging behaviour, well being, clinical and process. Studies that focused on only one self-management component were excluded, as were those that only published clinical parameters as outcome measures (self-management interventions aimed primarily at changing behaviour may not necessarily result in clinical improvements).

The 14 included studies were conducted in North America, Sweden, South Korea, Thailand and UK (four studies). Three studies included only women and three studies targeted specific ethnic populations. The included interventions were one-on-one, group or combined interventions. Interventions involved learning (information/education), planning (create a self-management plan) and practising (practice self-management behaviours). All control groups received usual care.

The authors did not state how many reviewers selected studies for inclusion.

Assessment of study quality
The authors did not report that study quality was assessed.

Data extraction
Effect sizes (Cohen's d, which was equivalent to standardised mean difference for continuous outcomes) were calculated where possible: 0.32 or less was defined as a small effect size, 0.33 to 0.55 was medium and at least 0.56 was large. The number of reviewers that extracted data was not reported.

Methods of synthesis
The studies were synthesised narratively by type of outcome. Individual study details were available in tables.

Results of the review
Fourteen RCTs were included in the review (n=1,784 participants, range 36 to 279).

Five out of 10 studies found that self-management interventions were associated with mostly medium to large benefits for physical activity compared with control. In four out of five studies self-management interventions were associated with large positive effects for dietary outcomes. Four out of five studies found that the interventions were associated with large positive effects for blood glucose monitoring. Five out of 13 studies found that self-management interventions were associated with lower glycosylated haemoglobin compared with control. One out of 10 studies found that a self-management intervention was associated with a small effect size for a lower body mass index. Two studies
reported positive effects on lipid profiles in the intervention groups.

The four studies that measured diabetes-specific quality of life all showed positive effects for the intervention compared with control. Four out of five studies that reported knowledge or perceived understanding of diabetes and three out of five studies that reported self-efficacy reported positive effects in the intervention group. No difference in effects was found for blood pressure.

**Authors' conclusions**
Self-management interventions seemed effective for diet, self-monitoring of blood glucose, knowledge and diabetes-specific quality of life; there were mixed results for exercise and clinical outcomes.

**CRD commentary**
The review question was supported by defined inclusion criteria for participants, intervention, outcomes and study design. Three relevant databases were searched. Only published studies in English were included, so the review was susceptible to language and publication biases. The review process was not reported, so any steps taken to reduce the possibility of error and bias (by using multiple reviewers at each stage) were unknown. Study quality was not assessed, so the quality of the included studies and the reliability of their results was unknown. Narrative synthesis appeared appropriate due to the diversity of interventions and outcomes reported.

Several potential sources of bias and the unknown quality of the included studies suggest the authors’ conclusions should be considered with caution.

**Implications of the review for practice and research**
**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that further research was needed to explain the inconsistent effects of self-management interventions on physical activity and investigate the processes underlying behaviour change. Future studies should embed the intervention into daily care. Standardised intervention descriptions, measures of behaviour change and improved reporting were needed in future studies.

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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.