

The clinical effectiveness and cost-effectiveness of long-term weight management schemes for adults: a systematic review

Lovemen E, Frampton GK, Shepherd J, Picot J, Cooper K, Bryant J, Welch K, Clegg A

CRD summary

The review concluded that long-term multicomponent weight management interventions were generally shown to promote weight loss in overweight or obese adults. Weight changes were small and weight regain was common. The review was well conducted and the authors' conclusions appear likely to be reliable.

Authors' objectives

To assess the long-term effectiveness of multicomponent weight management schemes for adults in terms of weight loss and maintenance of weight loss.

Searching

The Cochrane Library, MEDLINE, EMBASE, PsycINFO, Web of Science and BIOSIS were searched from inception to December 2009 for studies in English. Bibliographies of related papers were examined. Key conferences and symposia were searched and experts were contacted to identify additional published and unpublished studies. Trial databases were searched. Search terms were reported.

Study selection

Randomised controlled trials (RCTs) of clearly specified structured multicomponent weight management programmes that combined diet and physical activity with a behaviour change strategy in adults (≥ 18 years) classed as overweight or obese were eligible. Studies had to follow-up patients for more than 18 months. Studies were allowed to use over the counter treatments for weight loss, but not prescribed treatments. Eligible comparators included other multicomponent weight management programmes, single component weight management strategies and normal practice. Studies had to report a measure of weight loss. Studies of patients with eating disorders and other medical conditions were excluded.

In nearly half of the studies the population was class I obese. Classifications varied for the other studies. Mean ages (where reported) ranged from 36 to 47 years. Half the studies were clinic based. The focus of the intervention (diet or exercise) varied across trials. Nearly half of the studies included a usual care or no intervention group. All studies were conducted in USA. Weight change from baseline was the primary outcome in all trials except one.

Titles and abstracts were assessed by two reviewers independently. The full texts of relevant papers were assessed by one reviewer and checked by a second. Disagreements were resolved by discussion or by using a third reviewer.

Assessment of study quality

Criteria used to evaluate study quality were: randomisation; allocation concealment; population baseline characteristics; blinding of assessors, care providers and participants; imbalances in attrition; outcomes; intention-to-treat (ITT) analyses; and analyses of missing data. Responses were translated into judgements of high, low and uncertain risk of bias based on Cochrane risk of bias criteria.

Studies were assessed by one reviewer and checked by a second. Any disagreements were resolved by discussion or using a third reviewer.

Data extraction

Data were extracted on weight loss, study-defined success rates at more than 18 months, attrition rates at more than 18 months, barriers and facilitators of weight loss and maintenance of weight loss.

Data were extracted by one reviewer and checked by a second. Any disagreements were resolved by discussion or using a third reviewer.

Methods of synthesis

A narrative synthesis grouped studies by intervention and outcome.

Results of the review

Twelve RCTs were included (the relevant sample size was unclear as details of ineligible treatment arms were also presented). Seven studies had a high risk of bias because their analysis and interpretation did not account for missing data. One study was at high risk of bias due to unequal group similarity. Nearly all the assessments of blinding were classed as uncertain. Follow-up ranged from 18 to 54 months.

Five RCTs that compared multicomponent interventions with non-active comparator groups generally found that weight loss appeared to be greater in the intervention groups than in the comparator groups; the differences were statistically significant in three RCTs. Two RCTs compared multicomponent interventions with a focus on diet and found no statistically significant differences in weight loss between interventions. Four RCTs that compared multicomponent interventions with a focus on exercise yielded results that showed little consistency across studies; two trials reported statistically significant differences in weight loss at 18 months.

In one RCT the intervention focusing on the goal-setting interval. It appeared that weight loss was greatest in those given daily goals compared with those given weekly goals; the level of statistical significance was not reported.

Overall, where measured, it appeared that most groups began to regain weight at later follow-up.

Authors' conclusions

Long-term multicomponent weight management interventions were generally shown to promote weight

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loss in overweight or obese adults. Weight changes were small and weight regain was common. Interpretation of results was difficult as there were few similarities between studies.

CRD commentary

The review addressed a clear question and was supported by appropriate inclusion criteria. Attempts to identify all relevant studies were made by searching electronic databases and various other methods. Including only studies in English meant that some relevant studies may have been missed and the review may have been subject to language bias. Suitable methods were employed to reduce risks of reviewer error and bias throughout the review. Study quality was assessed and the results were used in interpreting the results of the review. Comprehensive study details were provided. An appropriate narrative synthesis of the data was undertaken.

The review was well conducted. The authors' conclusions reflect the limited and varied evidence available and appear likely to be reliable.

Implications of the review for practice and research

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

Research: The authors made several recommendations and highlighted the need for an evaluation of the effects of long-term multicomponent weight management interventions in a UK setting (ideally using a Trials of Hypertension Prevention intervention). Studies should incorporate evaluation of facilitators and barriers and describe interventions adequately.

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