Systematic review of interventions in the treatment and prevention of obesity

Authors' objectives
To assess the effectiveness of interventions used in the prevention and treatment of obesity and the management of weight loss.

Searching
MEDLINE, EMBASE and PsycLIT were searched from 1966 to January 1997, DHSS Data, current research in the UK, BIDS, SIGLE, Dissertation Abstracts, Sport, DRUG INFO, DRUG database, AMED, ASSI, CAB, HPA, NTIS, Directory of Published Proceedings (Interdok), Purchasing Innovations Database, Health Promotion Database SSRU, DARE, NHS Economic Evaluation Databas were also searched. Search strategies are given in the appendices. Bibliographies of existing reviews were examined and experts in the field were consulted.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) with an observation period of at least one year. For studies of obesity prevention and complementary therapies, as no or few RCTs were available, non-randomised studies with a concurrent control group were included. Studies had to report baseline and post-intervention measurements of either weight change, fat distribution or fat loss.

Specific interventions included in the review
Behavioural, dietary, exercise, pharmacological, surgical and alternative therapies.

Participants included in the review
Overweight and obese adults and children, or those considered to be at risk of developing the condition. Individuals suffering from eating disorders were excluded.

Outcomes assessed in the review
Weight change (absolute weight loss, percentage of weight loss relative to baseline values), fat content (e.g. body mass index, ponderal index, skin fold thickness, fat free mass, fat loss) and fat distribution (e.g. waist-hip ratio, girth-height ratio, waist size)

How were decisions on the relevance of primary studies made?
The titles and abstracts were assessed for relevance, with a sample checked by a second reviewer. Full papers were assessed according to the inclusion criteria.

Assessment of study quality
The authors do not provide details of the process used to critically appraise the primary studies.

Data extraction
The data were extracted onto a database (a copy of the data extraction sheet is given in an appendix). The data extraction was checked by a second reviewer.

Methods of synthesis
How were the studies combined?
The studies were combined a narrative review.
How were differences between studies investigated?
The authors do not state how differences between the studies were investigated.

Results of the review
Ninety-nine studies in total:

13 RCTs on children and adolescents.

1 RCT and 2 non-randomised trials on preventive interventions.

13 RCTs on behavioural interventions.

12 RCTs on behavioural interventions with dietary component.

5 RCTs on behavioural interventions with dietary and exercise components.

2 RCTs on dietary interventions.

1 RCT on dietary and exercise interventions.

13 RCTs on pharmacological interventions.

15 RCTs on surgical interventions.

9 RCTs on maintenance.

11 RCTs on comprehensive interventions.

The methodological quality of many of the included studies was poor. Small sample sizes, high drop-out rates and a lack of intention-to-treat analysis made the interpretation of results difficult.

Family therapy programmes were effective in preventing the progression of obesity in already obese children.

Behavioural, diet and exercise programmes have all been shown to be effective in the treatment of adult obesity, particularly when two or more approaches are used in combination.

Pharmacological interventions appear to produce weight loss for up to 9 months, after which time a proportion of participants regain weight.

Surgery is normally considered only for morbidly obese patients. The weight loss associated with surgical interventions is greater and more sustained than that achieved by non-surgical methods. However, surgery is associated with complications that may affect the patient's quality of life.

Maintenance strategies have been shown to be effective at reducing the amount of weight regain following weight loss after treatment.

Authors’ conclusions
Potentially effective interventions for the management of obesity are available. However, due to problems with methodological quality research findings indicative of promising interventions should be replicated. The role for the primary health care team needs to be defined and supported by the appropriate resources.

CRD commentary
This is a thorough, well-written review with a clear question, exhaustive search, clear inclusion and exclusion criteria and tabulated details of the primary studies.
Although it is apparent from the review tables and literature search results that primary studies were critically appraised, no details of this process is given in the review.

The authors’ conclusions follow from the results presented and as they highlight, are limited by the generally poor methodological quality of the primary studies.

Bibliographic details

Original Paper URL
http://www.york.ac.uk/inst/crd/CRD_Reports/crdreport10.pdf

Other publications of related interest

Indexing Status
Subject indexing assigned by CRD

MeSH
Adolescent; Adult; Appetite Depressants /therapeutic use; Behavior Therapy; Child; Combined Modality Therapy; Diet, Reducing; Exercise; Family Therapy; Gastric Bypass; Gastroplasty; Middle Aged; Obesity /prevention & control /therapy /epidemiology; Prevalence; Randomized Controlled Trials as Topic; Risk Factors

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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.