A structured review of randomized controlled trials of weight loss showed little improvement in health-related quality of life
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CRD summary
This review assessed the effect of weight-loss interventions on health-related quality of life (HrQoL). The authors concluded that HrQoL outcomes, including depression, were not consistently improved, although the overall quality of the included trials was considered poor. Despite some methodological weaknesses of the review, these conclusions appear reasonable.

Authors' objectives
To assess the effect of weight-loss interventions (including behavioural, pharmacological and surgical interventions) on health-related quality of life (HrQoL).

Searching
MEDLINE, HealthSTAR, PsycINFO and EconLit were searched, using terms listed in the review, for papers published in the English language. Studies published before 1966 or after July 2003, and studies not listed in these databases, were excluded from the review.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) that measured weight and HrQoL at two or more time points were eligible for inclusion. The included studies ranged from 6 weeks to 48 months in duration. One of the included studies was a non-randomised controlled trial with matched controls.

Specific interventions included in the review
Studies of interventions designed to achieve weight loss were eligible for inclusion. The included studies assessed the effects of behavioural inventions (22 studies), pharmacological treatments (7 studies), surgical techniques (4 studies) and somatic moxibustion acupuncture (1 study).

Participants included in the review
Studies of participants aged under 18 years only were excluded, as were studies that focused on pregnancy-related obesity or gestational diabetes.

Outcomes assessed in the review
Studies using generic or specific measures of HrQoL outcomes were eligible. The most commonly used generic measure was the SF-36 (6 studies), while the most frequently used condition-specific measure was the Beck Depression Inventory (10 studies).

How were decisions on the relevance of primary studies made?
More than one of the authors selected the papers for inclusion, although it was unclear whether this was done independently and how any disagreements might have been resolved.

Assessment of study quality
The studies were assessed for concealment of randomisation, blinding, loss to follow-up, intention-to-treat analysis, adjustment for mediation of weight loss in HrQoL analysis, and adjustment for multiple comparisons. The authors did not state how many reviewers extracted data on study quality and performed the quality assessment. Any disagreements in extraction were resolved by further examination of the paper.
Data extraction
The data were extracted into a modified form originally developed by the Centers for Disease Control and Prevention. The authors did not state how many reviewers were involved in this process. Any disagreements in extraction were resolved by further examination of the paper. Effect sizes were calculated for depression (using the Beck Depression Inventory) in studies reporting baseline and follow-up values in the treatment and control groups, standard deviations at baseline and final sample sizes.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative and in tabular form, grouped according to the type of HrQoL measure used. Studies that assessed depressive symptoms using the Beck Depression Inventory and provided sufficient information on effect size were also combined in a random-effects meta-analysis; a fixed-effect model was also used for comparison.

How were differences between studies investigated?
Differences between the studies were discussed in terms of type of HrQoL measure used, but heterogeneity was not formally assessed.

Results of the review
Thirty-four studies were included: 33 RCTs and 1 non-randomised controlled trial.

Most of the studies used intention-to-treat analysis and reported the loss to follow-up. Only 4 studies blinded recruitment staff, and 14 blinded the investigation team to randomisation.

Nine of the 12 studies that used generic HrQoL measures showed positive treatment effects. Positive effects varied by study duration and SF-36 domain.

Six of the 11 studies that used obesity-specific measures of HrQoL showed positive treatment effects.

Two of the 15 studies that used non-obesity specific measures of HrQoL showed positive treatment effects.

There was no significant difference in depressive symptoms, as assessed by the Beck Depression Inventory, between patients who received treatment and those in the control group (pooled effect size 0.071, 95% confidence interval: -0.32, 0.46). The fixed-effect model also showed no significant difference between the groups.

Authors’ conclusions
HrQoL outcomes, including depression, were not consistently improved by weight-loss interventions. The overall quality of the included trials was poor.

CRD commentary
The review question was well defined with clear inclusion criteria. The literature search was restricted to studies published in English and there was no attempt to identify any unpublished studies, so it is possible that publication and language biases might have influenced the findings. It was unclear how many authors selected studies for inclusion, thus it is not possible to comment on the possibility of reviewer error and bias. A methodological quality assessment was reported, but it was not used to inform the findings. The studies were combined appropriately given the data available.

However, there was limited investigation of differences between the studies (e.g. in terms of intervention type and study setting) and the potential impact of these on the results. Despite these limitations, the authors’ cautious conclusions appear to reflect the evidence presented and indicate the need for further research.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that better designed RCTs that use standardised HrQoL measures are needed. Future studies should provide sufficient data to allow the calculation of effect sizes on all patient outcomes.

Bibliographic details

PubMedID
15878470

DOI
10.1016/j.jclinepi.2004.10.015

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Depression /etiology; Female; Humans; Male; Middle Aged; Obesity /psychology /rehabilitation; Psychiatric Status Rating Scales; Psychometrics; Quality of Life; Randomized Controlled Trials as Topic /methods; Research Design; Treatment Outcome; Weight Loss

AccessionNumber
12005000459

Date bibliographic record published
30/06/2006

Date abstract record published
30/06/2006

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.