A systematic review of the effectiveness of group versus individual treatments for adult obesity

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CRD summary
This review reported that psychologist-led group-based interventions were more effective than individual-based interventions for treatment of a predominantly female obese adult population. The review process was generally well-conducted, but reliability of the results is limited by small sample sizes, lack of recent data, variability of intervention components and poor quality and reporting of trials.

Authors' objectives
To compare the effectiveness of group-based and individual-based modes of treatment delivery for the treatment of obesity in adults.

Searching
MEDLINE, EMBASE, CINAHL and PsycINFO were searched to July 2008. Search terms were not reported. Two obesity journals and references of relevant articles were searched for additional studies.

Study selection
Randomised controlled trials (RCTs) that assessed change in weight or body mass index (BMI) with a group-based intervention compared to an individual-based intervention in adults (at least 18 years old) with a BMI of at least 28kg/m² (except ethnic groups for which a lower cut-off was justified) were eligible for inclusion. Trials had to have at least one year follow-up. Groups with obesity-associated eating disorders were excluded.

The included trials were conducted in UK, USA and Thailand; only one trial was conducted post-1986. All but one trial recruited women only; the other recruited men only. Where reported, mean participant age ranged from 38.6 to 52.8 years and mean BMI from 28.8 to 31.8kg/m²; ethnicity was not reported. Most interventions were multi-component with a behavioural programme and lifestyle advice; several trials provided a monetary reward. Where reported, interventions were delivered by a psychologist or a dietician.

Trials were selected independently by two reviewers.

Assessment of study quality
One reviewer assessed trial quality in terms of allocation concealment, blinding, withdrawals and the use of an intention-to-treat analysis; this was checked by a second reviewer.

Data extraction
Mean change in weight or BMI and standard deviation were extracted by one reviewer and checked by a second. Missing standard deviations were imputed using a linear regression plot of the standard deviation of mean weight change on absolute mean weight change.

Methods of synthesis
Weighted mean differences with 95% confidence intervals (CI) were calculated. Statistical heterogeneity was assessed using $I^2$. A fixed-effect model was used if $I^2$ was less than 50% and a random-effects model was used otherwise. Subgroup analyses were planned to investigate the impact of: use of monetary rewards; healthcare professional delivering the intervention; duration of intervention; provision of training; and use of multiple- or single-component interventions.

Results of the review
Five RCTs (11 group comparisons) were included in the review (n at least 376 participants; where reported, range was 49 to 160). No trials reported allocation concealment or blinding of participants. One study reported blinding of
assessors. One study used an intention-to-treat analysis. All trials reported the number of withdrawals; reasons for withdrawals were described in only two. Attrition rates ranged from 3.4% to 64%. Follow-up ranged from 52 to 119 weeks.

Group-based treatment was associated with a significant weight loss at one year compared with individual treatment (WMD -1.4kg, 95% CI -2.7kg to -0.1kg; 11 groups). Greater weight loss at one year was achieved for group-based interventions compared to individual interventions when trials offered a financial reward (WMD -2.8 kg, 95% CI -5.4kg to -0.2kg; five groups) and where treatment was psychologist-led (WMD -3.1kg, 95% CI -5.5kg to -0.6kg, number of groups not reported). There was no significant difference in weight loss between group- and individual-based treatment, where there was no financial reward (six groups) or where the treatment was dietician-led. No further subgroup analyses were conducted due to insufficient data.

\[^2\] and number of comparison groups for healthcare professional subgroup analyses were not reported. In all other analyses, there was no evidence of statistical heterogeneity.

**Authors’ conclusions**

Group-based interventions were more effective than individual-based interventions among a predominantly female participant pool receiving psychologist-led interventions.

**CRD commentary**

The research question was clear and supported by relevant inclusion criteria. Several relevant databases were searched. However, the authors did not report whether language restrictions were applied and there were no attempts to identify unpublished studies, so language and publication biases could not be ruled out. Each stage of the review was conducted in duplicate, which reduced the risk of error and bias. Trial quality was assessed using relevant criteria. There were a number of discrepancies between tables and text. Most participants were female and resided in USA and UK. Although no statistical heterogeneity was reported, there was considerable clinical heterogeneity (particularly in components of interventions evaluated) and dropout rates were generally high. Therefore, reliability and generalisability of the pooled results to the general obese population was uncertain. Although the review process was generally well-conducted, the reliability of the conclusions is limited by small sample sizes coupled with high attrition rates, lack of recent data, clinical heterogeneity and poor quality and reporting of the included trials.

**Implications of the review for practice and research**

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

**Research:** The authors made several recommendations, which included: use of validated and comparable treatments across groups; exploration of the reason for high attrition rates in dietician-led trials; incorporation of training of group-treatment providers and monitoring of delivery; inclusion of cost comparisons that include a wide range of costs and employ a societal perspective; assessing the effectiveness of group-based approaches in men; and better reporting of trial design and population characteristics.

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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.