

Systematic review of the use of financial incentives in treatments for obesity and overweight

Paul-Ebhohimhen V, Avenell A

CRD summary

This review concluded that financial incentives in behavioural treatments for obese and overweight adults had no significant effect on weight loss or maintenance. This was a reasonably well-conducted review, but the poor quality of included trials and concerns regarding applicability outside North America should be borne in mind when interpreting the results.

Authors' objectives

To assess the effectiveness of financial incentives in behavioural treatments for obese and overweight adults.

Searching

MEDLINE, EMBASE, CINAHL, PsycINFO, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials (CENTRAL) and SPORTDiscus were searched without language restrictions for studies from 1966 to 2007. Search terms were reported. Seven relevant journals were searched for additional studies. Reference lists of relevant reviews and books were searched.

Study selection

Eligible for the review were randomised controlled trials (RCTs) that evaluated financial incentives used as rewards for weight loss or other changes in behaviour of adults; eligible adults had to be at least 18 years of age, with a body mass index (BMI) of at least 28kg/m² (where appropriate, ethnic groups had a lower cut-off for BMI). Eligible trials were also required to have follow-up of least one year and include weight change as an outcome. Trials were excluded if it was not possible to extract data on financial incentives.

In included trials, interventions comprised freely supplied financial incentives, although most were financial incentives provided from participants' deposited money. The monetary value of the incentive, calculated as a percentage of personal disposable income (PDI), ranged from 0.2% PDI to 10.2% PDI (median 1.2% PDI). The duration of incentives ranged from eight weeks to 18 months. In the included trials, most of the participants were women, recruited through media advertisements; one trial comprised all males. Participants mean age ranged from 35.7 to 52.8 years; their mean BMI ranged from 29.3 to 31.8kg/m². Only two trials reported ethnicity. Most of the trials were conducted in the USA, with one trial from Canada.

Two reviewers selected studies for inclusion in the review.

Assessment of study quality

Two reviewers assessed trial quality according to previously published criteria; discrepancies were resolved through consensus.

Data extraction

One reviewer extracted, or calculated, mean changes in weight; missing standard deviations were estimated according to previously published methods. Authors were contacted for missing data. Data were checked by a second reviewer and discrepancies were resolved through consensus.

Methods of synthesis

In the absence of statistical heterogeneity ($I^2 < 50\%$), weighted mean differences (WMDs) and 95% confidence intervals (CIs), were obtained using a fixed-effect model. A random-effects model was used when statistical heterogeneity was present ($I^2 > 50\%$).

A priori subgroup analyses were used to compare: duration of use of incentives above and below the median intervention period; monetary value of incentive (as a percentage of PDI) above and below the median of the maximum value; reward based on weight change and reward based on other behaviour change; reward for group performance and reward for individual performance; reward by psychologist and reward by non-psychologist.

Results of the review

Nine RCTs were included in the review (n=998 participants). Sample size ranged from 38 to 202. None of the studies reported sample size calculation, blinding, or intention to treat analysis. Attrition as reported in three studies. Duration of follow-up ranged from 12 to 30 months.

There was no significant difference in weight loss or maintenance at 12, 18 or 30 months for financial incentive groups compared with groups not receiving a financial incentive. No significant heterogeneity was found.

Subgroup analyses showed no statistically significant differences.

Authors' conclusions

There was no significant effect of the use of financial incentives on weight loss or maintenance.

CRD commentary

The review question and supporting criteria were well defined. Multiple sources were searched to identify relevant evidence in any language, reducing the possibility of language bias; it was unclear whether unpublished studies were sought, so some studies may have been missed. Study selection, data extraction and quality assessment were performed in duplicate, which reduced the risk of error and bias in the review.

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Quality assessment of the included trials was undertaken, but limited details were provided; most trials appeared to be of poor quality and contained small sample sizes. The chosen method of synthesis appeared to be appropriate given the absence of statistical heterogeneity. All included trials were conducted in North America, so the generalisability of the findings to other setting is uncertain, as acknowledged by the authors.

This was a generally well-conducted review, but the poor quality of included trials and concerns regarding generalisability should be borne in mind when interpreting the results.

Implications of the review for practice and research

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

Research: The authors stated that studies with sufficient follow-up to allow for long-term effects of treatment to be studied are required, as are assessments of the cost-effectiveness of financial incentives compared with current practice or other interventions. These studies should also measure attributes such as amount, frequency and method of administration of financial (or other) incentives that can serve as sufficient motivation for use as rewards.

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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.