A systematic review of the efficacy of non-pharmacological treatments for depression on glycaemic control in type 2 diabetics

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CRD summary
This review concluded that the limited evidence available from randomised controlled trials did not support the effectiveness of non-pharmacological treatments for depression on glycaemic control in patients with type 2 diabetes. Overall, despite concerns about the review methods, the authors' cautious conclusions adequately reflect the included evidence.

Authors' objectives
To assess the efficacy of non-pharmacological treatments for depression on glycaemic control in individuals with type 2 diabetes.

Searching
MEDLINE via PubMed, CINAHL, PsycINFO, EBM Review, The Cochrane Library, ProQuest Medical Bundle and SCOPUS were searched for English-language studies published between 1996 to 2007. Search terms were reported. The reference lists of reviews and included studies were checked for additional studies.

Study selection
Randomised controlled trials (RCTs) of non-pharmacological treatments for depression that assessed both glycaemic control and depressive symptoms in individuals with type 2 diabetes and depression were eligible for inclusion in the review. Glycaemic control had to be assessed using levels of haemoglobin A1C (HbA1C). Studies were excluded from the review if they included patients with other psychiatric disorders, included young-aged patients or provided insufficient information about depression level and HbA1C.

Included studies assessed the effects of combined cognitive behavioural therapy (CBT) and self-management education versus self-care management education alone; or a collaborative depression care programme (based on antidepressants and/or psychological treatment tailored to participants’ individual needs) versus usual care. The number of weekly intervention sessions ranged from six to 12, each lasting from 30 to 60 minutes. Follow-up ranged from three to 12 months. The mean ages of participants ranged from 53.1 years to 58.6 years, with the exception of one study where the mean age was 71.2 years.

Two reviewers assessed each study for inclusion.

Assessment of study quality
Validity was assessed using the Jadad scale to assess randomisation, blinding and completeness of follow-up. Each study was awarded a score ranging from 0 to 5 points. Only studies that scored 3 or more points were included in the review. The authors did not state how many reviewers performed the validity assessment.

Data extraction
Mean changes in depression and HbA1C were extracted. Effect sizes were calculated by dividing mean changes by pooled standard deviations. Where mean changes and standard deviations were not reported, estimates were calculated if possible from medians, ranges and sample sizes using the methods of Hozo. Odds ratios (ORs) with 95% confidence intervals (CIs) were reported for outcomes expressed as percentages.

The authors stated neither how data were extracted for the review nor how many reviewers performed the data extraction.

Methods of synthesis
Studies were synthesised in a narrative. Effect sizes of 0.2 to 0.5 were described as small, 0.51 to 0.8 as medium and above 0.8 as large. Differences between the studies were described and reported in a summary table.

**Results of the review**

Three RCTs were included in the review (n=788). One study had a sample size of only 42 patients; the other two studies had sample sizes of 329 and 417 patients. All of the studies were adequately randomised and outcome assessors blinded. Loss to follow-up was described as modest, but only one study described study withdrawals.

One RCT compared CBT and diabetes self-management education with diabetes self-management alone. It reported no statistically significant differences between the two study groups for glycaemic control (HbA1c), but a statistically significant difference in the remission and improvement of depression in favour of the treatment group both post treatment and after six months of follow up. The two remaining RCTs compared collaborative care programmes with usual care and reported only small effect sizes (0.01 to 0.04) for the intervention group with respect to glycaemic control (HbA1c). One of these two studies also reported an OR and 95% CI for the improvement of depression, but no statistically significant difference between treatment and control was observed.

**Authors' conclusions**

The limited evidence available from randomised controlled trials did not support the effectiveness of non-pharmacological treatments for depression on glycaemic control in patients with type 2 diabetes.

**CRD commentary**

This review answered a clearly described research question using defined inclusion criteria. Searches were carried out only for published English-language studies over an 11 year period and so publication and language biases may have been a problem. No justification was given for limiting the dates of the search. Two authors independently assessed studies for inclusion, but it was unclear whether similar methods to reduce reviewer error and bias were used when extracting the study data and assessing study quality. Study quality was assessed using published criteria and only those studies considered to be of adequate methodological quality were included in the review. Only a small number of studies were included in the review, one of which had a much smaller sample size than the others. Few details of the participants were reported, with the exception of age (where one study appeared to include older participants in comparison with the other two studies). Taking this into account along with the differences in interventions and control groups, the authors’ use of a narrative summary was appropriate. Overall, despite concerns about the review methods, the authors’ cautious conclusions adequately reflect the limited evidence included in the review.

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

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

**Research:** The authors stated that further studies were required to investigate whether integrated treatments for depression and diabetes might be helpful in treating patients with type 2 diabetes who have comorbid depression to achieve better psychological and diabetes outcomes.

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