A systematic review of non-pharmacological treatments for depression in people with chronic physical health problems

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CRD summary
The review found that compared to usual treatment, some non-pharmacological interventions can reduce depression in people with chronic physical health problems. The comparative effectiveness of non-pharmacological interventions is unclear. These findings require cautious interpretation due to potential weaknesses in the review process, paucity of evidence and the possibility of missing studies.

Authors' objectives
To evaluate non-pharmacological treatments for depression in individuals with depression and chronic physical health problems.

Searching
CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE, MEDLINE and PsycINFO were searched from inception to March 2008. Search terms were available online. Reference lists of retrieved articles were checked. Previous systematic reviews and relevant meta-analyses were searched. Experts were consulted. The search was limited to studies where at least the abstract was in English.

Study selection
Randomised controlled trials (RCTs) of psychosocial interventions for depression in individuals with major depression or dysthymia and a chronic physical health problem with a known physical cause were eligible for inclusion. Participants could have depression or dysthymia diagnosed formally (by established diagnostic criteria or screening tools) or could (as a group) have a mean depression score above clinical cut-off points listed in the review. Controls could receive a comparison such as attention control or standard care, or another active psychosocial intervention. Studies of psychosocial plus pharmacological interventions were eligible provided controls received a psychosocial intervention alone. Studies were required to report depression (primary outcome). Secondary review outcomes were physical health and quality of life. Studies of complex multicomponent interventions were excluded.

Participants in the included studies had a wide range of physical health problems that included cancer, multiple sclerosis and HIV. About three-quarters of the studies in the meta-analysis ascertained depression by diagnosis or formal screening. Baseline severity of depression varied widely (mean scores on Beck Depression Inventory ranged from 13 to 28, where stated). Interventions included cognitive and behavioural interventions (group, individual and self-help) and peer support (self-help), with or without antidepressants. The comparator was usually standard care. The duration of intervention in most studies was relatively short (such as one session weekly for six to eight weeks). The most common outcome indicator for depression was self-rated depression score. Other measures used were non-remission, non-response and observer-rated depression score. Studies usually defined non-remission as scoring above the cut-off point on a recognised scale and non-response as less than a 50% reduction in mean depression score. The most commonly used depression scoring tools used were the Center for Epidemiologic Studies Depression Scale, Beck Depression Inventory and Hamilton Rating Scale for Depression. Few studies reported the secondary review outcomes.

Studies were selected by one reviewer who resolved queries by discussion with a second reviewer.

Assessment of study quality
The Scottish Intercollegiate Guidelines Network (SIGN) checklist was used to assess quality criteria for each RCT: study question, methods of randomisation and allocation concealment, blinding, baseline equivalence, outcome measures, dropouts, use of intention-to-treat analysis (ITT) and equivalence across study sites. Studies of adequate quality were included (adequate studies met at least some SIGN criteria and any unmet criteria were unlikely to change findings). Poor-quality studies were excluded. The body of evidence for pooled data for each outcome was graded as high, moderate, low or very low depending on the study design, consistency, directness and magnitude of effect, using published methods (GRADE working group).
The authors did not state how many reviewers performed the study quality assessment.

**Data extraction**
Mean differences between the groups were calculated from means and standard deviations of endpoint scores for continuous data. Risk ratios (RRs) were calculated for dichotomous data, with 95% confidence intervals (CIs). Change scores were used where endpoint data were unavailable or the groups differed significantly at baseline. Where possible, ITT analysis was used with the last observation carried forward. All outcome data were double-checked for accuracy.

**Methods of synthesis**
Studies that were similar in intervention, theoretical approach, comparison and outcome measure were pooled using a random-effects model to calculate pooled weighted mean differences and/or standardised mean differences (SMDs) or risk ratios, with 95% confidence intervals. Effects were categorised as small (SMD 0.2 to 0.3), medium (SMD 0.4 to 0.7) or large (SMD>0.7). Heterogeneity was assessed using $I^2$.

Subgroup analyses were used to examine differences between types of intervention and between studies that focused specifically on reducing depression versus those with wider aims. In sensitivity analyses, outlying studies and studies in which not all participants clearly met criteria for depression at baseline were excluded.

Publication bias was assessed using a funnel plot and Egger's test.

**Results of the review**
Thirty-five studies were included and 22 studies (2,073 participants) were suitable for meta-analysis. Twenty-one of the 22 studies met most or some SIGN quality criteria and those criteria that were not met were unlikely to alter the findings. Studies rarely reported length of follow-up. In most cases pooled data were rated as moderate quality.

Compared with standard care, significantly reduced depression scores were found for peer support (SMD -0.32 (small effect), 95% CI -0.62 to -0.03; three RCTs) and cognitive and behavioural interventions, either individual-based (SMD -0.55 (medium effect), 95% CI -0.97 to -0.13; five RCTs) or group-based (SMD -0.58, 95% CI -0.99 to -0.17; eight RCTs, Egger's test p<0.05).

Combined psychosocial and pharmacological interventions significantly reduced depression scores compared to psychosocial interventions alone (SMD -0.39 (small effect), 95% CI -0.67 to -0.11; three RCTs). There was borderline/no significant difference in depression outcomes between guided self-help based on cognitive and behavioural interventions and standard care (four RCTs) and between counselling and standard care (one RCT).

There was no significant difference in depression scores between individual-based cognitive and behavioural interventions versus either counselling (three RCTs) or supportive psychotherapy (one RCT) and between group-based cognitive and behavioural interventions and other psychosocial treatments (three RCTs). There were no significant benefits associated with psychosocial interventions at six-month follow-up (five RCTs). No data were available on physical health or quality of life.

Other data reported in the review included the findings of RCTs unsuitable for pooling. In sensitivity and subgroup analyses, intervention effects were strongest in RCTs that recruited participants with depression and/or utilised interventions that targeted depression specifically.

**Authors' conclusions**
Compared to usual treatment, some non-pharmacological interventions, which included individual- and group-based cognitive and behavioural interventions, reduced depression in people with chronic physical health problems. The comparative effectiveness of non-pharmacological interventions was unclear.

**CRD commentary**
The review question was clear. Relevant sources were searched for studies. The restriction to studies in English meant that there was potential for language bias. Appropriate methods were used to assess publication bias; this bias was evident in one of the analyses. Steps were taken to minimise risks of reviewer bias and error by double-checking data entry. Study selection was undertaken by one reviewer and it was unclear how many reviewers conducted the validity assessment. Few details (such as mean age, gender) were provided in the published review about participants; further
details appeared to be available, but were inaccessible at the time of writing (see Other Publications of Related Interest).

Appropriate methods were used to combine the studies and assess for heterogeneity, but neither the results of the assessment for heterogeneity nor the forest plots were presented in the review. This made it difficult to determine the consistency of the findings. As the authors noted, there were few studies for most specific interventions, sample sizes were small, some studies included participants without depression, most studies assessed relatively short treatment durations, most studies had standard care as a comparator (potential for confounding) and few studies included follow-up data.

The authors' findings require cautious interpretation due to potential weaknesses in the review process, a paucity of evidence and potential for missing studies.

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

**Practice:** The review found that people with a chronic health condition and depression should receive treatment for depression as well as their usual physical care. It appears that evidence about effective psychosocial interventions among people with depression without physical problems can be extrapolated to this population, although some interventions may need adaptation for people with long-term conditions. It is suggested that brief psychological interventions be integrated into rehabilitation programmes. An intervention using a group format and targeting people with depression is likely to be the most effective and cost-effective approach.

**Research:** The review found that more research was needed on the effectiveness and cost-effectiveness of psychosocial interventions for people with both a depressive disorder and a chronic physical health problem. Studies should be large, have long-term follow-up and should report on quality of life and physical health as well as effectiveness. Interventions should be compared with other active interventions or at least attention control.

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