Case management to improve major depression in primary health care: a systematic review

CRD summary
This review concluded that case management is an effective strategy in the treatment of major depression in primary health care settings. Overall, the findings appear to support the intervention, but some caution is advised given the differences between studies and the limited statistical information provided in the primary studies.

Authors' objectives
To assess the effectiveness of case management in the treatment of major depression in primary health care settings.

Searching
MEDLINE (1966 to May 2003), EMBASE (1980 to May 2003) and the Cochrane Library (Issue 2, 2003) were searched using the specified search terms. In addition, the reference lists of retrieved articles were examined and experts were contacted for additional studies. Abstracts were excluded.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) with at least 6 to 12 months' follow-up were eligible for inclusion. The studies also had to report a clearly stated method. Seven included studies followed participants up for at least 1 year. Studies were excluded if they scored less than 0 to 2 points (i.e. were of moderate quality) on the quality assessment scale (see Validity Assessment).

Specific interventions included in the review
Studies assessing case management as a community-based intervention in primary health care settings were eligible for inclusion. Eligible control groups were not specified and details were not reported. Case management was defined as any intervention aimed at maintaining the continuity of patient care, including at least the systematic monitoring of symptoms. Other elements that could be included were coordination and assessment of treatment, and the arrangement of referrals. Studies examining special primary care strategies such as prevention, screening, diagnosis, case-finding, health education, pharmacotherapy, counselling, psychotherapy, social work and intensive support were excluded.

The complexity and nature of the interventions reported in the included studies varied and was scored according to a published complexity score. This examined the number of elements included in the intervention. Full details of the scoring system were provided. Interventions were awarded a score which defined them as either 'complex' or 'standard'. All of the included studies used at least the monthly monitoring of symptoms. In addition, 9 studies offered three or more other services, such as feedback, treatment guidelines or support for relatives. The majority of the studies were conducted in the USA and most were carried out in health maintenance organisations.

Participants included in the review
Studies of patients with major depression or a depressive episode based on DSM-V (American Psychiatric Association) or ICD-10 criteria were eligible for inclusion. In addition, the diagnosis had to be based on a validated instrument. Studies that focused on doctors, patients' relatives, in-patients, drug users, homeless people, disabled people, or on depression in special circumstances such as end of life or pregnancy, were excluded. All of the participants reported in the review were receiving basic pharmacological support, mainly in the form of antidepressants (e.g. tricyclic antidepressants or selective serotonin re-uptake inhibitors). The authors specified that antidepressant therapy should have been given for at least 6 months in accordance with the 2004 National Institute for Clinical Excellence guidance.

Outcomes assessed in the review
Studies reporting the severity of depression symptoms and/or a change in patient adherence to treatment were eligible for inclusion. The severity of depression symptoms had to be measured using a validated instrument. The outcomes
assessed included: severity of depression symptoms, based on a symptom scale; clinical response, defined as a 50% improvement from baseline on the outcome scale; and remission, defined as depression below the symptom threshold on the scale used. Most studies evaluated symptoms using the Hopkins Symptom Check List, the Center of Epidemiological Studies Depression Scale or the Hamilton Depression Rating Scale. Adherence was defined according to the individual study and could be based on pharmacy reports, electronic count boxes or patient self-report.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Methodological quality was assessed according to the following criteria described by the Cochrane Effective Practice and Organisation of Care (EPOC) Group: method of randomisation, unit of randomisation, baseline population comparability, homogeneity of intervention for all participants, validity of outcome assessment, and type of analysis.

Two authors independently assessed the studies and awarded a score based on the specified criteria; the maximum possible score was 6 points. Studies scoring 5 to 6 points were considered 'good', those scoring 3 to 4 points were considered 'fair', and those scoring 0 to 2 points were considered 'moderate'.

Data extraction
One author extracted the data into evidence tables according to an adapted standardised format produced by the EPOC Group. Standardised mean differences (SMDs) with 95% confidence intervals (CIs) were calculated for continuous outcomes (i.e. symptom measures), while relative risks (RRs) with 95% CIs were calculated for binary outcomes (i.e. remission, adherence and response).

Methods of synthesis
How were the studies combined?
In the absence of substantial clinical heterogeneity, the studies were combined using a random-effects meta-analysis to give an overall effect size (either RR or SMD with 95% CIs). The studies were combined to give an overall SMD even though measures were in a variety of scales. Publication bias was assessed using funnel plots.

How were differences between studies investigated?
Statistical heterogeneity was assessed using the chi-squared test. In addition, the authors reported that there was no substantial clinical heterogeneity in terms of the population, underlying conditions and setting. Two subgroup analyses were carried out to assess the effects of age (not reported) and intervention complexity (i.e. complex verses standard interventions).

Results of the review
Thirteen RCTs (n=5,784) were included.

Eight studies were rated as 'good' and five as 'fair'. A mixture of standard and cluster randomised studies were included. Data to control for intra-cluster correlation were not available in most cases.

In terms of publication bias, the funnel plots suggested that there was an absence of very small studies.

Outcome data.
In all cases the outcomes favoured the intervention group over the control group. The authors stated that no significant statistical heterogeneity was detected for any of the main meta-analyses, but this was contradicted by the data presented and reported below. The summary effect size for each outcome is shown below.

Symptom scores after 6 to 12 months were significantly lower for patients receiving care management compared with control (11 studies, n=4,320): SMD -0.40 (95% CI: -0.60, -0.20). Significant statistical heterogeneity was found
Remission was significantly more common in patients receiving case management compared with control (7 studies, n=4,584): RR 1.39 (95% CI: 1.30, 1.48). Significant statistical heterogeneity was found (P<0.00001).

Clinical response was significantly greater for patients receiving case management compared with control (5 studies, n=3,218): RR 1.82 (95% CI: 1.68, 2.05). Significant statistical heterogeneity was found (P<0.0002). Medication adherence was significantly greater for patients receiving case management compared with control (9 studies, n=5,306): RR 1.5 (95% CI: 1.28, 1.86). Significant statistical heterogeneity was found (P<0.00001).

Subgroup analysis according to intervention complexity.

The authors stated that no 'real' difference between 'standard' and 'complex' interventions in terms of symptom scores was found. Three studies (n=869) with 'standard' interventions had a pooled symptom SMD of -0.40 (95% CI -0.64, -0.17) and 7 studies (n=3,093) with 'complex' interventions had a pooled symptom SMD of -0.38 (95% CI: -0.64, -0.110).

**Authors’ conclusions**

Case management is an effective strategy for the management of patients with major depression in primary health care settings. However, the evidence is insufficient to recommend 'complex' case management over 'standard' case management.

**CRD commentary**

This review was based on a clear research question with well-defined, narrow inclusion criteria. The authors contacted experts and searched electronic databases and reference lists to identify studies, but there was little attempt to locate unpublished material. This may suggest a risk of publication bias and, indeed, the authors' funnel plots did suggest an absence of smaller studies. However, the statistical power of such a plot is likely to have been limited given the small number of studies involved. The authors appear to have taken appropriate steps to reduce the risk of bias when assessing the validity of the studies but, since they did not report how many authors selected the studies, the potential for selection bias was unclear. In addition, only one author appears to have abstracted the data for review; this might have increased the risk of reporting bias and errors, despite the use of standardised evidence tables.

The authors stated that no statistical heterogeneity was found for any of the main meta-analyses, but the data presented (and two forest plots) suggested that significant heterogeneity was present. This means that any summary of treatment effect may not accurately represent the results for all studies. The two forest plots (symptoms and adherence) suggested that the direction of treatment effects were similar for all studies, but it was not possible to determine if this also applied to the other meta-analyses. In addition, the authors pointed out the lack of data on intra-cluster correlation, which might have led to an overestimation of effects. The use of one overall measure (SMD) for different symptom scales suggests that caution should be used when interpreting the significance of this assessment. Overall, the findings appear to be in support of the intervention but, given the issues raised in the analyses, some caution is advised. Given the lack of data in other settings and limited evidence of the importance of intervention complexity, the authors’ recommendations for further research are justified.

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

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

Research: The authors stated that further research is required to investigate the effectiveness of case management in other health care systems. In addition further research should investigate the cost-effectiveness of case management and the effect of complexity. Future research should seek to determine the qualifications required for effective case managers, the single most effective element of case management interventions.

**Funding**
German Ministry for Education and Research (BMBF), grant number 01G10302.

**Bibliographic details**

**PubMedID**
16356292

**DOI**
10.1017/S0033291705005568

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Case Management; Depressive Disorder, Major /therapy; Humans; Primary Health Care /methods

**AccessionNumber**
12006003234

**Date bibliographic record published**
31/03/2007

**Date abstract record published**
31/03/2007

**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.