Systematic review of the effects of chronic disease management on quality-of-life in people with chronic obstructive pulmonary disease


CRD summary
This review concluded that data on the efficacy of chronic disease management programmes for improving quality of life in patients with chronic obstructive pulmonary disease are limited, although involvement of primary care may have a positive effect. The authors' conclusions are in line with the evidence presented and seem appropriate in view of the mixed results of the included studies.

Authors' objectives
To evaluate the effect of chronic disease management programmes on quality of life of people with chronic obstructive pulmonary disease (COPD).

Searching
MEDLINE and EMBASE were searched from 1995 to 2006; the search terms were reported. Reference lists of selected studies and relevant reviews were also checked. It appears that only English language papers were sought.

Study selection
Randomised controlled trials (RCTs) comparing quality-of-life outcomes in patients with stable COPD in out-patient chronic disease management programmes and routine care were eligible for the review. Management programmes were required to last at least 8 weeks and include at least one of the following components: multidisciplinary care team; clinical pathway; clinical follow-up; case management; self-management or patient education. The included interventions had between two and five components and most were performed in secondary care settings. The participants in the included studies had an average age in the 60s. Quality of life was assessed using a variety of generic and condition-specific scales, including the Chronic Respiratory Questionnaire (CRQ), St George Respiratory Questionnaire, Short Form-36 and Sickness Impact Profile.

Two reviewers independently selected the studies; any disagreements were resolved by consensus.

Assessment of study quality
Validity was assessed on the basis of: adequate randomisation procedure; allocation concealment; similarity of baseline characteristics; blinding of the patients, care providers and outcome assessors; cointerventions avoided or equal, compliance; withdrawal or drop-out rate; similar timing of the outcome assessment; and intention-to-treat analysis. Studies were given a score out of 11 based on the number of criteria met; studies meeting 6 or more criteria were considered high quality.

The authors did not state how the validity assessment was performed.

Data extraction
Data on quality of life at baseline and after the intervention were extracted using a standardised form. Data were used to identify studies showing statistically significant differences between groups and clinically significant differences from baseline in either group in one or more quality-of-life domains. Missing data were requested from investigators.

The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
A brief narrative synthesis was presented in which statistically significant and clinically significant effects were
discussed separately. Differences between the studies were evident from the text and tables.

**Results of the review**
Ten RCTs (n=868) were included. Six met the criteria for high-quality studies. Follow-up ranged from 2 to 18 months.

Five studies reported a statistically significant difference between groups on one or more quality-of-life-domains. Four of these used the CRQ; two of these reported differences for all four domains, one for the 'fatigue' and 'mastery' domains and one for the 'mastery' domain only. Seven studies found clinically significant differences from baseline in the intervention group; in three of these studies, no such improvement was seen in the control group.

**Authors’ conclusions**
Data on the efficacy of chronic disease management programmes for improving quality of life in patients with COPD are limited. The involvement of primary care seems to have a positive effect.

**CRD commentary**
This review addressed a clear question and the inclusion and exclusion criteria were clear. A broad range of interventions were included. The authors searched two databases and reference lists. In view of the nature of the interventions being evaluated this search appears limited, as relevant studies could be published in sources not covered by the main medical databases. It appears that the search was limited to English language papers and that unpublished studies were not sought, so the review may be at risk of language and publication bias. The validity of the included studies was assessed using appropriate criteria (although blinding is not possible for this type of intervention). Adequate details of the included studies were presented. Appropriate methods were used to minimise errors and bias in the study selection process, but it is not clear whether the same methods were applied to the validity assessment and data extraction. The data were synthesised narratively, which was appropriate in view of the heterogeneity of the included interventions and quality-of-life instruments.

The authors’ overall conclusion is in line with the evidence presented and seems appropriate in view of the mixed results of the included RCTs. The secondary conclusion, about the positive effects of primary care involvement, should be treated with caution because the interventions that involved primary care also had a secondary care component and it is difficult to be certain which components were responsible for the observed effects.

**Implications of the review for practice and research**
Practice: The authors did not state any implications for practice.

Research: The authors stated that research is required to assess the benefits of applying multidisciplinary guidelines involving both primary and secondary care in managing patients with COPD, and that the most effective method of integrating different disciplines and health care systems to deliver care to patients with COPD remains to be determined.

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