Evaluation of self-management interventions for chronic obstructive pulmonary disease

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CRD summary
The authors concluded that there was a tendency for less burden, improved physical condition and health, increased physical and social activity in patients who participated in a chronic obstructive pulmonary disease self-management intervention. The limited size and unclear quality of the evidence base, and gaps in reporting of study outcomes mean that review conclusions may not be reliable.

Authors' objectives
To evaluate the benefits of self-management interventions on the quality of life of patients with chronic obstructive pulmonary disease.

Searching
MEDLINE, EMBASE, PsycINFO, CINAHL and Cochrane Central Register of Controlled Trials (CENTRAL) were searched from 2000 to December 2011 for studies published in English. Searches were completed by consulting reference lists of retrieved papers.

Study selection
Randomised controlled trials (RCTs) that compared self-management programmes with normal care on health-related quality of life and overall quality of life in patients with chronic obstructive pulmonary disease (COPD) were eligible. Pulmonary rehabilitation and cognitive therapy programmes were excluded.

Mean patient age ranged from 61 to 70 years. Rates of male participants ranged from 13 to 69%. Percentage of current smokers ranged from 21% to 62%. Where reported, the mean forced expiratory volume in 1-second (FEV1) ranged from 0.98 to 1.76L and from 54% to 79% of the predicted normal values.

The self-management interventions included patient education, exercises, a self-help book, an individual action plan and discussion therapy. Programmes were delivered on an individual-basis and/or in groups. A range of outcome measurements were used, the most common being the six-minute walk test. Duration and frequency of interventions varied, although all were delivered through multiple sessions. All groups received normal care, which included regular care with follow-up by a chest physician, family physician and/or home-care nurse. The authors did not state how many reviewers selected the studies for inclusion.

Assessment of study quality
The authors did not state that they used a formal tool to assess quality of the studies. The ethical approval for the studies was evaluated. The authors did not state how many reviewers assessed the quality of the studies.

Data extraction
Data on health-related quality of life (symptoms, functional status and general health perception) and quality of life (overall satisfaction with life) and p-values were extracted. Two reviewers independently extracted the data and discussed the content of the studies on multiple occasions.

Methods of synthesis
Results were synthesised narratively using content analysis to categorise the data according to key themes.

Results of the review
Four RCTs (529 patients) were included. Follow-up duration ranged from immediately after the intervention to one year.

The main theme was that self-management interventions improved patient well-being. Three minor themes were identified: 1) self-management interventions reduced the burden on patients; patients were less burdened with breathlessness and less burdened by fatigue and emotional reactions. (2) Self-management interventions improved
patient activity; patients displayed improved physical condition and improved physical and psychosocial activity. 3) Interventions improved total patient health.

Authors' conclusions
There was insufficient evidence to make firm recommendations about the benefits of COPD self-management interventions on patient quality of life. However, this review suggests that there was a tendency for less burden, improved physical condition, increased physical and social activity, and better total health in those patients who participate in a COPD self-management intervention.

CRD commentary
The review addressed a clear question using reproducible selection criteria. Several sources were consulted, although date and language restrictions were applied to the searches. Two reviewers independently extracted the data, which limited the risk of reviewer error and bias. It was unclear whether similar steps were taken during the selection of the studies.

The quality of the included studies was not formally assessed and was therefore unclear. Few studies were included and all were small. Detailed study and patient characteristics were reported. However, results of the studies were only partially reported, making the interpretation of the results difficult. The use of a narrative synthesis was likely to be appropriate given the variety of intervention components and outcome measurements.

Given the limited size and unclear quality of the evidence base as well as gaps in reporting of study outcomes, the review conclusions appear insufficiently cautious and may not be reliable.

Implications of the review for practice and research
Practice: The authors stated that engaging the nurse leadership and nursing management of health services in long-term care was needed to ensure the provision of experience necessary to improve the management of patients with advanced COPD. They stated that facilitating discussion groups and reflection groups could allow nursing management to identify the health needs of patients and their sense of wellbeing and feeling of being supported. They stated that assessment of the past coping methods of patients could also give nurses insight into the health beliefs and patterns of well-being among their patients.

Research: The authors stated that further studies were required to evaluate the benefits of COPD self-management interventions in meta-analyses. Both health-related quality of life and overall quality of life should be evaluated in future studies, and these should evaluate the effects of self-management interventions that address multiple problems, including dyspnoea, anxiety, depression, fatigue, sleeplessness and pain, with disease-specific instruments. They stated that future research should also measure the determinants of behavioural changes.

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