An outpatient multidisciplinary pulmonary rehabilitation program was effective in disabling chronic lung disease

Griffiths TL, Burr ML, Campbell IA, et al. **Results at 1 year of outpatient multidisciplinary pulmonary rehabilitation: a randomised controlled trial.** Lancet. 2000 Jan 29;355:362-8.

QUESTION

What is the effectiveness of an outpatient multidisciplinary pulmonary rehabilitation program in patients with disabling chronic lung disease?

DESIGN

Randomized (allocation concealed*), unblinded,* controlled trial with 1-year follow-up.

SETTING

A teaching and district general hospital in Penarth, Wales, United Kingdom.

PATIENTS

200 patients (mean age 68 y, 60% men) with disabling chronic lung disease (84% with chronic obstructive lung disease) who had an FEV_1 < 60% of the predicted normal rate with < 20% reversibility in response to an inhaled β-agonist. Patients were excluded if they could not walk, had severe sensory or cognitive impairment, or had symptomatic ischemic heart disease. Follow-up was 90%.

INTERVENTION

After stratification by sex and primary nature of lung disease (obstructive or nonobstructive), patients were allocated to a 6-week multidisciplinary pulmonary rehabilitation program (rehabilitation group, $n = 99$) or to standard medical management (control group, $n = 101$). The rehabilitation program used services from occupational therapists, physiotherapists, dietitians, respiratory nurses, and smoking-cessation counselors. It consisted of 18 visits (lasting about 2 h each) that involved exercise and education on pulmonary disease, nutrition, stress management, and medications. At the end of the program, patients were invited to join a patient-run group for social activities and exercise.

MAIN OUTCOME MEASURES

Use of health services, walking ability, and general and disease-specific health status.

MAIN RESULTS

Analysis was by intention to treat. Of the patients who were hospitalized, those in the rehabilitation group had lower mean numbers of admissions (1.7 vs 2.2, $P = 0.048$) and days spent in the hospital (10.4 vs 21.0, $P = 0.022$) than did those in the control group. Patients in the rehabilitation group had a higher mean number of consultations at the general practitioner's office (8.6 vs 7.3, $P = 0.033$) and a lower mean number of general practitioner home visits (1.5 vs 2.8, $P = 0.037$) than did those in the control group. Patients in the rehabilitation group showed greater improvement in walking ability ($P = 0.002$) and general and disease-specific health status ($P < 0.05$) than did those in the control group. Rehabilitation and control groups did not differ for the numbers of patients admitted to the hospital (40 vs 41, $P = 0.98$).

CONCLUSION

An outpatient multidisciplinary pulmonary rehabilitation program decreased the use of health services and improved the general and disease-specific health status of patients with disabling chronic lung disease.

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*See Glossary.

COMMENTARY

In recent years, numerous clinical trials have been done to study the effects of pulmonary rehabilitation. The findings of Griffiths and colleagues are consistent with those from previous studies. For example, a recent study by Guell and colleagues (1) found long-term benefits with outpatient rehabilitation. A salient contrast between these 2 studies was that Guell and colleagues' program did not emphasize patient education, whereas Griffiths and colleagues' program devoted one third of the time to education. However, studies that tested the effects of educational interventions for pulmonary rehabilitation have not found benefits (2, 3).

Griffiths and colleagues did a methodologically sound trial that provides additional support for pulmonary rehabilitation as an effective clinical intervention for chronic obstructive pulmonary disease. The program was outpatient-based, so the cost should be lower than that of inpatient programs. The authors intend to follow up with an economic analysis of this trial, which will add further important information. Although long-term benefits were found, the differences between control and intervention groups diminished over the 1-year interval. In view of this finding, studies that examine strategies for prolonging the benefits of pulmonary rehabilitation are warranted. Finally, because educational interventions have shown no measurable benefits, researchers should scrutinize the design of educational-intervention studies. Inadequate instructional design could have caused the lack of effect of educational interventions.

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References

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