Journal of Physiotherapy 61 (2015) 94

Journal of PHYSIOTHERAPY

journal homepage: www.elsevier.com/locate/jphys

Appraisal

Critically Appraised Papers

Adding a structured education intervention to a program of exercise training may not benefit people with chronic obstructive pulmonary disease

Synopsis

Summary of: Blackstock FC, Webster KE, McDonald CF, Hill CJ. Comparable improvements achieved in chronic obstructive pulmonary disease through pulmonary rehabilitation with and without a structured educational intervention: a randomized controlled trial. *Respirology* 2014;19:193-202.

Question: In people with chronic obstructive pulmonary disease, what effect does adding disease-specific group education to supervised exercise training have on health outcomes? ***Design***: Randomised, controlled trial with concealed allocation and blinding of the outcome assessor. ***Setting***: An outpatient department of a tertiary hospital in Melbourne, Australia. ***Participants***: Adults with stable chronic obstructive pulmonary disease were included if they reported dyspnoea with daily activities and were referred for pulmonary rehabilitation. Exclusion criteria were any condition that compromised the capacity to learn, presence of comorbid conditions that limited ability to exercise, or participation in pulmonary rehabilitation in the previous 2 years. Randomisation allocated 141 and 126 to the intervention and control groups, respectively. ***Interventions***: Participants in both groups attended twice-weekly supervised exercise training for 8 weeks. Each exercise session comprised endurance training (walking and cycling) as well as upper and lower body resistance exercises. Those in the intervention group also completed 16 face-to-face group education sessions, each of 45 minutes in duration. These sessions were facilitated by members of a multidisciplinary team and included the development of behaviour-specific action plans. ***Outcome measures***: The primary outcomes were health-related quality of life, measured using the Chronic Respiratory Disease Questionnaire, and functional exercise capacity, measured with the 6-minute walk distance. Other outcomes included functional limitation due to dyspnoea, functional activity via the grocery shelving task, self-efficacy and healthcare usage. Outcomes were evaluated at program completion as well as 6 and 12 months later. ***Results***: A total of 149 participants completed the study. Considering all assessment time points, there were no between-group differences in any domain of the Chronic Respiratory Disease Questionnaire (overall mean difference for dyspnoea domain was –0.9 points per item, 95% CI –2.0 to 0.7) or the 6-minute walk distance (–16 m, 95% CI –9 to 42). Likewise, with the exception of a small difference in health-related quality of life, measured via the Assessment of Quality of Life Questionnaire (in favour of the control group), there were no between-group differences for any other outcome measure collected at any time. ***Conclusion***: In people with stable chronic obstructive pulmonary disease who have been referred to pulmonary rehabilitation, the addition of a structured education program produced no benefit over and above a program of supervised exercise training.

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http://dx.doi.org/10.1016/j.jphys.2015.02.003

Commentary

The current definition of pulmonary rehabilitation from the American Thoracic Society/European Respiratory Society Statement highlights the importance of education and behaviour change in the management of people with chronic obstructive pulmonary disease (COPD).[1] The study by Blackstock and colleagues was a large well-designed trial with a low risk of bias (PEDro score 7/10). While the dropout rate of 26% reduced the trial quality, it is unlikely that any long-term trial in this chronic disease population will achieve low dropout rates. Importantly, the outcomes of hospitalisation and healthcare utilisation were unaffected by dropout, due to the ability to source data on all participants.

The findings that both groups improved exercise capacity and quality of life, and reduced hospital admissions and healthcare utilisation, with no between-group differences, casts doubt on the need to include a formal education program during pulmonary rehabilitation, even when elements of behaviour change are included. The clinical implications are that people involved in pulmonary rehabilitation programs that are unable to offer a distinct education and behavioural change component will not be disadvantaged in terms of major outcomes. However, it is important to note that both groups in the study had access to experienced health professionals through the exercise training program, which may be the key to the improvements in both groups – an improvement that could not be further increased by the addition of an education component.

Achieving behaviour change in chronic disease is complex and currently there is only limited evidence that behaviour change interventions can improve health outcomes in COPD.[2] There is still a need to find the 'holy grail' in terms of an effective behaviour change intervention to enable long-term adherence to exercise and positive health behavioural in people with COPD, and for appropriate measures to detect these outcomes.

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References

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2. Zwerink M, et al. *Cochrane Database Syst Rev.* 2014;19:CD002990.

http://dx.doi.org/10.1016/j.jphys.2015.02.002

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