

CAHE JC Critically Appraised Article Summary

Journal Club Details

Date of submission	March 2009
Journal Club location	Southern Therapy Service
JC Facilitator	Edgar Barsamian
JC Discipline/s	Multi-disciplinary

Clinical Scenario

What is the effect of home-based progressive resistance exercise program in patients diagnosed with chronic obstructive pulmonary disease in terms of impairments, activity limitations and participation restrictions?

Review Question/PICO/PACO

- P** Patients with chronic obstructive pulmonary disease
- I** Home-based progressive resistance exercise program
- C** No exercise
- O** strength, ADL's and other activities

Article/Paper

O'Shea SD, Taylor NF, Paratz JD. A predominantly home-based progressive resistance exercise program increases knee extensor strength in the short-term in people with chronic obstructive pulmonary disease. *Australian Journal of Physiotherapy* 2007; 53: 229-237.

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Article Methodology:	Randomised controlled trial
Returned JC on:	13 March 2009
By CAHE staff member:	Lucylynn Lizarondo

Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>The study asked a clearly focused question.</p> <p><i>Participants:</i> Patients diagnosed with chronic obstructive pulmonary disease (COPD); no pulmonary rehabilitation in the previous 12 months; excluded were those with history of respiratory conditions other than COPD or unstable medical condition</p> <p><i>Intervention:</i> Progressive resistance exercise program consisting of six exercises 3 times per week for 12 weeks</p> <p><i>Outcomes:</i></p> <ul style="list-style-type: none"> A. Impairments – as measured by strength and scores in the Chronic Respiratory Disease Questionnaire B. Activity Limitation – measured by 6-minute walk test; Timed-Up and Go Test; scores in Grocery Shelving Test; Patient-specific Functional Scale C. Participation Restriction – London Handicap Scale
2	✓			<p>The study was a randomised controlled trial, which is an appropriate approach for examining effectiveness of an intervention.</p> <p>Is it worth continuing? YES</p>
3	✓			<p>Participants were randomly allocated via block randomisation, to one of two groups – progressive resistive exercise or control. The groups were well-matched at baseline, which may indicate that randomisation was successful.</p>
4	✓			<p>The study reported that all measurements were undertaken by an independent, blinded assessor. Participants and therapists who gave instructions on the exercises were not blinded but this did not seem to affect the results.</p>
5	✓			<p>The authors used an intention-to-treat analysis and described in detail the characteristics of those who dropped out of the study. Inasmuch as the authors have explained the effects of the drop-outs, the large number of participants who were unable to complete the intervention/or lost to follow-up may have increased the likelihood of Type II statistical error for some outcomes.</p>
6	✓			<p>Outcomes were measured and collected in the same way and in the same time period for all patients in both groups.</p>
7	✓			<p>Power calculation was carried out so that the sample size used in the study was adequate.</p>



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Ques No.	Yes	Can't Tell	No	Comments
8				<p>Results were presented using means, SDs, p-values and confidence intervals.</p> <p><i>Bottom line result:</i></p> <p>A 12-week home-based progressive resistance exercise program resulted to modest, short-term improvements in knee-extensor strength in people with COPD, but this did not carry over to improvements in activity and participation.</p>
9				<p>P-values and confidence intervals were computed, so that results can be considered precise.</p>
10				<p>The most important patient outcomes were considered.</p> <p>Whilst the study has good methodological quality and several strengths, the large number of participants who were unable to complete the program or lost to follow up may have introduced bias in the results. Although it appeared that the exercise program was feasible with very minimal adverse effects, the exact implementation of the exercise to improve adherence of patients requires a great deal of consideration.</p>