

Minimal versus specialist equipment for the delivery of pulmonary rehabilitation in COPD

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Abstract

Background: Evidence for pulmonary rehabilitation (PR) largely comes from trials where the intervention used specialist aerobic and/or resistance equipment. Limited data exist to demonstrate the efficacy of PR in community settings with minimal equipment.

Aims: To compare completion rates and outcomes in COPD patients undergoing PR in a community setting with minimal equipment (PR-min) with a matched sample undergoing PR in a gym setting with specialist aerobic and resistance equipment (PR-gym).

Methods: Using propensity score matching, 318 patients with COPD referred for 8 weeks of PR-min were matched 1:1 with a control group of 318 patients who undertook 8 weeks of PR-gym. Completion rate (attendance \geq 8 supervised sessions) and changes in incremental shuttle walk (ISW), Chronic Respiratory Disease Questionnaire (CRQ) and quadriceps maximal voluntary contraction (QMVC) were compared.

Results: Groups were matched for age (70.8 v 70.7 years), FEV1% predicted (46.8 v 45.8), ISW (192 v 195 m), % current smoking status (19 v 20) and depression scores (6.5 v 6.6). No between group differences were seen in ISW, CRQ or QMVC change. Completion rates were better in the PR-gym (73%) as opposed to the PR-min (64%); $p=0.01$.

	PR-min (n=202)	PR-gym (n=231)	p-value
Change	Mean (SD)		
ISW (m)	56.6 (62.7)	59.7 (67.9)	0.3
Number of patients that achieved MCID of ISW (n)%	107 (54%)	118 (52%)	0.6
CRQ Dyspnoea	5.9 (6.4)	4.2 (6.3)	0.5
CRQ Fatigue	2.8 (4.4)	3.0 (4.9)	0.2
CRQ Emotion	4.3 (7.7)	4.3 (7.7)	0.8
CRQ Mastery	2.6 (4.8)	3.0 (5.4)	0.1

CRQ Total	15.5(18.6)	14.6(19.3)	0.4
Peak QMVC(kg)	1.7(5.2)	2.3(5.0)	0.6

Between group change

Conclusion: This case-control study shows that PR-min had similar benefits to PR-gym. A randomised non-inferiority trial is needed to confirm the findings of this study.

- COPD - management
- Rehabilitation
- Exercise

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