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## Benefits of pulmonary rehabilitation in low compared to high-resource settings in COPD

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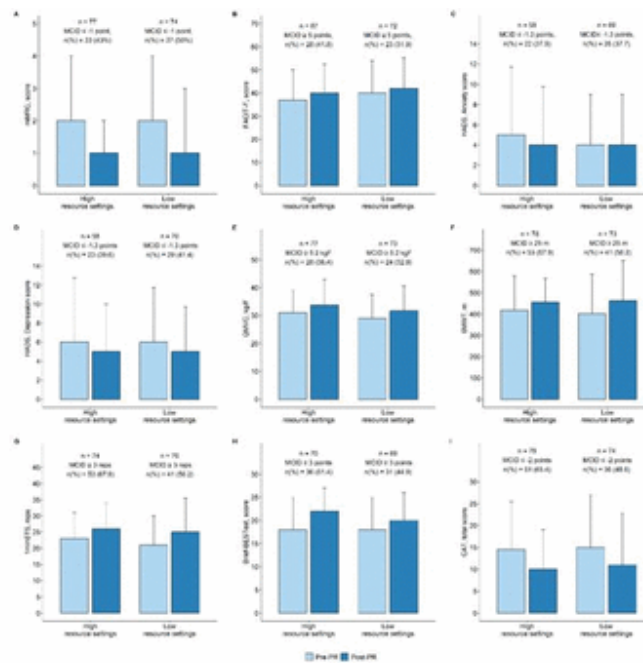
### Abstract

It is uncertain if pulmonary rehabilitation (PR) delivered in low-resource settings is as beneficial as in high-resource settings and can be considered to increase access. We compared the effects of PR delivered in low versus high-resource settings in people with chronic obstructive pulmonary disease (COPD).

12-week community-based PR programmes were conducted in one high (i.e., specialized centre) and five low-resource (i.e., primary care centres with limited equipment, facilities) settings. Symptoms (modified medical research council dyspnoea scale, functional assessment of chronic illness therapy–fatigue, hospital anxiety and depression scale), quadriceps maximum voluntary contraction, functional exercise capacity (6-minute walk test, 1-minute sit-to-stand test), balance (Brief-Balance Evaluation Systems Test) and health status (COPD assessment test) were assessed pre-post PR. Comparisons within and between groups were explored with (non-) parametric mixed ANOVAs.

164 people with COPD (69±9yrs; 23% female; FEV1 53[38; 67]% predicted) participated, 83 in low- and 81 in high-resource settings. After PR, improvements were significant for all outcomes in both settings ( $p < 0.05$ ) (**Fig. 1**). No group-by-time interaction or between-group differences were observed ( $p > 0.05$ ).

PR in low-resource settings provides similar benefits to high-resource settings and is important to be considered to increase access to this fundamental intervention.



**Fig.1** Comparison of results obtained with 12 weeks community-based pulmonary rehabilitation programmes conducted in high and in low-resource settings with people with chronic obstructive pulmonary disease (COPD). A) modified medical research council dyspnoea scale (mMRC); B) functional assessment of chronic illness therapy-fatigue (FACIT-F); C) hospital anxiety and depression scale – Anxiety score (HADS, Anxiety); D) hospital anxiety and depression scale – Depression score (HADS, Depression); E) quadriceps maximal voluntary contraction (QMVC); F) 6-minute walk test (6MWT); G) 1-minute sit-to-stand test (1minSTS); H) Brief-Balance Evaluation Systems Test (Brief-BESTest); I) COPD assessment test (CAT). Mean and standard deviation or median and interquartile ranges are presented as appropriate in light blue bars for baseline data (Pre-PR) and in medium blue bars for post pulmonary rehabilitation data (Post-PR). Number of participants for whom data was available is presented on top of the bars as well as the number of responders according to the minimal clinically important difference (MCID) established for each outcome measure.

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COPD    Physiotherapy care    Personalised medicine

## Footnotes

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