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Clinical effectiveness and models of pulmonary rehabilitation in low-resource-settings: a systematic review

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Background: The increasing disability, reduced productivity, associated anxiety and depression from chronic respiratory diseases (CRDs) result in social isolation and economic hardship for patients and their families. Pulmonary rehabilitation (PR) is a guideline-recommended multidisciplinary and multifaceted intervention that improves the physical and psychological condition of people with CRD. However, PR services are under-provided and uptake is poor in the low-resource settings of low- and middle-income countries.

Aim: We aimed to review the effectiveness, components and mode of delivery of PR in low-resource settings.

Method: We systematically searched MEDLINE, EMBASE, CABI, AMED, PUBMED and CENTRAL from 1990 for clinical trials of adults with CRD (including but not restricted to COPD) comparing PR with usual care in low-resource settings. After a duplicate selection process, we extracted data on exercise tolerance and quality of life (QoL); component and mode of delivery and analysed using a narrative synthesis.

Results: From 7355 hits we included 16 studies. PR improved exercise tolerance significantly in all the studies and quality of life in 15. In addition to exercise training, most PR services included education and breath retaining technique; some included airway clearance, energy conservation, controlled coughing technique, psychosocial rehabilitation and a few also included coping symptoms, self-management, lifestyle modification, and inhalation technique. Low-cost services were typically home-based or delivered in outpatient departments usually over 8-12 weeks. Common barriers in effective PR were lack of multi-professional teams and lack of demand from patients.

Conclusion: PR can be delivered effectively in low resource settings by incorporating multifaceted components and employing a range of modes of delivery. However, there is a major need to raise awareness amongst professionals and patients to improve availability and access to PR.

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References & Clinical Trial Registry Information

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