Interventions to improve referral, uptake and adherence to Pulmonary Rehabilitation for patients with Chronic Obstructive Pulmonary Disease: A systematic review

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BACKGROUND

- COPD is a common and debilitating respiratory disease [(1)], ranked 4th worldwide in DALYs for >50's [(2)]
- Pulmonary rehabilitation (PR) is an effective internationally recommended treatment for COPD, improving physical and psychological outcomes [(3)], however referral, uptake and adherence are universally poor

AIM

- To determine the effectiveness of interventions to increase patient referral, uptake, and adherence to pulmonary rehabilitation (PR) programmes for patients with COPD.

METHODS

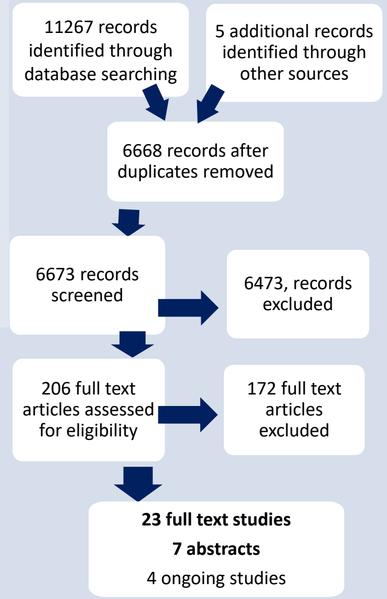
- Literature searches were conducted across a wide range of databases, with no language restrictions up to 31st August 2021.
- Any study design was included where interventions were implemented as a coordinated set of activities that aimed to increase referral, uptake and/or adherence to PR; targeting health care providers, patients with COPD and/or patients/carers/family members of COPD patients.
- Studies comparing different settings or timings of PR programmes were excluded.
- Two reviewers independently screened titles, abstracts and full text papers, extracted data and critically appraised studies using Cochrane Risk of Bias and ROBINS-I tools. Narrative synthesis was undertaken as there was large heterogeneity across interventions, settings and population groups.

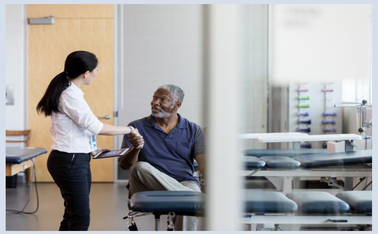
REFERENCES

1. Roth G,A, et al. Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 2018;392(10159):1736-88.
2. Vos T, et al. Global burden of 369 diseases and injuries 204 countries and territories, 1990–2019: a systematic analysis for the Global B urden of Disease Study 2019. The Lancet. 2020;396(10258):1204-22.
3. Global strategy for the diagnosis, management and prevention of chronic obstructive pulmonary disease, 2022.

RESULTS

Figure 1: PRISMA Diagram





We included: 23 full text studies: 2 cluster RCTs, 4 RCTs, 1 quasi-randomised trial, 2 controlled trials with non-randomised concurrent comparator (CCT), 16 studies with pre-post design, 3 uncontrolled feasibility studies, 2 uncontrolled studies.

Interventions were tested across primary and secondary care and were targeted to patients, health care practitioners or both. Methodological quality of most studies was weak and risk of bias frequently high.

Table 1: effective interventions

Referral (total studies n= 19): Primary Care	Secondary Care
Primary care interventions included a CCT of patient held score cards of evidence-based care, which increased PR referral by 7.3% compared to 1.3% at 3 months (p-0.03). Primary care quality improvement interventions including screen prompts and/or staff education increased referral rates by 3-39%.	Most interventions focused on increasing education and HCP awareness of PR, use of checklists and discharge bundles reporting referral increases between 5-54% in pre-post studies. A national quality improvement activity in Denmark implemented evidence-based care with hospital level performance indicators increasing the offer of a referral to PR from 55% to 91% over 3 years.
Uptake (total studies n=7): Primary Care	**Secondary Care**
A cluster RCT of COPD nurse home visits with individualised care plan increased uptake to 31% compared to 10% in usual care (p=0.002).	One pre-post study of doctor education and patient information increased PR uptake from 58% to 82% (P<0.001).
Adherence (total studies n=7)	
One secondary care-based RCT of CBT alongside PR for people with anxiety and or depression increased session adherence; 14 (sd 1.7) compared to 12.4 in comparator (sd 2.6).	

CONCLUSIONS

- Interventions incorporating partnership working between patients and HCPs appeared to increase referral, uptake and adherence rates with greater effectiveness than those that targeted single populations.
- Collaborative working, increasing knowledge and empowering HCPs and patients may be important strategies.
- There is a need for further well-designed trials.