EDITORIAL

Pulmonary rehabilitation in the management of COPD: more than one way to skin a cat

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Although the origin of the idiom "more than one way to skin a cat" predates Mark Twain's use in *A Connecticut Yankee in King Arthur's Court*,¹ we like Twain's contention that ingenuity is the most important human attribute. We will need an abundance of that ingenuity and resourcefulness if we are to address successfully the looming problems of smoking-related diseases. Currently, chronic obstructive pulmonary disease (COPD) is a leading cause of morbidity, affecting 65 million individuals worldwide.^{2,3} Deaths due to COPD exceed 3 million annually, representing 5% of all deaths.² It has a major economic impact particularly in those of working age.⁴ Perhaps most troubling is that COPD prevalence is expected to rise due to continued exposures to risk factors such as tobacco and biomass fuel exposure and an ageing population,³ at the same time as there is a worldwide shortage of physicians.⁵

There is increasing optimism for patients with COPD, however, in that the effects of the disease can be improved by appropriate pharmacological and non-pharmacological interventions. Pulmonary rehabilitation (PR) is one such intervention. The effectiveness of PR is well established, since evidence suggests that comprehensive and intensive PR programmes produce improvement in symptoms, physical functioning,^{2,6-8} and health relation quality of life (HRQoL),^{6,7} in patients with both stable⁷ and unstable⁸ COPD.

Many national and international COPD guidelines including The Global Obstructive Lung Disease (GOLD)² and American Thoracic Society (ATS) guidelines⁹ emphasise that PR should be an integral part of the treatment plan as functional limitation occurs with chronic lung disease including COPD. In the UK, the National Institute for Health and Clinical Excellence (NICE) Quality standard for COPD now states that 'People with COPD meeting appropriate criteria [should be] offered an effective, timely and accessible multidisciplinary pulmonary rehabilitation programme'.¹⁰

However, access to PR services remains limited due to low referral rates and long waiting lists. In fact, two studies have demonstrated that as few as 1-2% of patients who may benefit from PR have access to a programme.^{11,12} Initially, clinicians and providers were reluctant to refer eligible patients to PR, prematurely characterising PR services as ineffective because PR did not improve objective measures of lung function or oxygenation. Later, when improvements in symptoms, physical capacity, and HRQoL were clearly established, there were too few programmes to meet the needs of a growing population – in part, because they were deemed too costly, too time-consuming, and/or too labour-intensive. Currently, long waiting times are the norm as patients clamour to enrol in programmes of 3-4 weeks duration that have demonstrated improvements in COPD morbidity and mortality.^{7,8} Poor access is an on-going impediment to the widespread use of PR, and it is a global issue.^{13,14} If the health status of patients with COPD is to be improved, the problem of accessibility to this valuable intervention needs to be solved. Several strategies have been used to address this problem, and a variety of delivery routes have been tried and tested, including in-patient hospital-based, community-based, and home-based programmes.^{7,8}

In this issue of the *PCRJ*, we now have the findings of Zakrisson and colleagues¹⁵ who have shown that there truly is "more than one way to skin a cat". These authors moved PR

out of its traditional hospital-, community-, or home-based setting and placed it within the already existing structure of a nurse-managed COPD programme in primary care clinics. This allowed primary care specialists to extend services to a population they were already managing, while remaining faithful to the tenets of a PR programme: brief but not too short to be ineffective (6 weeks), intense but not too burdensome for the staff or patients (twice-weekly one-hour sessions of education or supervised exercise), while being 'resource-smart' by using a smaller group of multidisciplinary professionals to deliver the components of the programme for which they were particularly well-trained.

One of the primary outcomes achieved by this nurse-managed programme was a reduction in the exacerbation frequency in the intervention group, which has both short- and long-term benefits for the patient. In the short-term, an averted exacerbation preserves functional capacity and quality of life. Over time, fewer exacerbations translate to longer life expectancy.¹⁶

However it was disappointing that there appeared to be no significant improvement in functional capacity and HRQoL between the intervention and control groups. One would have thought that if exacerbations were reduced then so would the other two parameters. How to explain this? The authors note that subjects were relatively healthy and reported high HRQoL at enrolment, which may have created a ceiling effect. Alternatively, the authors suggest that the performance of the 6-minute walk test (6MWT), or counselling following the test, may have motivated subjects in the control arm to initiate an exercise programme. Subjects' desire to please the researcher by performing better at the follow-up assessments may provide yet another explanation for these findings. In addition, it is possible that functional capacity and HRQoL might be more sensitive to the 'dose' of the intervention, particularly in brief programmes. In this study, eight subjects missed 1-2 sessions, therefore receiving less than the full-dose of the PR programme. Lastly, not all subjects were able to perform the 6MWT at one year. Inherent differences in the two groups may have emerged at the time of reassessment that were not present at enrolment.

Importantly, the opportunity to offer different pulmonary rehabilitation settings tailored to individual needs should improve accessibility to, and acceptability of, this effective intervention. The success and wider roll-out of such programmes utilising existing staff will be largely dependent on access to well-trained health care professionals. Nurses, by virtue of their training and education, are particularly well-suited to support individuals with chronic illness. This study provides evidence that innovative approaches can remove obstacles to chronic disease management, thus offering a viable alternative to meet a growing public health crisis.

Conflicts of interest

MG has received honoraria for speakers' bureaus – Merck, Pharmaxis, Sunovion; and honoraria for advisory board – Teva.

MF declares that she has no conflicts of interest in relation to this article.

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