Patient Education Provided by Physiotherapists for Patients with Chronic Obstructive Pulmonary Disease: Results of a Scoping Review

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ABSTRACT

Purpose: Physiotherapists have been acknowledged as playing a vital role in the care of people living with chronic obstructive pulmonary disease (COPD), and this care includes providing patient education (PE). Yet very little is known about the issues critical to providing this PE. The purpose of this scoping review was to identify and map out the current knowledge about the content, processes, and overall effectiveness of the PE provided by physiotherapists for people living with COPD. **Method:** Using the guidelines developed by Arksey and O'Malley in 2005 and by Levac in 2010, key databases were searched. A total of 447 articles were identified and screened for the following inclusion criteria: adults living with COPD, published in English or French between 1995 and 2015, and describing the PE provided by physiotherapists. Fourteen studies matched these criteria. **Results:** In the majority of studies, both physiotherapists and nurses provided PE to patients. Common PE topics included energy conservation, exacerbations, and breathlessness. None of the studies included measures for evaluating the effectiveness of the PE. **Conclusions:** Even though physiotherapists routinely provide PE to people living with COPD, this PE varies substantially. The heterogeneity of the studies and lack of measures of effectiveness prevented them from providing any evidence-based recommendations for physiotherapists.

Key Words: education; patient education; chronic obstructive pulmonary disease.

RÉSUMÉ

Objectif : les physiothérapeutes sont reconnus pour leur rôle capital dans les soins aux personnes qui sont atteintes d'une maladie pulmonaire obstructive chronique (MPOC), ce qui inclut l'éducation aux patients (ÉP). On ne sait pourtant pas grand-chose des enjeux essentiels à la prestation de cette ÉP. La présente analyse de portée visait à cerner et à schématiser les connaissances sur le contenu, les processus et l'efficacité globale de l'ÉP que transmettent les physiothérapeutes aux personnes atteintes d'une MPOC. **Méthodologie :** à l'aide des lignes directrices d'Arksey et O'Malley (2005) et de Levac (2010), les chercheurs ont exploré les principales bases de données. Au total, ils ont extrait et examiné 447 articles afin de déterminer s'ils respectaient les critères d'inclusion : adultes atteints d'une MPOC, publication en français ou en anglais entre 1995 et 2015, description de l'ÉP fournie par les physiothérapeutes. Quatorze études respectaient ces critères. **Résultats :** dans la majorité des études, tant les physiothérapeutes que les infirmières offraient de l'ÉP aux patients. Les thèmes courants incluaient la conservation de l'énergie, les exacerbations et l'essoufflement. Aucune étude ne comportait de mesures pour évaluer l'efficacité de l'ÉP. **Conclusions :** même si les physiothérapeutes offrent systématiquement de l'ÉP aux personnes atteintes d'une MPOC, cette éducation est extrêmement variable. À cause de l'hétérogénéité des études et de l'absence de mesures d'efficacité, les études ne pouvaient fournir de recommandations fondées sur des données probantes aux physiothérapeutes.

Chronic obstructive pulmonary disease (COPD) was responsible for 4.4% of all deaths in Canada in 2011.¹ It is the leading cause of hospital admissions, with 18% of patients being readmitted once within a year, and 14% being readmitted to hospital twice in the same year.² As a result of the chronic nature of the disease and the

burden it places on the health care system, patient education (PE) interventions have become key components of treatment of people with COPD.^{3–11}

International guidelines have recommended that the content of PE be customized to the patient and be based on the severity of the COPD; the goal of PE is to advance

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the patient's knowledge of the disease, promote healthy habits, and ensure and promote adherence to medication.^{3,6,7} Also, systematic reviews have suggested that PE should help the patient to recognize and manage exacerbations by effectively using problem-solving skills, decision making, and health resources. These suggested PE interventions frequently incorporate tools and concepts of self-efficacy,^{9,10,12–16} and they are often provided by a member of a health care team, including a physiotherapist, as part of an overall pulmonary rehabilitation programme.¹⁰

Physiotherapists in particular have been recognized as playing an important role in managing patients with respiratory disease, and, along with nurses and physicians, they are the type of practitioner most often involved in these pulmonary rehabilitation programmes for patients with COPD.^{9,17} However, physiotherapists not only see people with COPD in pulmonary rehabilitation programmes, they also interact with them across all health care settings, and they spend a substantial amount of time with each patient. The time physiotherapists spend with patients mean that they are ideally placed to discuss their condition with them and to provide them with PE on issues of health promotion, function, and secondary prevention.^{17–19}

As noted, physiotherapists provide PE to patients and their families in all parts of the health care system, in different clinical settings, and along the health–disease continuum, from health promotion and prevention, diagnosis, preoperative and postoperative care, intensive care, and rehabilitation programmes through end-of-life care.²⁰ Yet although PE is something that physiotherapists routinely do every day, it is a very complex intervention—one that has multiple components. This may be one of the reasons why the research about PE and physiotherapists has been so limited. The research that has been done has found that physiotherapists think of PE as an integral and extensive component of practice;²¹ it has also been reported that physiotherapists believe that PE is physical therapy and that, through PE, they can steer patients toward optimal self-management, health, and function.²² However, none of these studies was conducted with physiotherapists working with people with COPD.

Although there is consensus in the literature that PE is important, given that physiotherapists routinely provide PE to people with COPD, very little is known about the actual content and processes of this provision and its overall effectiveness. A systematic review by Stoilkova and colleagues⁹ reviewed PE programmes in current COPD management interventions but did not look specifically at the components of PE or physiotherapists' role in providing it. Having a better understanding of what is currently known about the PE delivered by physiotherapists, and its effectiveness, will help physiotherapists better plan and provide PE interventions to people with COPD. This will, we hope, help people living with COPD

and help delineate the unique and valuable role that physiotherapists play in providing PE on a health care team.

Scoping reviews are similar to systematic reviews in that they highlight and integrate the existing information in a field to summarize the research findings, identify gaps in the research, and make recommendations for future research.^{18,23} One of the key differences between a scoping review and a systematic review is that systematic reviews often, but not always, include only randomized controlled trials (RCTs) in their inclusion criteria; this was the case with the systematic review by Stoilkova and colleagues,⁹ for example. A scoping review, however, is a methodology that captures not only RCTs but also other types of studies that are used; it addresses broad inquiries, and this is appropriate when the field of study is very diverse, such as PE.^{23–25}

The purpose of this scoping review was to identify and map out current knowledge of the content, processes, and overall effectiveness of the PE provided by physiotherapists for people living with COPD.

METHODS

The scoping review was carried out using the guidelines developed by Arksey and O'Malley²⁴ and further defined by Levac and colleagues.²⁵

Identifying the research questions

The specific research questions were as follows:

1. What is the content of the PE provided by physiotherapists for people living with COPD—that is, what topics are covered?
2. What processes or methods do physiotherapists use when providing PE to people living with COPD—that is, who delivers PE and where, when, why, and how?
3. What is known about the effectiveness of the PE provided by physiotherapists to people living with COPD?

Identifying relevant studies

Working with a research librarian, we undertook a literature search to identify studies describing the PE provided by a physiotherapist for patients with COPD. One of the main concerns about research into PE is the heterogeneity of the definitions.²⁰ As a result, we chose a very large, encompassing definition to guide the scoping review: PE is the “delivery of education on topics related to COPD with the aim of improving the knowledge and understanding of COPD.”²⁶ (p.704)

Our inclusion criteria were as follows: studies of adults (aged 18 years or older) living with COPD in any health care setting, including the acute care setting. Articles could have been published in English or French between 1995 and 2015. The PE must have been provided by a physiotherapist and had to be described in detail; it had

to include the content of the PE—that is, what topics were addressed—and the different processes of the PE intervention—who delivered it and where, when, why, and how it was delivered. The PE could have been provided through a pulmonary rehabilitation programme or not, as long as it met these requirements. Studies could use any type of research design, such as quantitative, qualitative, or mixed methods. Exclusion criteria consisted of participants aged younger than 18 years, PE provided solely by other health care professionals, articles written in languages other than English and French, and editorials and commentaries.

The CINAHL, Education Source, EMBASE, Medline, PEDro, and PsycINFO databases were searched with the help of a research librarian, using keywords formulated for each database that related to the three main concepts of physiotherapy, COPD, and PE—for example, PE keywords such as *health education*, *patient care*, *health communication*, and *health behaviour*. A total of 447 articles were identified that met the inclusion and exclusion criteria: 41 articles from CINAHL, 8 articles from Education Source, 292 articles from EMBASE, 86 articles from Medline, 18 articles from PEDro, and 2 articles from PsycINFO. Duplicates (69 articles) were removed using RefWorks Web-based reference management software (ProQuest, Ann Arbor, MI), resulting in 378 articles. Please see Figure 1 for a flow diagram of the process that was used to select the relevant studies.

Selecting the studies

Three reviewers (ST, MJC, DG) divided up the final 378 articles and reviewed their titles and abstracts, taking into consideration the inclusion and exclusion criteria. If one reviewer was not sure whether an article should be included or excluded, it was reviewed by a second reviewer. This process resulted in 160 articles being included for full-article review. After all 160 articles had been retrieved, they were divided alphabetically among the three reviewers, and each full article was read and reviewed against the inclusion and exclusion criteria. If one reviewer was not sure whether an article should be included or excluded, a second reviewer reviewed it, and a consensus was reached.

Charting the data

A data extraction form was designed to chart the data; it included a table divided into predetermined categories that linked with the purpose and research questions of the scoping review. This table captured data from each article on the content of the PE (what it consisted of) and on the processes of delivery (who, where, when, why, and how). Any information documented by the authors about the use of outcome measures to assess the effectiveness of the PE was recorded during the data extraction phase.

RESULTS

Collating, summarizing, and reporting the results

The data extraction information was collated and summarized, and the results were reported using the same framework we had established for the purpose and research questions and for the data extraction form. We were also interested in any information about the use of measures to determine the effectiveness of the PE.

Studies' general characteristics

A total of 14 articles were included in the scoping review. Of these, 11 came from the databases searched,^{27–37} and the other 3^{4,38,39} had been cited by at least 1 of the 160 articles reviewed and matched the inclusion criteria. (Please see the online Appendix for complete summaries of the included articles.) Most of the articles (13 of 14) were published in 2000 or later. Interestingly, 6 articles described the same study data, with different analyses and outcome measures.^{27–32} There were seven different study designs:^{27–32,38} one single-centre RCT,³⁹ one multi-centre RCT,⁴ one single-blinded RCT,³⁵ one RCT with repeated measures,³⁶ and one prospective, parallel-group, single-blind RCT.³³ In addition, one study was a retrospective study,³⁴ and another was a prospective longitudinal cohort study.³⁷

What—education topics

All 14 studies described multiple PE topics. The number of education topics varied between 5 and 13, with a median of 5.5. The eight most common topics were breathing techniques (12), stress management and relaxation techniques (12), exercise (10), medications (7), basic pathophysiology and knowledge of COPD (6), rest positions (6), chest clearance (5), and nutrition and diet (5). Other less frequently described education topics were smoking cessation (4), exacerbation management (4), energy conservation (3), work simplification techniques and use of adaptive aids (2), managing emotions (2), travelling (2), sleep (2), adapting to a chronic illness and psychosocial factors (1), relationships (1), infection prevention (1), sexuality (1), family identity and development (1), fall prevention (1), communication of feelings (1), and ritualization (1).

Who

Physiotherapists

As per our inclusion criteria, all studies identified a physiotherapist being involved in delivering PE, although other practitioners were also involved. In the majority of studies (12 of 14), nurses were also involved, and 1 study³⁶ did not identify the other health care professionals involved. In 1 study, PE was provided only by a physiotherapist, nurse, or both,³³ whereas in all of the other studies, three or more health care professionals were involved: dietitians,^{34,37,39} a gerontologist,³⁵

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of the process used to select the relevant studies.

a medical doctor,^{27–32} occupational therapists,^{38,39} pharmacists,^{27–32,39} a psychologist,³⁵ respiratory doctors or pneumonologists,^{34,39} smoking cessation advisors,^{36,39} respiratory therapists,⁴ a social worker,^{37,39} and a lay member of a patients' group.³⁹ Only 1 study identified the physiotherapist as a respiratory physiotherapist.³⁷

Patients

Half of the studies focused solely on patients with COPD,^{4,34–39} and the other half described patients with

other chronic lung diseases, such as chronic asthma,^{27–33} bronchiectasis,³³ and interstitial lung disease, in addition to patients with COPD.³³ The severity of patients' COPD varied among the studies. Patients were reported as having mild to moderate COPD in the Gallefoss studies,^{27–32} severe COPD in one study,³⁸ moderate to severe COPD in two studies,^{4,37} and post-acute COPD exacerbation in two studies.^{33,39} In two studies, patients were reported as having clinically stable COPD,^{33,36} one of the studies³⁶

defined this as “free of respiratory symptoms for at least one week,”^(p.41) and the other study did not define stable COPD.³³ Although all but one study³⁴ indicated the severity of COPD in patients, only two studies indicated how the severity had been determined; one study³⁵ used the Global Obstructive Lung Disease (GOLD) guidelines, and another used the American Thoracic Society’s functional capacity classification.³⁶ Only the Marques and colleagues study³⁵ involved family members and caregivers in the PE sessions along with the patients with COPD.

Where—the patient education setting

PE was conducted in outpatient settings,^{27–32,34} outpatient pulmonary rehabilitation programmes,^{37,39} an inpatient pulmonary rehabilitation programme,³⁶ a primary care centre,³⁵ acute care units,³³ and people’s homes.^{4,38} In the majority of studies, PE was provided in a group setting. The Gallefoss interventions used a combination of individual and group sessions.^{27–32} In two studies, PE was delivered in individual sessions,^{4,38} and in three studies, it was delivered in group sessions.^{35,36,39} In three other articles, it was unclear whether the PE was provided in an individual or a group setting.^{33,34,37}

When—duration of patient education sessions

Most of the studies defined the total number of hours of PE, but four^{33,34,37,38} did not provide enough information to determine this. The Greening and colleagues study³³ described using motivational interviewing for a long enough period to introduce the participants to the Self-management Programme of Activity, Coping and Education (SPACE) manual for COPD and to familiarize them with the content.

This booklet was then used as a reference for education for the rest of the programme and reviewed in the follow-up telephone calls at 48 hours, 2 weeks, and 4 weeks after discharge. In the Boxall and colleagues study,³⁸ the number of sessions was based on patient comprehension and skills acquisition. Therefore, the number of sessions varied among patients; most patients received six sessions over 12 weeks.

Two studies^{33,34} clearly described the exercise parameters that were part of the intervention but did not specify the length and number of the education sessions. The parameters of the education sessions varied greatly among studies except for six publications, which all used one sample.^{27–32} Therefore, these six publications had the same type of PE intervention: two group sessions (five to eight persons) of 2 hours each, with a 1-week interval between them. The first session was with a medical doctor and pharmacist, and the second session was with a nurse and physiotherapist; this was followed by one to two individual sessions with a trained nurse and one to two individual sessions of 40 minutes each with a physiotherapist. Overall, the education sessions lasted from 40 to 90 minutes.

Of the studies that included the following parameters, the total number of education sessions ranged from 3 to 16. For the studies with weekly education classes, the number of sessions per week ranged from 1 to 2, with an average of 1.4 classes per week. The PE intervention in the Gallefoss studies^{27–32} consisted of 1 group session followed by 1 to 2 individual sessions in an unspecified time frame. The length of education programmes ranged from 4 to 12 weeks, with a median length of 7.25 weeks. Some studies identified the number of sessions that were provided per week for a specific number of weeks (e.g., 3 sessions per week for 3 wk), and other studies identified their programme by the number of sessions in a broad time frame (e.g., 6 sessions over a 3 wk period).

Why—the goal of patient education

The studies’ aims had similarities, such as examining the effect of different interventions—often exercises combined with PE sessions—on the use of hospital services and economic outcomes^{4,27,28,30,31,33,38} and on exercise tolerance and quality of life,^{32–34,36–39} as well as their effect on coping strategies³⁵ and patient satisfaction.²⁹

How—educational tools and methods of patient education delivery

The majority of the studies (10 of 14) used from one to six educational tools, with a mean of 3.5, and included written handouts after each session;³⁵ home diaries;^{27–32,39} films;³⁴ a booklet, teaching workbook, or information pack;^{4,27–33} flip charts;⁴ and technique sheets.⁴ Other PE methods included case studies,³⁴ and the Marques and colleagues³⁵ study also used home tasks, role playing, and brainstorming as different methods of providing PE.

Discussing education topics with patients who had COPD was the most frequently used method,^{27–38} and in three^{36–38} of those studies, this was the only form of PE delivered. Half of the studies used discussion in conjunction with handouts.^{27–33} Some of this discussion followed a specific framework for provision of PE.^{27–33} For example, the Gallefoss studies used a 19-page booklet that provided information on asthma and COPD, medication, self-assessment, and self-management,^{27–32} and another study³³ used the SPACE manual as part of a structured programme of exercise, education, and psychosocial support. Motivational interviewing techniques were used to introduce patients to the manual and to familiarise them with the content. Motivational interviewing is a counselling or coaching technique often used to effect behavioural change.⁴⁰ The manual was used throughout the participants’ “inpatient stay and in the subsequent discussions during telephone calls.”^{33(p.3)}

In other studies, it was unclear whether a specific framework was followed to discuss the PE topics provided by the authors.^{27–32,34,37,38} Of those studies, eight reported that the goal of the discussion was to address a patient’s concerns and promote the establishment of

a partnership between the patient and the health care professional and set up a collaborative team.^{4,27–32,34,35} Seven of the studies used a combination of a specific framework and collaborative discussion to provide PE.^{19–24,26}

Outcome measures

None of the studies used outcome measures that were specific to PE. However, they did include outcome measures for their overall study objectives.

Questionnaires

The majority of the studies (12 of 14) used a disease-specific, health-related quality-of-life tool as an outcome measure, most commonly the St. George's Respiratory Questionnaire^{4,27,30,32–35,38,39} and the Chronic Respiratory Disease Questionnaire.^{36,37,39} Other questionnaires used were the Nijmegen Questionnaire,³⁷ Hospital Anxiety and Depression Scale,³⁷ Barthel Activities of Daily Living Index,³⁸ Instrumental Activities of Daily Living Index,³⁸ Short Portable Mental Status Questionnaire,³⁸ 36-item Short-Form Health Survey,³⁹ Family-Crisis Oriented Personal Evaluation Scales,³⁵ Psychosocial Adjustment to Illness Scale—Self-Report,³⁵ and selected parts of the Asthma Quality of Life Survey, which was used in one of the Gallefoss studies.²⁹

Performance measures

Authors also used measures to evaluate the physical condition of participants with COPD, such as the 6-minute walk test,^{4,34–38} incremental shuttle walk test,^{33,39} endurance shuttle walk test,³³ and timed up-and-go test.³⁵ Muscle strength was measured using maximal isometric quadriceps strength³³ and 10-repetition maximum with ankle weights (knee extensor strength of dominant limb).³⁵ Other performance measures were spirometry measurements^{4,31–33,38} and measures of dyspnoea using the Modified Borg Scale^{37,38} and Visual Analogue Scale for Dyspnea.³⁴

Use-of-health-care measures

Morbidity and mortality were evaluated by means of the participants' use of health care, such as the amount of time to first admission,³³ number of admissions and readmissions to hospital,^{4,28,33,38,39} cause of admission,³³ and total days spent in hospital.^{4,30,33} One study also recorded visits to the emergency department that did not require admission.³⁹ Some studies also recorded general practitioner consultation and doctor visits^{28,29,37} as well as dispensed pharmaceuticals.^{28,31,37}

Sociodemographic measures

Interviews were conducted with patients to collect sociodemographic information; this information included their management of COPD (e.g., drug therapy, specialist input, acute COPD exacerbations),⁴ smoking habits,^{4,31,32} absenteeism from work,^{27,28,30} satisfaction with the overall handling of their disease,^{27–29} medication profile,^{4,27–32} and travel costs.^{27,28}

DISCUSSION

PE is an essential component of treatment of patients with COPD, but it is a complex intervention. It includes six interconnected and interdependent aspects—the “who, what, where, when, why, and how”—that need to be taken into consideration. A physiotherapist (the “who”) needs to have an overall objective or goal for the PE (the “why” of the intervention) before starting. Framing the “why” using Bloom's⁴¹ taxonomy of educational objectives for knowledge acquisition, problem solving, skills acquisition, and behavioural change can be helpful. So, for example, if the goal were to teach a patient breathing control (the “what”) to help him or her control dyspnoea, this would be considered skills acquisition combined with some knowledge acquisition. The approach used (the “how”) might be visual and hands-on, including demonstrations. For this aspect to be successful, the physiotherapist would take into consideration when and where to provide PE (the “when” and “where” of the intervention)—for example, he or she would not provide it when a patient was having severe dyspnoea because the person would not be able to concentrate on the PE intervention, and it might even be harmful.

What—education topics

Our scoping review found a considerable amount of variety in the topics discussed during PE. This variety was also noted in the systematic reviews, which limited their ability to make specific evidence-based recommendations.^{6,14,26} A systematic review of education programmes in COPD management also found that the PE topics discussed in the studies were inconsistent.⁹ Even though current guidelines identify important and common education topics, such as understanding chronic lung disease, medication management, breathing control, oxygen therapy, and smoking cessation,^{6,42} it appears that not all of these topics were included in the clinical studies of PE interventions.

Who

Physiotherapists

The results of this scoping review confirmed that physiotherapists were involved in delivering PE to patients with COPD, but they did not usually act alone. PE was most often provided by health care teams, which included respirologists, pharmacists, dieticians, and occupational therapists as well as physiotherapists.^{42,43} A limitation of the studies was that the specific topics of the PE that was given solely and specifically by a physiotherapist were often not identified. This may be due to the fact that providing PE was often shared between the physiotherapist and other health care professionals.

None of the studies provided information about the type of training that the physiotherapists and other health care professionals had received to be able to provide effective PE. We do not know whether the health care

professionals had training in providing PE, and the authors of the studies decided not to include that information in the article or whether the health care professionals had any training in providing PE. There certainly exist training programmes for health care professionals such as the Lung Association and the Lung Health Institute of Canada respiratory educator certification, which provides continuing education for health care professionals working with people with lung conditions, including COPD. The course includes information about adult learning theories as well as approaches to PE.^{42,44} Also, health care professionals can learn more about PE by completing the Choices and Changes self-management programme through the Institute for Healthcare Communication in Canada⁴⁵ or the Chronic Disease Self-Management Program offered by the Stanford School of Medicine at Stanford University in California.⁴⁶

Patients

Although all but one³⁴ of the studies indicated the severity of COPD in patients, only two studies indicated how severity was determined; one³⁵ used the GOLD guidelines,⁴⁷ and the other used the American Thoracic Society's functional capacity classification.³⁶ None of the studies indicated that the researchers had made any changes to the PE provided on the basis of the severity of the COPD, even though that is a recommendation of clinical practice guidelines.^{6,47}

It was interesting to note that only the Marques and colleagues study³⁵ included family members and caregivers in the PE sessions along with the patients themselves. Health care professionals are encouraged to include family members in PE sessions because it is not just the people with COPD who are affected by the disease; their families are also affected, as is their social circle.^{6,42,48}

Where—the patient education setting—and when—the duration of programmes

Our scoping review found that where the PE was delivered, as well as the duration of the education sessions and follow-up periods, differed greatly from one study to another (excluding the Gallefoss studies).^{27–32} This is consistent with the results noted in other reviews of, and guidelines for, the care approaches for people with COPD, including PE.^{9,47} This difference certainly contributes to the studies' lack of recommendations about where and when to deliver PE to people with COPD. This is another large gap in the research literature.

Why—the goal of patient education

The goals or objectives identified for the studies included in the scoping review focused on their overall interventions, which included PE, but PE was not the primary intervention. The primary outcomes were the use of hospital services and economic outcomes,^{4,27,28,30,31,33,38} exercise tolerance, quality of life,^{32–34,36–39} coping strategies,³⁵ and patient satisfaction.²⁹ The majority of the

studies identified the PE as a self-management programme, but because the authors did not define PE, identifying it as a self-management programme unfortunately only added to the confusion. As with PE, self-management can mean different things to different people, and it is rarely defined in the literature. Some see it as interchangeable with PE, whereas others see PE as part of self-management.⁴²

To add to the confusion, it is often suggested that self-management approaches can help to establish patient engagement by empowering patients. Relying on a recent expert consensus definition of COPD self-management as an intervention—“structured but personalized and often multi-component, with goals of motivating, engaging and supporting the patients to positively adapt their health behaviour(s) and develop skills to better manage their disease”^{49(p.46)}—might help to clear up this confusion in future studies.

Although patient engagement and empowerment are important in PE, these terms were unfortunately not used or discussed by the authors of the included studies. Without a universal definition of PE, the authors may have had a goal of patient engagement or empowerment as part of their PE, but they did not identify this; the fact that this is not something that can be compared among studies reveals a gap in the literature.

How—educational tools and methods for delivering patient education

The authors used a variety of tools and methods for delivering PE, and they can be divided into verbal and written approaches.

Verbal

By far the most popular method of providing PE was for a physiotherapist to discuss education topics with patients with COPD. The framework, or approach, described in one study was motivational interviewing used in combination with the SPACE manual.

Some studies did not indicate the framework or approach used in the discussion. Several approaches are commonly used, such as the didactic approach, often used in group PE classes by health care professionals, including physiotherapists. Other verbal approaches may be more individualized, depending on the goals of the PE, to take more of a coaching approach or even a counselling approach. Both have been shown to be effective in behavioural change.^{50–53}

Written

Another popular type of PE was giving handouts to patients, often in addition to discussion, although no consistency in types of handout was found. There is evidence that this is also an effective method of PE but that it should be designed to be easy to understand, regardless of a patient's level of literacy.^{10,54} There is some evidence of low literacy in patients with COPD because it is

often linked to lower socioeconomic status and lower physical and mental functioning.^{55–59} Although the specific relationship between the effects of low literacy on COPD self-management has scarcely been researched, evidence has suggested that it can be a barrier to learning and remembering key self-management skills for individuals with asthma;⁶⁰ thus, it could also be a factor for patients with COPD. Future studies should focus on establishing a guideline for patient handouts by ensuring that plain language and clear design are used in the development of the printed material;²⁰ this will ensure consistency in PE.

Measuring the effectiveness of patient education

The studies predominantly used measures such as questionnaires pertaining to health-related quality of life and performance measures of physiological function, possibly as markers of PE effectiveness. None of the studies used outcome measures that specifically evaluated the efficacy of PE. This may be because although all the studies explored the PE provided by physiotherapists, none of them focused solely on the effect of the PE. Also, the number of valid instruments that can evaluate the effects of PE in patients with a chronic disease is limited, whereas several valid, reproducible, and responsive tools exist and are well established to evaluate health status, quality of life, and physiological function.^{15,61} Because self-efficacy is an important aspect of PE, one instrument that could be used in future studies is the COPD Self-Efficacy Scale, which assesses the self-efficacy of a person living with COPD in dealing with common everyday issues and has good test–retest reliability and excellent internal consistency.⁶²

Because of the heavy reliance on verbal interaction in health care encounters, it is imperative that all health care professionals use clear verbal communication, especially during PE. An informal method of assessing the effectiveness of PE is called “Teach Back,”^{63,64} which ensures that patients understand instructions. It involves asking patients to demonstrate their understanding by asking them, “I want to be sure I explained everything clearly, so can you please explain it back to me so I can be sure I did?” Patients can then “teach back” to the health care professional what they heard and understood. This provides an opportunity for the health care professional to clarify the information, if necessary.

Because of these issues, future studies should focus on establishing other valid tools for evaluating the effectiveness of PE interventions on a specific PE goal, such as knowledge acquisition, skills acquisition, or behavioural change, that has been agreed on by a health care professional and a patient.^{10,14,65}

Our scoping review has several limitations. First, it included only articles published in English or French, and 25 studies retrieved in the initial literature search had to be excluded for this reason. Second, in the initial literature search, the key word *patient education* was

used when *rehabilitation program* may have been more appropriate; it may have broadened our search to studies that did not use *patient education* in the title or abstract but used it as an element of the programme. Third, our search may have excluded certain articles because they used different definitions of *patient education* and *self-management*. Fourth, three researchers were responsible for reviewing and subsequently including or excluding articles. Although they used a data extraction form to standardize this process as much as possible, some articles may have been missed. For example, after finishing the review, we became aware that we had missed studies by Effing and colleagues^{66,67} that investigated PE interventions provided by physiotherapists to patients with COPD.

CONCLUSION

The purpose of this scoping review was to identify and map out the current knowledge of the content, processes, and overall effectiveness of the PE provided by physiotherapists to people living with COPD. We set out to find studies in which the PE provided by physiotherapists to patients with COPD was well defined. Unfortunately, there were many studies in which either the PE was not defined or the role that physiotherapists played in providing the PE was not specified. These studies were excluded from the review.

This scoping review found that physiotherapists were involved in PE, a key component of care for people with COPD; however, the specific content and processes they used were not well reported. There is ambiguity in the literature and few clear descriptions of what PE is being provided specifically by physiotherapists; what education topics should be and are being delivered by physiotherapists; and where, when, why, and how physiotherapists are delivering this PE to patients with COPD. This could be the result of the heterogeneity found in the studies, which also provided no clear, evidence-based recommendations for physiotherapists about education topics, educational tools, the setting of PE, the duration of programmes, or what outcome measures to use to determine the effectiveness of the PE. Further studies are needed to identify best practices for both the content and the processes of PE interventions and thereby optimise the quality of life of people living with COPD.

Our clinical advice to physiotherapists is to approach providing PE to people with COPD as they would any other intervention, including discussing with the patient their goals for the patient’s treatment but also for the PE. Think through the different components of providing PE—the “what, where, who, when, why, and how.” Link the goal of the PE with an appropriate outcome measure to determine its effectiveness; for example, if a patient’s goal is self-efficacy, use the COPD self-efficacy questionnaire. Finally, document in the patient’s chart the specifics of the PE intervention so that you can keep track of the PE provided and plan for future PE interventions.

KEY MESSAGES

What is already known on this topic

International guidelines recommend, and previous studies have found, that PE as an intervention is a key aspect of care for people living with COPD.^{6,42} Yet there is also an extensive heterogeneity in the current studies' definitions of PE interventions, study populations, follow-up times, and outcome measures. In addition, PE is often integrated into pulmonary rehabilitation programmes or other interventions, making it difficult to isolate its effect.^{7,14}

What this study adds

This scoping review found that physiotherapists were involved in studies that examined PE as a component of an intervention for people with COPD. However, their specific role was not well defined. There is ambiguity in the literature about what part of a PE programme is being provided specifically by a physiotherapist; what education topics should be and are being delivered by a physiotherapist; and where, when, why, and how physiotherapists deliver PE to patients with COPD. The results of this scoping review reveal the gaps in the literature and the opportunities for future research to establish best practices in PE for physiotherapists.

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