

RESEARCH PAPER

Barriers to, and facilitators for, referral to pulmonary rehabilitation in COPD patients from the perspective of Australian general practitioners: a qualitative study

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Abstract

Background: Pulmonary rehabilitation (PR) is recommended in the management of people with chronic obstructive pulmonary disease (COPD), but referral to this service is low.

Aims: To identify barriers to, and facilitators for, referral to PR programmes from the perspective of Australian general practitioners.

Methods: Semi-structured interviews were conducted with general practitioners involved in the care of people with COPD. Interview questions were informed by a validated behavioural framework and asked about participants' experience of referring people with COPD for PR, and barriers to, or facilitators of, this behaviour. Interviews were audiotaped, transcribed verbatim, and analysed using content analysis.

Results: Twelve general practitioners participated in this study, 10 of whom had never referred a patient to a PR programme. Four major categories relating to barriers to referral were identified: low knowledge of PR for COPD; low knowledge of how to refer; actual or anticipated access difficulties for patients; and questioning the need to do more to promote exercise behaviour change. Awareness of benefit was the only current facilitator. Three major categories of potential facilitators were identified: making PR part of standard COPD care through financial incentive; improving information flow with regard to referrals and services; and informing patients and public.

Conclusions: Significant barriers to referral exist, but opportunities to change the organisation of practice and information management were identified. Behaviour change strategies which directly target these barriers and incorporate facilitators should make up the key components of interventions to improve referral to PR by general practitioners who care for people with COPD.

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The full version of this paper, with online appendix, is available online at www.thepcrj.org

Background

Chronic obstructive pulmonary disease (COPD) is a common and disabling condition that is frequently managed by primary care practitioners.¹ Analysis of data from 187 countries ranked COPD as the third leading global cause of death in 2010.² In Australia, the prevalence of COPD (Global Initiative for Chronic Obstructive Lung

Disease (GOLD)³ stage II or higher) is reported as 7.5% among people aged ≥ 40 years and 29.2% among those aged ≥ 75 years.⁴

Pulmonary rehabilitation (PR) is a programme of structured supervised exercise, education, and psychosocial support which is recommended by international guidelines in the management of people with COPD.³ There is strong evidence that PR improves exercise tolerance, reduces anxiety, and improves symptoms in people with moderate to severe COPD.⁵ Participation in PR reduces admissions to hospital for exacerbation of symptoms⁶ and has

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demonstrated effectiveness in terms of cost per quality-adjusted life years.⁷

Despite the known benefits of PR, referral to such programmes is low. A systematic review of international surveys and practice audits indicated that between 3% and 16% of suitable COPD patients in general practice were referred to PR.⁸ While 85% of Australian PR programmes report that they accept referrals from general practitioners,⁹ referrals appear to be predominantly received from respiratory physicians.⁶ In contrast, a UK review of a London-based PR programme reported that 57% of referrals were from primary care (13% general practitioner, 21% practice nurse, 23% community COPD clinic).¹⁰

In order to address the low implementation of this evidence-based recommendation, more information is needed about the reasons why general practitioners do not refer people with COPD to PR programmes. Perspectives of general practitioners regarding how to improve referral rates to PR are also required.

The research questions explored in this study are: (1) What are the barriers for general practitioners to referral of people with COPD to PR programmes? (2) What does or would facilitate general practitioners to refer people with COPD to PR programmes?

Methods

A qualitative study using semi-structured interviews was undertaken, with questions and analysis based on a theoretical behavioural framework specifically designed to examine implementation of evidence-based practice.¹¹ The study was approved by the relevant ethics committees prior to commencement.

Participants

This study formed part of an evaluation of patients admitted to a large tertiary hospital with a primary diagnosis of COPD exacerbation between March and November 2011. The recruited patients with COPD were potentially eligible for PR programmes (i.e. sufficient English language, cognitive status, and physical capability). One month after each recruited patient had been discharged from hospital, written contact was made with the patient's general practitioner, inviting them to participate in the study. Letters were followed up with one telephone call. In this way, a purposive sample of general practitioners actively involved in the care of COPD patients in the local area was obtained. Informed consent was obtained from all participants.

Data collection

Semi-structured interviews were conducted with general practitioners to ask questions regarding (a) experience of referring people with COPD to PR programmes; (b) barriers to referring people with COPD to PR programmes; and (c) actual or potential facilitators for referral of people with COPD to PR programmes. Interview guide questions (see Appendix 1, available online at www.thepcrj.org) were informed by the Theoretical Domains Framework (TDF).¹¹ This consensus-derived validated framework integrates multiple behaviour change theories and provides a classification of 12 domains that may influence behaviour.¹² The TDF was specifically developed to analyse barriers to and facilitators for implementing evidence-based practice by health professionals.^{11,12}

Table 1. Content analysis process

Stage	Action
1	Line-by-line examination to identify excerpts which related to the research questions
2	Assigning descriptive categories to excerpts in order to describe the data
3	Examination of descriptive categories to determine relationships between them, developing major categories formed by groupings of minor categories
4	Re-reading transcripts for further relevant data, with ongoing adjustment and final sorting of major and minor categories ¹³

General practitioners were given the option of conducting the interview face-to-face at their practice or by telephone. All interviews were conducted by the same researcher (postdoctoral research fellow with experience in qualitative research and clinical practice in COPD) and were audiotaped. Recordings were transcribed by an independent service and subsequently compared with the audio recording by the interviewer for completeness and accuracy. Demographic information collected directly from participants included their years of experience and practice setting (metropolitan/rural).

Data analysis

De-identified transcripts were content analysed^{13,14} to identify and classify categories within the data in relation to the research questions (Table 1). The NVivo9 software (QSR International Pty Ltd) was used to organise the data and facilitate analysis.

Quotations from the transcripts were extracted to provide supportive data for each category. Excerpts and organisation of major and minor categories were discussed with a second researcher until consensus was reached. Recruitment and data collection were continued until data saturation was achieved and no new categories were being generated from interview data.

Results

Thirty-eight general practitioners were invited to participate in the study and 12 agreed. The remaining 26 did not respond to one letter and one telephone call and were not contacted further. Eleven interviews were conducted face-to-face and one by telephone. Of the 12 participants (two female), one reported 10 years of experience in general practice while all the others had ≥ 20 years of experience. All were currently working in metropolitan areas and six had worked in rural general practice in the past.

Ten of the 12 general practitioners had never referred a patient to a PR programme. Of the ten who had not referred patients to a PR programme, two had referred patients with COPD to physiotherapists or reported that patients of theirs had been referred to PR programmes by respiratory physicians (n=2) or during a hospital admission (n=2).

Analysis identified four major categories relating to barriers to referral and four major categories which did or could facilitate referral to PR in people with COPD (Table 2). Descriptive categories which later contributed to all eight major categories were established after

Table 2. Categories associated with barriers to and facilitators of referral of people with chronic obstructive pulmonary disease (COPD) to pulmonary rehabilitation (PR)

	No of excerpts
Barriers to referral to pulmonary rehabilitation	
Low knowledge of PR for COPD	15
Not aware of PR	9
Not familiar with evidence base	3
Not clear how it fits into COPD care	3
Low knowledge of how to refer to PR	19
How to refer not known	9
PR providers not known or perceived inadequate	6
Referral criteria not known	4
Actual or anticipated access difficulties for patients	18
Difficult to access service through current systems	5
Difficult for patients to attend service due to travel required	13
Why do more to promote exercise behaviour change?	14
Part of what I already advocate	5
Low perceived benefit	1
Not a priority for patients	2
Difficulty of gaining behaviour change in patients	6
Facilitators of referral to PR	
<i>Current facilitator</i>	
Awareness of benefit of PR	6
Reading, mentoring or teaching	2
Seeing the benefits for patients	4
<i>Potential facilitators</i>	
Make PR part of standard COPD care through financial incentive	7
Medicare subsidy for PR	4
Integrate in care planning for chronic disease	3
Improve information flow regarding referrals and services	25
Academic detailing	6
Electronic decision support	4
Link with existing visits from pharmaceutical representatives	4
Single point of referral contact	4
Resources that GPs already use	3
Involve practice nurses	2
Network of private PR providers	1
Culturally appropriate exercise groups	1
Inform patients and the wider public	3
Major categories are shown in bold type and minor categories in normal type.	

the first six interviews. Descriptive categories which contributed to all minor categories were established after eight interviews, and major categories were formed and consolidated by the tenth interview. No new major or minor categories were added during the last two interviews and existing categories were further supported.

Major barriers to referral to pulmonary rehabilitation

(1) Low knowledge of PR for COPD

Nine transcript excerpts indicated that participants were not aware of the existence of PR programmes:

"Frankly I didn't know that there were structured programmes available and that would have been probably the main reason I wouldn't send anyone." (id4)

Three excerpts indicated that participants were unsure of the evidence base for PR. Others were unclear about the place of

rehabilitation in overall COPD management.

"... you put them on maximal therapy when they're this bad and then they get acute exacerbations and you deal with those and apart from that – I am not really sure where any kind of rehabilitation process will come into this. I mean I am not sure where it slots in." (id10)

(2) Low knowledge of how to refer to PR

Lack of detailed knowledge about how to refer potential patients to PR was reflected in nine excerpts:

"I don't know how to access the programmes and I'm not sure we can as GPs." (id9)

It was not clear to participants who the providers of PR services actually were (6 excerpts).

"One would assume that your local major public hospital would do it, but exactly how you'd get that I suspect a lot of people wouldn't be sure ... my guess is that there probably are some private providers doing it but blowed if I know who they were." (id1)

Others questioned the quality of the service provided or the specific criteria for referral.

(3) Actual or anticipated access difficulties for patients

Participants gave examples of how difficult it was for their patients with COPD to attend appointments outside the home (13 excerpts).

"Yes, well it's transport and someone to sit around the car waiting for you or if you're going to drive yourself and another barrier has got to be that there is obvious risk they're going to be crook and unable to travel." (id7)

Participants also described concern about availability or wait time for services in five excerpts:

"I think if people go on a waiting list for a long time for anything, by the time they're called up quite often that incentive to go and do something about it might have dwindled." (id3)

(4) Why do more to promote exercise behaviour change?

This category reflected general practitioners' perceptions of the relative costs and benefits of PR for their patients with COPD. Five excerpts indicated that participants already gave attention to encouraging exercise, and in some cases did not prioritise another service (i.e. PR) with a similar focus.

"It's part of an overall programme, we concentrate on vaccination for chest infection, appropriate antibiotics and use of medication, proper physical activity and then lung exercise." (id8)

However, participants also spoke of the challenge of gaining behaviour change towards more exercise in their patients.

"The biggest hurdle is always getting the patient to co-operate and comply with your advice. It's not us knowing what needs to be done, it's translating that into an outcome which basically is vested in the patient's action." (id4)

Major facilitators of referral to pulmonary rehabilitation

Current facilitator

(1) Awareness of benefit (6 excerpts)

Where participants did refer patients to PR, they had gained

awareness through the mentoring and example of respiratory physicians, reading or seeing the benefits experienced by their patients:

"It helps them cope better with it and also I think helps them understand more quickly that, gosh, I'm going into an acute exacerbation or something so they'll come in more quickly so we can start oral steroids or something like that. So I think, yes, there is benefit in that." (id11)

Potential facilitators

Participants identified three major strategies that they felt would help more people with COPD be referred to PR:

(1) Make PR part of standard COPD care through financial incentives

Participants (in four excerpts) described how government subsidy for the cost of exercise assessment and intervention in patients with type 2 diabetes had helped to integrate this into the standard care of these patients:

"Well it's a part of the whole diabetes management plan really."

"Exercise physiologists had their first bite at the government cherry probably about eight or nine years ago and that's when it really took off. They do help with that. Maybe they help with pulmonary rehabilitation too I am not sure."

"It's a part of the formal diabetic care plan that you get people into this now. People do ask for it." (id10)

Greater emphasis on inclusion of PR in chronic disease care planning for COPD, again linked to a financial incentive, was also suggested in three excerpts.

(2) Improve information flow regarding referrals and services

Twenty-five citations recommended ways to improve information flow. Visits to practices directly to provide relevant information were identified in 10 excerpts.

"There are very few people coming out and sitting at your desk and kind of detailing it to you in the way that if a new inhaler comes along and all these sort of smartly dressed people bearing pens come ... it would raise awareness I think." (id1)

Participants suggested integrating relevant local referral and service information into electronic decision support systems (four excerpts) or resources already used by general practitioners including hospital discharge documentation (three excerpts), and promoting a greater role of practice nurses (two excerpts).

A single point of referral contact for PR services was suggested in four excerpts:

"I think, yes, to facilitate it, for me to be able to ... just refer to somebody to say could you organise some pulmonary rehab. Yes, one point of contact." (id5)

The problem of extreme busyness and too much information being provided was raised.

"The least useful thing is to produce another flyer because I can tell you now, because of the volume of stuff that comes through our pigeon holes, you don't look at them." (id2)

Offering PR services by a network of private providers and

programmes in languages other than English were also recommended.

(3) Inform patients and the wider public

Raising public awareness of PR through print/electronic media or advertising in practice waiting areas was identified as a facilitator for referral in three excerpts:

"They find it hard to see what we're talking about. So you want a You Tube of what goes on to refer them to it." (id7)

Discussion

Main findings

This study found that 10 of the 12 general practitioners interviewed had not directly referred a person with COPD for PR. Barriers to referral were low knowledge of PR in the management of people with COPD; low knowledge of the referral process; difficulties with access to PR by their patients; and questions about the need to further promote exercise behaviour change in this patient group. General practitioners felt referral rates would be improved by integrating PR into standard care through financial incentive; improving information flow regarding referral and services; and informing the general public.

Strengths and limitations of this study

Study participants were involved in the management of at least one patient with COPD who had recently been discharged from a tertiary hospital. The interview guide and development of this study were based on our pilot research, which identified that referral to PR was low and associated with multiple barriers in comparison with other high-evidence recommendations in the care of people with COPD.¹⁵ A strength of our current study was the direct examination of perceived facilitators for referral. These data provide new information and potential solutions that may otherwise be overlooked in studies of barriers to guideline implementation.

Data collection was limited to a single interview and participants were not supplied with transcripts for checking; however, the interviewer made use of notes and reviewed transcripts against audio-recordings to ensure accuracy. We examined the time course of major and minor category development as interviews progressed, in accordance with methods previously described in qualitative research to support the validity of data saturation.¹⁶ Our research question was simple and well-defined, which may also have contributed to the timing of data saturation.¹⁷

Interpretation of findings in relation to previously published work

Lack of awareness and familiarity is well recognised as a key reason behind low implementation of guidelines in primary care generally,¹⁸ and specifically in relation to COPD management.¹⁹ Interview data from 16 Australian medical practitioners found complex barriers to PR referral in comparison to implementation of other high-evidence recommendations in COPD (e.g. smoking cessation, influenza vaccination).²⁰ However, better communication about local PR service provision and streamlined referral pathways could embed this knowledge in the daily workflow of general practitioners. Harris and co-authors²¹ reported similar logistical barriers to PR (referral process and service provision) in focus groups with UK primary care health

professionals. They proposed that these barriers resulted in lack of persuasive communication with patients about PR, with a negative effect on referral patterns.

The general practitioners in our study identified the difficulties faced by COPD patients in attending a centre-based rehabilitation programme. These perceptions reflect the reported concerns of people with COPD – namely, difficulties with transport, lack of perceived benefit, and being unwell – as reasons for not taking up an offer of PR.²² Service delivery changes which provide PR at home²³ and/or make use of internet platforms²⁴ instead of requiring patient travel may need to be added to the mix of PR modalities to overcome these environmental barriers.

The challenge of achieving change in exercise behaviour was met in some cases with the belief that general practitioners already offered sufficient advice. However, advice and education about the benefits of exercise have been shown not to result in greater exercise capacity in people with COPD.²⁵ Similarly, provision of high-quality evidence-based information to people with COPD resulted in them reading the material without making changes to their disease management.²⁶ Incorporating behaviour change strategies – such as an action plan contract with a general practitioner – has shown short-term benefit in adoption of physical activity in patients with risk factors for coronary heart disease.²⁷ However, it is not known whether this approach would be effective in COPD, where patients' fear of breathlessness is a major limiting factor to exercise participation.²⁸

Study participants identified two major groups of strategies with potential to facilitate referral to PR. The first involved making PR part of standard COPD primary care through financial incentive by extending current legislative and policy frameworks of government subsidisation. In the USA, a Medicare reimbursed benefit for comprehensive PR in patients with moderate to severe COPD was introduced in 2009,²⁹ but it is not yet known how this has affected referral rates. The general practitioners in our study spoke of the introduction of a Medicare subsidy for exercise assessment and supervised exercise sessions in patients with type 2 diabetes introduced in 2007.³⁰ Five years after the introduction of this policy, referral for lifestyle management services was recommended by 82% of Australian general practitioners in a clinical vignette-based survey (n=125) of care of patients with type 2 diabetes.³¹ Exercise and diet programmes are part of the funded support for patients with diabetes through the universal Medicare programme in Australia, and the data show that referral for modification of diet and exercise behaviour have quickly become part of standard primary care for people with type 2 diabetes following introduction of supporting legislation.

The second major facilitator suggested was improved flow of information regarding referral and services. Participants were aware of the paradox between their need for information about referral pathways and services and the information overload they experienced in a busy practice. A number of the strategies suggested had high potential to integrate referral to PR into workflow through organisational changes and automatic reminders, such as electronic decision support (EDS) systems, academic detailing, single point of

referral contact and greater involvement of practice nurses. A systematic review evaluating EDS systems in the management of chronic disease found that just over half of the studies reported improved care processes with some improved patient outcomes.³² However, only four studies in this review included systems to support primary care management of COPD patients, and they did not all incorporate key factors associated with effectiveness.³³ Academic detailing has been shown to change prescribing practice³⁴⁻³⁶ and implementation of non-pharmacological guidelines³⁷ by primary care practitioners, resulting in improved patient outcomes. These two promising interventions could potentially help integrate referral to PR into primary care work practices.

Implications for future research, policy and practice

The findings of this study provide a roadmap for development of interventions to address barriers to change. Having identified barriers and enablers based on a validated theoretical model,^{11,12} behaviour change techniques can be implemented to address them.³⁸ Specific strategies to integrate PR into the daily workflow of general practitioners are required which address the capability to refer (e.g. a single referral contact accessible electronically at the point of care) and the opportunity to refer (e.g. home-based PR alternatives) which will in turn affect the motivation to refer (e.g. making benefits of PR visible to general practitioners).

While these strategies are transferable, intervention content and modes of delivery need to be developed in a locally relevant, feasible, and cohesive intervention and be appropriately evaluated. This approach has been implemented in a number of studies concerned with changing health professional behaviour to improve quality and safety of healthcare in Australia,³⁹ Canada, and the UK.⁴⁰

Government subsidisation of PR programmes (through patient rebate for service cost) may increase the number and availability of PR programmes offered in the community. Our data suggest that improved access may facilitate referral. Such change could have a 'snowball' effect on referral as greater patient flow through PR programmes provides feedback to general practitioners on the improved outcomes for their patients with COPD.

Conclusions

Referral by general practitioners to PR programmes is a crucial step in achieving implementation of this high-evidence guideline recommendation in the care of people with COPD. Perspectives of study participants indicate that barriers to referral exist at multiple levels, from individual clinicians to local and national healthcare systems. Our findings also point towards appropriate choice of behaviour change techniques for the development of interventions ultimately to help more people with COPD gain access to PR.

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Conflicts of interest The authors declare that they have no conflicts of interest in relation to this article.

Contributorship All authors contributed to the development and design of this study. MY, RA and KNJ contributed to participant recruitment and acquisition of data. KNJ conducted participant interviews. KNJ and PAF conducted data analysis. KNJ drafted the article, which all authors revised for critical content. The final version was approved by all authors.

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Appendix 1.

SEMI-STRUCTURED INTERVIEW GUIDE: HEALTH PROFESSIONAL PRIMARY CARE

This is a semi-structured interview guide. Follow-up questions to the broad “starter questions” listed here will depend on individual participant responses and will seek to gather more detailed information about barriers and facilitators to the implementation of pulmonary rehabilitation.

Starter questions

Have you been involved with recommending or referring patients with COPD for PR?

What do you think are the main reasons why many patients with COPD are not referred to PR?

What do you think would help more people with COPD to be referred to PR?

Follow-up questions

CHECKLIST of areas to cover: Ask these questions if answers are not forthcoming from the open interview, seek to cover all relevant domains

Psychological domain	Associated questions
Knowledge/awareness	Are you aware of the pulmonary rehabilitation (PR) programmes offered? Do you know what is involved in the programme? What sort of patients do you consider suitable for PR? What do you think of the effectiveness of PR? Are you aware of what Australian/International guidelines recommend regarding PR?
Skills	What’s involved for you to refer a patient to PR? (referral to chest clinic or other respiratory consultant, direct call to PR programme)
Social/professional role/identity	Do you see referring suitable patients to PR as part of your role?
Belief about capabilities	How difficult or easy is it to refer patients to PR?
Motivation and goals/intention	How much of a priority is PR in the care of patients with COPD?

Appendix 1. continued

Belief about consequences/attitude	Do you think the benefits of PR for patients are sufficient to justify them participating? Or to justify referral being part of normal workflow for moderate-severe patients with COPD?
Memory, attention and decision making	Is referral to PR something you usually do? Would you remember or think to do it? What would help?
Environmental context and resources	Do you think there is sufficient resource available if you did start referring more patients to PR? (i.e. too much stress on the programme, waits too long to get into the programme)
Social influences	Do colleagues or patients/relatives ever prompt or encourage you to refer to PR? Or do they discourage referral?
Emotion	Do you find PR is something patients are willing to participate in?
Behavioural regulation	Are there procedures or ways of working that encourage referral to PR?
Nature of the behaviour	What would have to change for referring patients with moderate-severe COPD to PR to become a habit?

Checklist references

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