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Physiotherapy

Physiotherapy 97 (2011) 284–290

Pulmonary rehabilitation in Australia: a national survey

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Abstract

Objective To determine the current structure and content of pulmonary rehabilitation programs in Australia.
Design A cross sectional, observational design using a purpose designed anonymous written survey.
Setting and participants The National database of Pulmonary Rehabilitation Programs maintained by the Australian Lung Foundation was used to identify all known programs in all states and territories of Australia ($n = 193$). All pulmonary rehabilitation programs listed on the database were included. Respondents were health professionals who coordinated programs.
Results The response rate was 83% (161/193). Programs were coordinated by physiotherapists (75/147, 51%) and/or nurses (49/147, 33%), were hospital based (97/147, 66%) and ran for 8 weeks or longer (95/147, 65%). Pre (145/147, 99%) and post (137/147, 93%) program assessment was undertaken using a variety of measures. The Six Minute Walk Test (138/147, 94%) was the most commonly used test of exercise capacity. Exercise training was included in 145 programs (99%). Most patients attended at least two supervised exercise sessions per week (106/147, 72%) and exercised for at least 20 minutes (135/147, 92%). Lower limb endurance, upper limb endurance, strength training, and stretching/flexibility exercises were the most commonly included modes of exercise. Intensity prescription for exercise training was variable. Many respondents (93/147, 63%) indicated that they perceived a gap between their clinical practice and current evidence.
Conclusions Pulmonary rehabilitation programs in Australia generally meet the broad recommendations for practice in terms of components, program length, assessment and exercise training. The prescription of exercise training intensity is an area requiring deeper exploration.

Keywords: Pulmonary rehabilitation; Questionnaires; Respiratory therapy; Lung diseases

Introduction

Chronic obstructive pulmonary disease (COPD) is an increasingly common cause of morbidity and mortality worldwide [1]. In addition to significant impact on patient functional capacity, quality of life and participation in activities of daily living, COPD is an increasing burden on health care systems. It is estimated that COPD costs the Australian community approximately $800 million annually [2] and, as the population ages, it is expected that these costs will continue to increase.

Pulmonary rehabilitation, consisting of a number of components including exercise training, patient education, psychosocial support and self management, is an essential strategy for the management of patients with chronic respiratory diseases such as COPD [3–5]. There is an extensive body of published evidence for the effectiveness of pulmonary rehabilitation in increasing functional exercise capacity, reducing symptoms, improving health related quality of life (QOL) and reducing health care utilisation and associated costs [3,5–7].

Recent statements and guidelines from international professional bodies recommend pulmonary rehabilitation as a first line management strategy for people with COPD [3,4,8]. The National Australian Guidelines for the management of COPD (COPD-X) emphasise pulmonary rehabilitation as an essential component of managing both established disease and exacerbations [9]. While there are published evidence-based recommendations for pulmonary rehabilitation it is not

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0031-9406/$ – see front matter.
doi:10.1016/j.physio.2010.12.001

known if gaps exists between current clinical practice and these guidelines. Such gaps have been shown in other areas of health care [10,11] highlighting the need for effective implementation and knowledge translation strategies to ensure that pulmonary rehabilitation programs are providing optimal evidence-based care for patients. Surveys characterising pulmonary rehabilitation services in a number of countries have been published in recent years [12–16]. Apart from a short survey focusing on access and barriers [17], detailed information about pulmonary rehabilitation in Australia is lacking. The aim of this study was to determine the structure and content of pulmonary rehabilitation programs in Australia.

Methods

Study design

The study was a cross sectional, observational design. Ethics approval was granted from the University of Sydney, Human Research Ethics Committee.

Survey instrument

Previous surveys of pulmonary rehabilitation services have used either a 17-item instrument [12,14] or purposefully designed questionnaires [13,16]. Detailed information, specific to the Australian context, was desired and therefore a questionnaire was designed for this study. Development of the questionnaire content was informed by expert opinion and current literature. The questionnaire was piloted at two sites, feedback on readability, structure and utility was provided and minor modifications were made. The final questionnaire was in hard copy paper format to facilitate ease of completion by all respondents including those without Internet access.

The questionnaire consisted of 47 questions divided into six sections with the majority of questions in closed categorical form. A copy of the questionnaire is available from the authors on request.

Sampling frame

The national database of Pulmonary Rehabilitation Programs maintained by the Australian Lung Foundation (ALF) was used to identify all known programs in Australia ($n = 193$) and all listed were eligible for inclusion in the study.

Data collection

A package consisting of a participant information letter, paper copy of the questionnaire, site identification card and postage paid envelope was mailed to all programs listed on the ALF database. The package was addressed to the 'pulmonary rehabilitation coordinator', one questionnaire per site was sent and the request was made that the person most involved in the day to day running of the program complete the questionnaire anonymously. Return of the completed questionnaire constituted consent. The site identification cards, which could not be matched to the completed questionnaires and were intended to track returns and maximise response rate, were sent separately to a second investigator to maintain anonymity. Reminder letters and repeat packages were sent one and two months after the original mailout to all sites with unreturned site identification cards. Sites without active pulmonary rehabilitation programs were advised to inform the researchers to facilitate tracking of responses and identification of non-active programs.

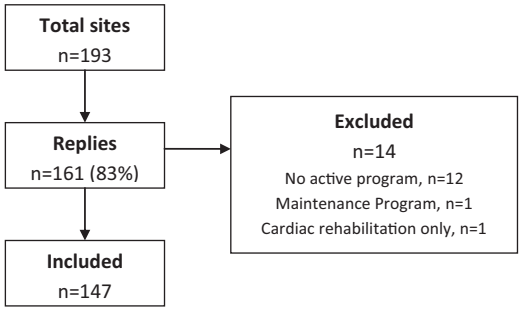

Fig. 1. Questionnaire response rate and exclusions.

Data analysis

All data was coded and entered into a database. Simple descriptive statistics were used. All closed categorical responses were analysed using frequencies and percentages. Open written responses were transcribed verbatim and thematic analysis undertaken.

Results

Responses

The questionnaire response rate and exclusions from the final analysis are shown in Fig. 1. Completed questionnaires were returned from all states and territories in Australia and from all geographical regions (Table 1).

Respondent demographics

Respondents were primarily physiotherapists (104/147, 71%) and nurses (40/147, 27%). Most respondents (97/147, 66%) had more than 10 years experience since their initial

Table 1
Geographical distribution of responses.

Geographical classification (population)	Response (*n*, %)
Metropolitan/urban (>100 000)	57 (39)
Large regional (30 000–100 000)	37 (25)
Small regional (10 000–30 000)	35 (24)
Rural (<10 000)	18 (12)