

University of Galway Research Repository

Developing a structured education programme for clients with COPD

Title	Developing a structured education programme for clients with COPD
Author(s)	Casey, Dympna;Murphy, Kathy;Cooney, Adeline;Mee, Lorraine;Dowling, Maura
Publication Date	2011-05-01
Publication information	Casey, Dympna, Murphy, Kathy, Cooney, Adeline, Mee, Lorraine, & Dowling, Maura. (2011). Developing a structured education programme for clients with COPD. British Journal of Community Nursing, 16(5), 231-237. doi: 10.12968/bjcn.2011.16.5.231
Publisher	Mark Allen Healthcare
Link to publisher's version	https://doi.org/10.12968/bjcn.2011.16.5.231
Item record	http://hdl.handle.net/10379/14815

Developing a structured education pulmonary rehabilitation programme (SEPRP) for clients with COPD in primary care: primary care nurses role

Casey, Dympna Senior Lecturer,
School of Nursing & Midwifery, National University of Ireland, Galway

Murphy, Kathy, Head of School
School of Nursing & Midwifery, National University of Ireland, Galway

Cooney, Adeline, Senior lecturer
School of Nursing & Midwifery, National University of Ireland, Galway

Mee, Lorraine Lecturer
School of Nursing & Midwifery, National University of Ireland, Galway

Dowling, Maura Lecturer
School of Nursing & Midwifery, National University of Ireland, Galway

Abstract

National and International policy documents on the management of COPD highlight the need for pulmonary rehabilitation programmes delivered in primary care settings. However the process of developing such programmes is often unclear. This paper describes the process of developing a Structured Education Pulmonary Rehabilitation Programme (SEPRP), for the PRINCE (Pulmonary Rehabilitation In Nurse led Community Environments) study. This process involved two main stages. Firstly a literature review of existing PR programmes; a content analysis of national and international PR programmes and a concept analysis of empowerment were undertaken. Secondly two small descriptive qualitative studies were undertaken to further inform programme content. One study explored health professionals (n=25) suggestions for programme content. The second explored client's views (n=16) on programme content as well as their perceptions of living with COPD. The findings of these two stages led to the development of the eight week PRINCE SEPRP. This programme was based on a philosophy of empowerment and the SEPRP was underpinned by the Transtheoretical model (TTM) of behavior change. Specific programme content included, managing medications and managing breathlessness, knowing and managing symptoms, recognizing and managing acute exacerbations as well as an individualized exercise programme. Participant's experiences of self management following participation in the SEPRP were also examined. The findings indicate that nurses working in primary care have an important role in informing the development of SEPRP as well as having a key role in their delivery. They have the potential to work in empowering ways with COPD clients and the PRINCR SEPRP is just one example of how this can be operationalised in practice.

Key words

Primary care nurses, pulmonary rehabilitation, structured education, COPD

Introduction

Chronic Obstructive Airways Disease (COPD) is an umbrella term used to describe chronic lung diseases that cause obstruction in airflow. This results in persistent and progressive breathlessness which can greatly impair a person's ability to lead a normal life. COPD will be ranked seventh in the worldwide burden of disease by 2030, (Mathers & Loncar 2006) and it will be the third most common cause of death (World Health Organisation 2008). There is little precise data available on the prevalence of COPD in Ireland. In the UK it is estimated that more than three million people have COPD (Quality and Outcomes Framework 2008/2009). While the rate of COPD in the population attending GPs across the country is estimated to range from 2 to 4% (CHAI 2006). COPD therefore has a significant impact on patients and on health care systems. If illness progression can be delayed and acute exacerbations of COPD prevented, significant alleviation of the economic and clinical burden could be achieved (McDonnell 2007; Wouters 2002).

One of the key strategies used to improve care of people with COPD is the provision of pulmonary rehabilitation (PR) programmes. These programmes typically consist of a patient assessment, exercise training, education and psychosocial support (Nici et al. 2006). Many policy guideline documents on the management of COPD emphasise the need for patients to be treated and have access to such programmes in various health care settings and in particular primary care (DOHC 2001; NICE 2004; GOLD 2008 NICE 2010; DH 2010).

Primary health care nurses are crucial to the successful integration and delivery of such programmes. Kelleher et al. (2009) argue that nurses working in a primary care setting have a key role in delivering community programmes as patient compliance with care and patient's knowledge is enhanced under nurse led care. Likewise Reeves et al. (2004) outline that appropriately trained nurses can produce as high quality care as primary care doctors and

achieve equally good health outcomes for patients. Primary care nurses are therefore in a key position to facilitate PR programmes and promote self-management in clients with COPD.

This paper reports from the ongoing PRINCE (Pulmonary Rehabilitation In Nurse led Community Environments) study. PRINCE is a five year two armed RCT clustered by GP practice (n=32) with an intervention arm in which participants receive a structured PR programme and a control arm where participants receive “usual care” (Murphy et al. 2011). The PRINCE study team in 2008 set about developing a structured education pulmonary rehabilitation program (SEPRP) specifically designed for clients living in the community with COPD which would be facilitated by primary health care nurses. The decision was made to create a structured education programme clearly based on best practice guidelines as identified by NICE (2003) and (DH 2005). As PRINCE aimed to build capacity once developed the primary care nurses in the intervention arm (n=16) of the study delivered the structured education pulmonary rehabilitation programme (SEPRP) to consented clients with COPD. The first part of this paper describes the process of developing the SEPRP programme.

DEVELOPING THE SEPRP PROGRAMME

Development of the programme involved a number of key steps: undertaking a comprehensive literature review on structured education programmes, reviewing behaviour change theories, undertaking a content analysis of other pulmonary rehabilitation programmes and undertaking a concept analysis of empowerment.

Structured education

Structured education programmes are defined as planned programmes which are

“...comprehensive in scope, flexible in content, responsive to an individual’s clinical and psychological needs and adaptable to his or her educational and cultural background”(NICE 2003, p 14).

To ensure that structured education programmes meet quality standards it is recommended that such programmes should:

- Utilize the principles of adult learning
- Be delivered to groups by trained multidisciplinary teams
- Be accessible to all irrespective of literacy level, culture, ethnicity or geographical location.
- Utilize diverse teaching approaches incorporating active learning and be tailored to meet individuals’ needs
- Overtime become incorporated into routine care

Furthermore the DH (2005) stipulated that structured education programmes should be delivered by trained educators and consists of a clear patient centred philosophy, have a structured written curriculum, transparent quality assurance mechanisms and an audit of outcomes.

A central element of any PR programme is to help individuals modify their behaviour. However the literature reveals little evidence as to which interventions or combination of interventions are most effective to create behavior change. Having reviewed the literature and the various behavior change approaches the Transtheoretical Model (TTM) of behavior change developed by Prochaska and DiClemente (1984), was selected as the theoretical approach to behaviour change which would underpin the SEPR.

The Transtheoretical Model (TTM) of Behaviour Change

The TTM incorporates four theoretical constructs which are deemed key to change; *the stages of change*, *decisional balance*, *self-efficacy* and *processes of change* (Prochaska *et al.* 2002). This model concentrates on the process of change, and the supports that individuals might need to make the change which focuses on how a person changes at an individual level, rather than why they don't change (Thomson, 2000).

This model is not without criticism these include methodological concerns in studies applying the TTM (Macnee & McCabe, 2004; Sutton, 2001) and the accusations that it is not a genuine stage theory model and that it relies on a few discrete categories to explain human functioning (Bandura 1997). Irrespective of the criticism of the model, it was chosen for this study because it is an easy model to interpret, and it is useful in experiential teaching, (Batten 1999). It also encourages health professionals to take on a more supporting, manner and it removes the notion of success or failure, as it concentrates on the change process, realising and accepting that a number of attempts to change are tolerable before one can achieve maintenance (Batten, 1999).

The literature review revealed that empowerment was central to how people living with a chronic illness viewed their illness and their involvement in self-care. Therefore a concept analysis of empowerment was undertaken.

Concept analysis of empowerment

Firstly a search of electronic databases to March 2010 for literature related to 'empowerment' was conducted. Papers included in the review had reference to 'empowerment' in the abstract. The literature was then organised following guidance on the structure for concept analysis proposed by Norris (1982) and Rodgers (1989). The concept analysis of empowerment revealed that empowerment in chronic illness is a process with both the nurse

and client contributing to its evolution. The nurse must feel empowered, communicate effectively and surrender control in the empowerment process. The client must be motivated to change and possess specific competencies in order to engage in the empowerment process. People with chronic illness therefore need to be given appropriate information regarding their condition, so they can recognise their symptoms and problem solve to develop solutions, in this way they can be empowered to develop self efficacy to make appropriate decisions regarding their self- management (Bodenheimer et al., 2002). Self-efficacy refers to a person's own belief in their ability to perform a particular behaviour to a certain level of proficiency. The concept analysis of empowerment identified an operational definition of empowerment which emphasised equality in the relationship between the health care professional and the client, with the client viewed as an expert. This definition was used to underpin the philosophy of the PRINCE programme (Table 1)

Content analysis of PR programmes

Pulmonary rehabilitation programmes are

“an evidenced based multidisciplinary and comprehensive intervention for patients with chronic respiratory diseases who are symptomatic and often have decreased daily life activities...it is designed to reduce symptoms, increase participation and reduce health care costs through stabilising or reversing systemic manifestations of the disease” (Ries et al. 2007, p 6s).

Although all medical care for chronic illness should seek to optimise overall patient functioning and quality of life, PR programmes are structured to generate specific improvements by utilising a multidisciplinary approach within the framework of a focused programme. These programmes typically consist of a patient assessment, exercise training, education and psychosocial support (Nici et al 2006). Research evidence indicates that these programmes have been successful in improving patients' sense of dyspnoea and Health Related Quality of Life (HRQoL) (Troosters et al 2005, Lacasse et al 2006; Effing et al.

2007). However, the extent to which these programmes meet the criteria for a structured education programmes (NICE 2003) is unclear. A content analysis was also undertaken of available PR programmes nationally and internationally as well as best practice guidelines. Overall all this revealed that most PR programmes in Ireland were hospital based, and did not have a structured curriculum. Internationally some programmes were community based however the extent to which they were structured education programmes as per the NICE guidelines was less clear. The analysis of these programmes however provided useful information as to the potential content of the PRINCE SEPRP.

Concurrently with the latter activities, persons with COPD living in the community in Ireland, and key health professionals were interviewed to garner their perspectives as to what the PRINCE SEPRP should include.

QUALITATIVE INTERVIEWS

Methods

A descriptive qualitative interpretive design (Thorne et al. 2004) was used to explore COPD patients, educationalists, primary health care nurses and other allied health care professionals perspectives as to the key elements needed for the SEPRP. Ethical approval was obtained from the National University of Ireland, Galway Research Ethics Committee. Written informed consent was obtained from all participants and anonymity, privacy, and confidentiality were guaranteed.

CLIENTS PERCEPTIONS OF LIVING WITH COPD AND SUGGESTIONS FOR PROGRAMME CONTENT

Semi structured face to face interviews, with the use of an interview guide, was used to interview COPD patients at a venue and time convenient to patients. The interviews lasted between 40-50 minutes. Thematic data analysis was used to analyse the data (Burnard 1991). Firstly four of the authors independently coded each data set using Nvivo 7 to facilitate the process. Initially open codes were assigned to the data, then axial coding was conducted to link concepts together and these were then grouped together to create categories. The authors then compared their coding and a final coding framework was developed to analyse the data. The principles of credibility and trustworthiness as outlined by Lincoln and Guba (1985) were used to maintain rigor across all qualitative interviews..

Findings

Sixteen people living with COPD were interviewed to explore their day-to-day experience of living and coping with COPD and to try and ascertain what they felt might be important to include in a PR programme. The age of participants ranged from 44-76 year and the majority of participants were men (n=9). Most lived in rural setting (n=9) and 50% of participants had previously undertaken a pulmonary rehabilitation programme.

Analysis of data revealed five themes: self-preservation, adapting, strategies to manage COPD, availability of services and supports and impact of the environment.

Participants (n=16) described that living well with COPD was a complex balancing act aimed at self-preservation and retaining control. Maintaining a balance was important if participants were to continue to live life as they wanted.

You know, you need to try to keep my life kind of the way it was before. The only difference now is that I can't go and walk around town. I can't go places - I have to measure my distances wherever I go, time wherever I go because of my oxygen as well, you see, and for my medication. 'PTX01

Living with breathlessness was described as frustrating, restricting and sometimes frightening. Adapting to living with COPD involved accepting the limitations imposed by the disease and developing strategies to manage and gain control and maintain independence

‘ When it comes to ironing I have trouble standing for a long time ironing so I tend to buy things that either don’t need ironing or that I can just put in the tumble dryer and fold up neatly and then that saves on ironing. ’07

A key finding was the need to have knowledge and information so that participants could effectively self manages their condition. Managing COPD well centred on ‘knowing’, for examples, ‘knowing own norms and limits’, ‘knowing when you are in trouble and knowing what to do’.

‘...but I do find when I get the niggling pain in my left lung and the sputum changes colour, that I know I’m getting an infection and straight away I act by ringing the team and going into the hospital’ XI

‘when I do get into a fit of coughing now, or I feel it coming on, I get everything ready and I sit there and I do my exercises and all and it’s all, I’m able to cope with it at home whereas if I got an attack like that before, I would have been calling an ambulance. Y08

However, participants reported they did not always ‘know’ enough to manage their COPD well. In this context, accessibility to help was important and it was sometimes a process of trial and error and they didn’t always get it right and therefore often ended up in hospital rather than being able to manage at home.

‘ Sometimes I find that my own self-medication doesn’t help and I usually end up...actually would you believe it most times I’ve been caught going attending a hospital clinic when I see that consultant when they say well you’re not going home you’re going upstairs, when obviously I’ve left it too long’ Y04

Participants’ experience of their COPD was mediated by several factors: the degree of their disability, their own attitude, financial issues and medical insurance and their support

networks. However those participants who had completed a pulmonary rehabilitation programme reported that it had changed their attitude to their disease, making them feel more positive and in greater control.

'Well I wouldn't be exaggerating if I said it (PR Programme) changed my life. Before I went there I couldn't exercise, I couldn't walk upstairs and I couldn't walk more than a couple of hundred yards. It really made a big difference to me Y07

Although participants were unable to name topics or specific content for the proposed PR programme it was clear that the provision of information and knowledge regarding COPD and ways to enhance self management would be important elements.

HEALTH PROFESSIONALS SUGGESTIONS FOR PROGRAMME CONTENT

Method

One to one semi structured telephone interviews, using an interview guide were conducted with GPs (n=9), Primary care nurses (n=7); Physiotherapists (n=4) Respiratory nurse specialists (3); Dietician (n=1) and Chair of the National COPD Strategy Group. Most participants were female and most were in the 30-39 age group further participant demographics are provided in (**Table 2**). These interviews lasted between 15-20 minutes. All interviews were recorded and transcribed verbatim. Thematic data analysis was again used to analyse the data (Burnard 1991).

Findings

The thematic analysis of these interviews related to three main areas; Pre-requisites to developing the programme; Proposed Programme Content and Issues to consider when developing and delivering the programme. These findings are presented in **Table 3** and informed the development of the PRINCE SEPRP.

THE PRINCE SEPRP

The information gained from all these processes led to the development of the PRINCE programme philosophy and a structured written 8 week curriculum designed to be nurse led delivered in the primary health care setting, two hours per week over an 8 week period. The content of this programme are presented in **Table 4**. The primary health care nurse had overall responsibility for delivering the SEPRP and was assisted by a physiotherapist who focused on delivering the exercise component of the programme. All received a training programme to deliver the structured education programme which aimed to prepare facilitators to: (1) deliver the structured education programme consistently, (2) work in an empowering way with clients and (3) work effectively with groups. These training sessions were interactive and geared towards meeting facilitators learning goals and needs. To ensure standardisation of programme delivery, members of the research team delivered all programmes.

The first two-days of the training programme concentrated on: (1) informing participants about the PRINCE study, its aims and expectations, (2) how to deliver the programme, rationale and approach and (3) familiarisation with the content of the SE programme. On the third day, held a week later, participants delivered to their peers an assigned element of the SEPRP. The research team observed these sessions and feedback to each participant on their performance. Providing participants with structured feedback aimed to further facilitate standardisation in the delivery of the SEPRP. The physiotherapists received a one day training programme which also focused on the same key areas identified in 1-3 above but in addition it concentrated on how to assess and prescribe exercises for persons with COPD and how to exercise safely. To enhance quality assurance of delivery during the 8 weeks of the

programme members of the research team who developed and delivered the training programme observed one of the 2 hour sessions.

PARTICIPANTS EXPERIENCES OF BEING INVOLVED IN THE PRINCE SEPRP

Clients' perceptions of self management following a PRINCE (SEPRP).

Methods

Grounded theory was used to identify participant's experiences of participating on the SEPRP and the factors that facilitated or hindered participation.. Grounded theory examines the meaning of events for people and the underlying social processes that shape interactions (Glaser 1978; Chenitz & Swanson, 1986, Smith & Biley, 1997). It is a way of "discovering the main concern of patient's families or health professionals and how those people manage such concerns" (McCallin 2003, p202). It is also most appropriate when examining situations and circumstance which require individuals to adapt (Benoliel, 1996). A grounded theory methodology based on the work of Corbin and Strauss (2008), was used to guide this element of the study. This approach was most appropriate as there was limited knowledge as to the impact of a SEPRP delivered in the primary health care setting on a person's management and adaptation to living with their COPD.

In keeping with grounded theory purposive sampling was used initially followed by theoretical sampling. Informed consent was obtained from all participants and ethical approval was obtained from the National University of Ireland, Galway Research Ethics Committee. Interviews lasted between 40-60 minutes and were transcribed verbatim. The constant comparative technique (Corbin & Strauss 2008) was used to analyse data. In total sixteen in-depth, one-to-one interviews (guided by an interview guide) were completed two to six weeks after completion of the SEPRP. Participant demographics are provided in (**Table 5**)

Findings

The findings revealed that the SEPRP had provided participants with more knowledge which allowed them to better self manage their condition and make informed decisions. Participants reported that they now ‘knew’ more about; how to control their breathing, when and how to take their medications, how to recognise a chest infection and what to do.

“Everything I learnt in there, comes up now at one time or another in the day. You know how to handle it now which you wouldn’t have a flaming clue before. I’d have a Ventolin® inhaler and I’d be dragging out of that on a continuous basis ... one would last me almost two weeks now, whereas I was getting through one every two or three days before. It certainly helped me big time.” (G545)

“I know now what's wrong with me and I'm able to manage it. Do you know I used panic when I'd get the breathlessness before this and I didn't even know how to breathe.” (G1931)

Participants reported that they were initially sceptical about the exercise part of the programme and were afraid to exercise because of breathlessness however they came to recognise its benefits.

“I really didn’t have any belief in it (the SEPRP) but as it went on, I got more and more belief in it and I found out it was good for me (exercise). Every bit of exercise I did, I felt great the next day ... I can guarantee I know it was for my good and that’s for sure (Later in the interview) ... I can’t believe it I haven’t used (one type of medication) since the programme ... the more I exercise the more I don’t seem to need it” (G545)

In addition participants reported a shift in their relationship with health care professionals in that a more collaborative relationship had developed and they now felt empowered in terms of knowing what to ask health professionals for and how to self-manage.

“The information on what inhalers you take, whether they're preventatives or relievers (was good). I've got two lots of preventatives and at that point I didn't have a reliever. So, that made me go to the doctor and say I felt I really needed something for the odd times I get a little bit breathless or whatever. Now I have the Bricanyl® or whatever it's called.” (G538)

Participants also described how working in the group made them more motivated to persist with the programme. Working in the group helped focus participants on what they wanted to achieve, there was a competitive element at times but also a realisation of the need to exercise to prevent deterioration.

“... you were looking at whoever was sitting beside you and saying I’m certainly going to be as good as you. (Later in the interview) ... It was good the group because you saw better than yourself and a lot worse than yourself. I want to be as good as him and Jesus, I certainly don’t want to be going down the same road as him ... I knew if I didn’t stop the carry-on I was going on with, it was down that back road I was going big time.” (G545)

Finally and most importantly following the PRINCE SEPRP many participants were implementing what they had learnt and were beginning to embed the knowledge and skills into their everyday lives.

“...the exercises they gave for the pursed-lip breathing I found very good when I lie down at night-time because I could never, once I lay down I’d start coughing and that would be it. But doing the exercises for a few minutes before I lay down and continuing it when I lay down, I wasn’t coughing half as much so that made an awful difference. (G1739)

“I found this puff think (the huff cough) helps you get rid of the phlegm...” (G533)

In summary all participants had enjoyed the programme; the involvement of different health professionals and the teaching strategies used were appropriate. The findings therefore, indicate that nurse led primary care based structured education programmes have the potential to empower clients with COPD to better self-manage their chronic health condition.

Limitations of the Study

Prince is a cluster randomised control trial in primary care. The trial did not include people with an FEV1 less than 30. It is not known therefore if the programme is appropriate for these participants or not. Recruitment of participants necessitated dividing practices into 4 groups

and running the SEPRP for each group at different times. It is not known if this had an impact or not.

Conclusion

The PRINCE study has demonstrated that nurses working in primary care can have a key role in pulmonary rehabilitation. Their expertise was essential to the development of the PRINCE SEPRP and they also were able to facilitate the programme effectively. The philosophy of PRINCE was based on empowerment and the programme activities were designed to maximise client empowerment. An empowerment approach aims to give a person the knowledge, confidence and skills they need to self-manage (Sigurdardottir & Jonsdottir 2008). Nagelkerk *et al.* (2006) found that participants who felt empowered were more proactive and tended to integrate the self-management of their diabetes into their daily lives. Being empowered therefore positively influences the degree of personal responsibility a person feels and their health behaviours (Glasgow *et al.* 1992, Hurley & Shea 1992). Nurses working in the community have the opportunity to work with people in empowering ways, and PRINCE is one example of how this can be operationalised in practice.

References

- Bandura, A. (1997). The anatomy of stages of change [editorial]. *American Journal of Health Promotion*, 12(1), 8-10.
- Batten, L. (1999) The Transtheoretical model: profiling smoking in pregnancy. In E. Perkins, I. Simnett & L. Wright. (eds.) *Evidence based health promotion*. John Wiley & Sons: Chichester.
- Benoliel, JQ. (1996) Grounded theory and nursing knowledge. *Qualitative Health Research*. 6, p406-428.
- Bodenheimer, T., Wagner, E. H., & Grumbach, K. (2002, October 9). Improving primary care for patients with chronic illness. *Journal of the American Medical Association*, 288(14), 1775-1779.
- Burnard, P. (1991) A method of analysing interview transcripts in qualitative research. *Nurse Education Today* 11, (6) 461-466

- CHAI (2006) *Commission for Health Care Audit and Inspection: A National Study of Chronic Obstructive Pulmonary Disease* London:UK.
- Chentiz, WC. & Swanson, JM. (1986) From practice to grounded theory. *Qualitative Research in Nursing*. Massachusetts: Addison-Welsey.
- Corbin J, Strauss A: *Basics of Qualitative Research* 3rd edn. Thousand Oaks, California: Sage Publications; 2008.
- DH (2005) Department of health *Structured patient education in diabetes: Report from the Patient Education Working Group* Department of Health; Diabetes UK. Crown
- DH (2010) Department of Health *Consultation on a Strategy for Services for Chronic Obstructive Pulmonary Disease (COPD) in England* Crown: UK.
- Effing T, Monninkhof EEM, van der Valk PP, Zielhuis GGA, Walters EH, van der Palen JJ, Zwerink M. (2007) Self-management education for patients with chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews*, Issue 4. Art. No.: CD002990.
- Glaser, BG. (1978) *Theoretical Sensitivity*. San Francisco, USA. The Sociology Press.
- Glasgow, R. E., D. J. Toobert, *et al.*. (1992). "Improving self-care among older patients with Type II diabetes: The "sixty something..." study." *Patient Education and Counseling* 19: 61-74.
- Hurley C & Shea, CA. (1992) Self-efficacy: Strategy for enhancing diabetes self-care, *Diabetes Educator* 18: 146–150
- Keleher, H. Parker, R. Abdulwadud, O. Francis, K. (2009) Systematic review of the effectiveness of primary care nursing. *International Journal of Nursing Practice* 15: 16–24
- Lacasse, Y. Goldstein, R. Lasserson, T. & Martin, S. (2006) Pulmonary rehabilitation for chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews*, 49.
- Lincoln, YS. & Guba, EG. (1985) *Naturalistic Inquiry*. Newbury Park, California: Sage.
- Murphy, K. Casey, D. Devane, D. Cooney, A. McCarthy B. Mee, L. Nichulain M. Murphy, AW. Newell, J. and O' Shea, E. (2011) A cluster randomised controlled trial evaluating the effectiveness of a structured pulmonary rehabilitation education programme for improving the health status of people with chronic obstructive pulmonary disease (COPD): The PRINCE Study protocol. *BMC Pulmonary Medicine* 11:4 (18 January 2011) Available at <http://www.biomedcentral.com/1471-2466/11/4>
- Macnee,C.& McCabe,S. (2004).The Transtheoretical model of behavior change and smokers in southern Appalachia. *Nursing Research*, 53(4), 243-250.
- Mathers C, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 2006, e442.

McCallin, A. (2003) Designing a grounded theory study: some practicalities. *Nursing in Critical Care*. 8(5), p203-208.

McDonnell, TJ. Concannon, D. & Connor, MC. *et al.* (2007) Efficacy of Pulmonary Rehabilitation in an Irish Population. *Irish Medical Journal*, Online Journal 100, (3).

Nagelkerk J. , Reick, K. Meengs,L. (2006) : Perceived barriers and effective strategies to diabetes self-management. *Journal of Advanced Nursing*: 54(2): 151-158.

NICE:National Institute for the Health and Clinical Excellence NICE: *Guidance on the use of patient-education models for diabetes.*; Technology Appraisal 60. National Institute for Clinical Excellence; UK

Nici L, Donner C, Wouters E, Zuwallack R, Ambrosino N, Bourbeau J, Carone M, Celli B, Engelen M, Fahy B, Garvey C, Goldstein R, Gosselink R, Lareau S, MacIntyre N, Maltais F, Morgan M, O'Donnell D, Prefault C, Reardon J, Rochester C, Schols A, Singh S, Troosters T; ATS/ERS Pulmonary Rehabilitation Writing Committee (2006). American Thoracic Society/European Respiratory Society statement on pulmonary rehabilitation. *Am J Respir Crit Care Med*. Jun 15;173(12):1390-413.

Norris CM (1982) *Concept clarification in nursing*. Rockville, MD, Aspen.

Prochaska, J. and C. DiClemente (1984). *The Transtheoretical approach: Crossing traditional boundaries of therapy*. Homewood, Ill., Dow Jones-Irwin

Prochaska, J.O., Reeding, C.A., Evers, K.E. (2002) The transtheoretical model and stages of change Glanz, K., RimerB.K., LewisF.M. Health behaviour and health education: Theory, research and practice 3rd ed 99–120 San Francisco, CA: Jossey-Bass 2002.

Quality and Outcomes Framework 2008/2009.

Reeves, L. M., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. (2004) substitution of doctors by nurses in primary care. *Cochrane Database of Systematic Reviews*, Issue 4. Art No: CD001271. DOI: 10.1002/14651858.CD001271.pub2.

Ries, A L. Bauldoff, GS. & Carlin, B. *et al.* (2007) Pulmonary Rehabilitation Executive Summary: Joint American College of Chest Physicians/American Association of Cardiovascular and Pulmonary Rehabilitation Evidence-Based Clinical Practice Guidelines. *Chest*, 131: 1S-3.

Rodgers BL (1989) Concepts, analysis and the development of nursing knowledge: the evolutionary cycle. *Journal of Advanced Nursing* **14**, 330-335.

Sigurdardottir, A. & Jonsdottir, H.(2008) Empowerment in diabetes care : towards measuring empowerment. *Scandinavian Journal of Caring Science* 22: 284-291.

Smith, K. and Biley, F. (1997) Understanding grounded theory: principles and evaluation. *Nurse Researcher*. 4(3), 17-30.

Sutton, S. (2001). Back to the drawing board? A review of applications of the transtheoretical model to substance abuse. *Addictions* 96, 175-186.

Thomson, P. (2000) Exercise and health; a review of the usefulness of behavioural change theories in helping patients to become habitually active. *International Journal of Health Promotion and Education*. 38(1), 10-18.

Thorne, S., Reimer Kirkham, S. & O’Flynn-Magee, K. (2004) The Analytic Challenge in Interpretive Description. *International Journal of Qualitative Methods* 3 (1) April, 2004 Article 1. Accessed July 2010 from http://www.ualberta.ca/~iiqm/backissues/3_1/pdf/thorneetal.pdf

Troosters, T. Casaburi, R. Gosselink, R. & Decramer, M. (2005) Pulmonary Rehabilitation in Chronic Obstructive Pulmonary Disease. *American Journal of Respiratory and Critical Care Medicine*. 172: 19-38.

World Health Organisation (2008) *The Global Burden of disease: 2004 update*. World Health Organization, Geneva; Switzerland.

Wouters, EFM. (2002) Economic analysis of the confronting COPD survey: an overview of results. *Respiratory Medicine*, 97 (Suppl. C): S3–S14.

Table 1: PRINCE programme philosophy

PRINCE Programme Philosophy
<p>We believe that empowering clients is of fundamental importance to successful client education programmes. In our opinion an ‘empowerment philosophy’ is expressed through the ways in which the programme is delivered. Facilitators will promote clients’ autonomy by working collaboratively with them to develop goals, helping them to make informed decisions, giving them the knowledge and skills to self manage but accepting their right to make their own choices. The programme is individualised therefore to meet the needs of each client. It is important that facilitators use the principles of adult learning to guide programme delivery. Adult learning puts the learner at the centre and aims to meet their learning needs. An assessment of learner needs therefore will be fundamental to the programme. Further, it is recognised that adults learn what they perceive to be important. Consequently, the programme will use participants’ experiences of living with COPD to ground the content. This is sometimes referred to as experiential learning as it acknowledges that learners can learn from their own and others experiences. Real life examples will be used to help participants to ‘test’ out what they have learnt and what they would do in certain situations, for example, an acute exacerbation. The underlying goal of the PR programme is to promote self-management through providing clients with the knowledge, skills, confidence and resources to make choices. The programme will be considered successful if clients perceive they have the power, knowledge, skills, control and resources to manage their illness and have confidence in their expertise to self-manage.</p>

Table 2: Demographic profile of health professionals

Current Post Held	Gender	Age	Highest Level of Educational Attained:
Advanced Nurse Practitioner (Respiratory-Currently working with COPD Clients)	Female	30-39	Post Graduate Qualification
Chair of Irish National COPD Strategy Group	Female	50-59	Post Graduate Qualification
Clinical Nurse Specialist (Respiratory-Currently working with COPD Clients))	Female	20-29	Post Graduate Qualification
Clinical Nurse Specialist (Respiratory-Currently working with COPD Clients))	Female	30-39	Post Graduate Qualification
Dietician (Currently Working with COPD Clients)	Female	20-29	Third Level Degree
General Practitioner	Male	30-39	MRCGP
General Practitioner	Male	30-39	MRCGP
General Practitioner	Male	40-49	MRCGP
General Practitioner	Male	40-49	MRCGP
General Practitioner	Male	40-49	MRCGP
General Practitioner	Male	50-59	Post Graduate Qualification
General Practitioner	Male	60-69	Post Graduate Qualification
General Practitioner Trainee	Female	20-29	Third Level Degree
Physiotherapist (Currently Working with COPD Clients)	Female	20-29	Post Graduate Qualification
Physiotherapist (Currently Working with COPD Clients)	Female	30-39	Post Graduate Qualification
Physiotherapist (Currently Working with COPD Clients)	Male	30-39	Third Level Degree
Physiotherapist (Currently Working with COPD Clients)	Female	30-39	Post Graduate Qualification
Primary Care Nurse	Female	30-39	Third Level Diploma
Primary Care Nurse	Female	30-39	Third Level Diploma
Primary Care Nurse	Female	30-39	Certificate in Nursing
Primary Care Nurse	Female	40-49	Third Level Diploma
Primary Care Nurse	Female	40-49	Third Level Diploma
Primary Care Nurse	Female	40-49	Post Graduate Qualification
Primary Care Nurse	Female	50-59	Post Graduate Qualification

Table 3: Findings from interviews with health care professionals

Pre-requisites to developing the programme
• Multi-disciplinary team to deliver content.
• Pre-programme assessment important.
• Space to run the programme needs to be considered.
• To identify people- consider using COPD medications to search GP lists
Proposed Programme Content : Examples

<ul style="list-style-type: none"> • Individualised exercise programme. • Information and knowledge to promote an understanding COPD. • Breathing techniques. • Medications; Oxygen. • Managing anxiety/stress use relaxation techniques. • End of life issues. • Social component is important to motivation. • Deliver content in a way that empowers people to live well.
Issues to consider
<ul style="list-style-type: none"> • Transport needs to be considered as programme has to be accessible. • Maintaining motivation and attendance is difficult so this needs to be considered. • Consider supplementing PR with home exercise. • Literacy is an issue for some people so need to be cognisant of this • Knowing how much to push is key. • Think about how to maintain community links as part of motivation. • Consider involving the newly created Primary Care Teams. • Think about embedding a support group function.

Table 4: Content of the PRINCE SEPRP

Week	Content	Educator
Week 1	Setting the scene Introduction to exercise	Practice Nurse Physiotherapist
Week 2	Managing medications Exercise programme	Practice Nurse Physiotherapist
Week 3	Exercise programme Exercise programme	Physiotherapist Physiotherapist
Week 4	Managing breathlessness Exercise programme	Practice Nurse Physiotherapist
Week 5	Knowing and managing your symptoms Exercise programme	Practice Nurse Physiotherapist
Week 6	Recognising and managing acute exacerbations Exercise programme	Practice Nurse Physiotherapist
Week 7	Exercise programme Managing stress and anxiety	Physiotherapist Practice Nurse
Week 8	Exercise programme Where to now?	Physiotherapist Practice Nurse

Table 5: Age, Marital status, educational level and occupation of participants

Gender	Marital status	Education Level	Occupation
Male (n=10)	Single (n =5)	Primary Level (n=9)	Self –employed (n=1)
Female (n=8)	Male (n=8)	Secondary level (n=7)	Unemployed (n=2)
	Widowed (n=3)	Third Level (n=2)	Retired (n=15) Of this five retired early due to disability
	Separated (n=2)		Retired (n=10)