Better lung health for all

An Introduction to Key Concepts in Delivering Education in Pulmonary Rehabilitation

Dr Louise Sewell
Assistant Professor in Occupational Therapy

What is the guidance
for PR education?

What is the guidance for PR education?

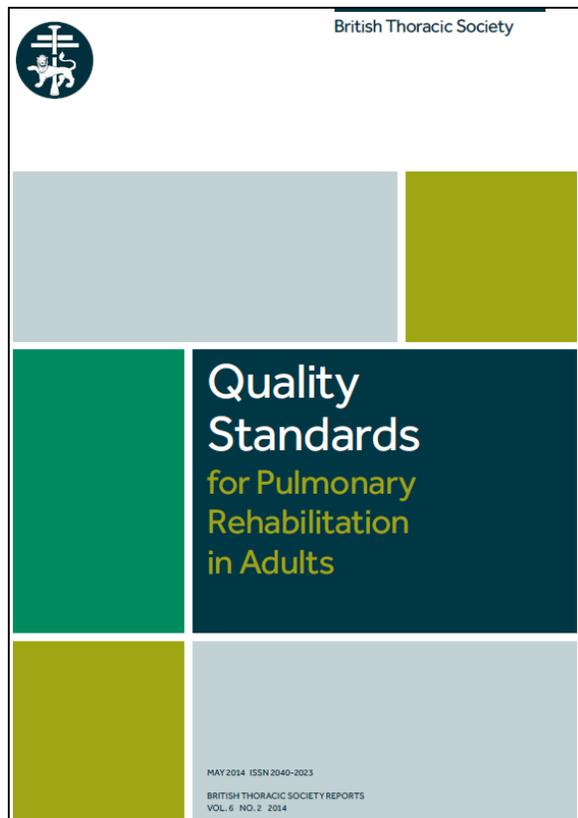# BTS quality standards for Pulmonary Rehabilitation in adults (2014)

Summary of quality statements

Quality Standards for Pulmonary Rehabilitation in Adults

British Thoracic Society

MAY 2014 ISSN 2040–2023
BRITISH THORACIC SOCIETY REPORTS
VOL. 6 NO. 2 2014

| No.	Quality Statement
1	Referral for pulmonary rehabilitation: a. People with COPD and self reported exercise limitation (MRC dyspnoea 3–5) are offered pulmonary rehabilitation. b. If accepted, people referred for pulmonary rehabilitation are enrolled to commence within 3 months of receipt of referral.
2	Pulmonary rehabilitation programmes accept and enrol patients with functional limitation due to other chronic respiratory diseases (for example bronchiectasis, ILD and asthma) or COPD MRC dyspnoea 2 if referred.
3	Referral for pulmonary rehabilitation after hospitalisation for acute exacerbations of COPD: a. People admitted to hospital with acute exacerbations of COPD (AECOPD) are referred for pulmonary rehabilitation at discharge. b. People referred for pulmonary rehabilitation following admission with AECOPD are enrolled within one month of leaving hospital.
4	Pulmonary rehabilitation programmes are of at least 6 weeks duration and include a minimum of twice-weekly supervised sessions.
5	Pulmonary rehabilitation programmes include supervised, individually tailored and prescribed, progressive exercise training including both aerobic and resistance training.
6	Pulmonary rehabilitation programmes include a defined, structured education programme.
7	People completing pulmonary rehabilitation are provided with an individualised structured, written plan for ongoing exercise maintenance.
8	People attending pulmonary rehabilitation have the outcome of treatment assessed using as a minimum, measures of exercise capacity, dyspnoea and health status.
9	Pulmonary rehabilitation programmes conduct an annual audit of individual outcomes and progress.
10	Pulmonary rehabilitation programmes produce an agreed standard operating procedure.

British Thoracic Society. *Quality standards for pulmonary rehabilitation in adults*. London: BTS, 2014. www.brit-thoracic.org.uk/guidelines-and-quality-standards/pulmonary-rehabilitation-quality-standards/

Pre Covid Education in PR

- PR education traditionally didactic ('chalk and talk')

- There is the opportunity to educate with 20-50% of current programmes devoted to formalised group education (Blackstock and Evans 2019)

- Topics such as advance directives, early recognition of and treatment of exacerbations, promotion of physical activity and adherence to exercise have been added.

- There is still no clear consensus regarding the content of education programmes (Blackstock and Evans 2019)
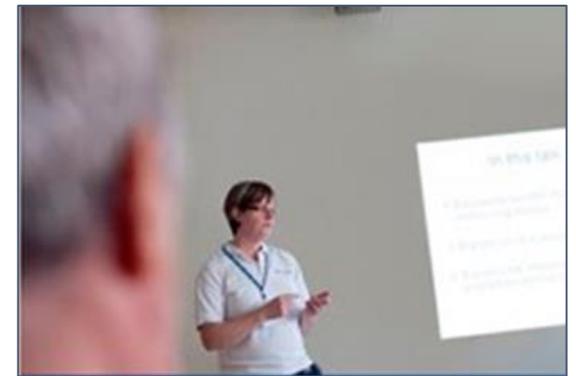
What should be included?

BTS guidelines

NICE accredited
www.nice.org.uk/accreditation

British Thoracic Society guideline on pulmonary rehabilitation in adults

‣ Anatomy, physiology, pathology—in health and in chronic respiratory disease.

‣ Medication (including oxygen therapy).

‣ Smoking cessation.

‣ Dyspnoea/symptom management.

‣ Chest clearance techniques.

‣ Energy conservation/pacing.

‣ Patient support groups.

‣ Nutritional advice.

‣ Managing travel.

‣ Benefits system and welfare rights.

‣ Advance directives.

‣ Anxiety management and relaxation.

‣ Goal setting and rewards.

‣ Relaxation.

‣ Confidence, self-efficacy and self-management.

‣ Identifying and changing beliefs about exercise and health-related behaviours.

‣ Loving relationships/sexuality.

‣ Exacerbation management (including coping with setbacks and relapses).

‣ The benefits of physical exercise.

‣ Opportunities to exercise after pulmonary rehabilitation.

(Bolton et al 2013)

Review article

A systematic review of the content and delivery of education in pulmonary rehabilitation programmes

N.J. Roberts[a,*], L. Kidd[b], K. Kirkwood[c], J. Cross[d], M.R. Partridge[e]

Table 3
Topics not well covered across the extracted studies.

Coping with lung disease	How to improve confidence, self-efficacy and self-management[a]	Benefits and welfare rights[a]
Travel[a] and leisure activities	Patient Support groups[a]	Medical tests
Oxygen[a]/NIV	Swallowing and COPD	Self-management
Smoking cessation[a]	Communicating with your healthcare provider	Action plans
Sexuality[a]	Family role	Identifying and changing beliefs and behavior[a]
Falls prevention	Sleep	Chest clearance[a]
Continence and COPD	Psychological impacts	Indoor and outdoor pollution
Home adaptation	End of life decisions	Advance directives[a]

[a] These topics are identified as suggested topic areas in the BTS guidelines 2013 [26].

**What should be included?
Are we co-creating the curriculum?**

What is the existing guidance for PR education?

ORIGINAL ARTICLE

Education in Pulmonary Rehabilitation: The Patient's Perspective

Julie S. Wilson, PhD, Brenda O'Neill, PhD, Jacqueline Reilly, PhD, Joseph MacMahon, FRCP, Judy M. Bradley, PhD

Wilson et al 2007

- Qualitative study of 32 people living with COPD across 6 focus groups.
- 6 education topics identified:

- ✓ disease education
- ✓ management of breathlessness
- ✓ management of an exacerbation
- ✓ medication
- ✓ psychosocial support
- ✓ welfare and benefits systems.

- Preference for group information sessions provided by "knowledgeable people" speaking layman's language
- Content should be supported by written information.

What should be included?
Are we co-creating the curriculum?
Holland et al (2019)

What is the existing guidance for PR education?

Comprehensive pulmonary rehabilitation for interstitial lung disease: A consensus approach to identify core education topics

Anne E Holland[a,b,c,*], Alice Watson[b], Ian Glaspole[d,e]

Table 2
Education topics for pulmonary rehabilitation in interstitial lung disease.

Core education topics
1. Staying well with ILD – including regular vaccination, importance of exercise, good nutrition, regular vaccination, managing flare ups
2. Keeping fit and strong after pulmonary rehabilitation
3. Using oxygen therapy
4. Managing breathlessness and cough
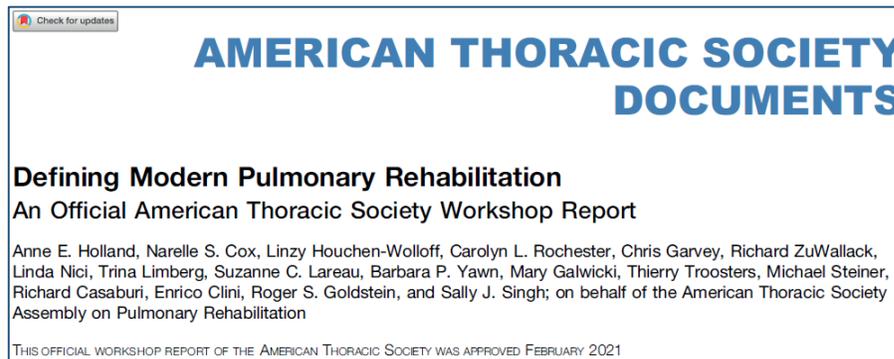5. Managing fatigue
6. Managing anxiety, depression and panic

Optional education topics
1. Accessing home care and support for both patients and carers
2. End of life care and advance directives
3. Tuning up the system – managing co-existing medical conditions
4. Managing medications and side effects

Defining Modern Pulmonary Rehabilitation
ATS Workshop report
(Holland et al 2021)

PROGRAM COMPONENTS

- Upper limb training
- ACT for bronchiectasis
- ACT for cystic fibrosis
- Structured education
- Individualized education
- Self-management training
- Goal setting
- Physical activity counselling
- Smoking cessation support
- Individualized action plan for frequent exacerbators
- Home exercise program (aerobic/resistance) to maximize gains in exercise performance during the program
- Maintenance exercise training

Covered in pulmonary rehabilitation education content?

AMERICAN THORACIC SOCIETY DOCUMENTS

Defining Modern Pulmonary Rehabilitation
An Official American Thoracic Society Workshop Report

Anne E. Holland, Narelle S. Cox, Linzy Houchen-Wolloff, Carolyn L. Rochester, Chris Garvey, Richard ZuWallack, Linda Nici, Trina Limberg, Suzanne C. Lareau, Barbara P. Yawn, Mary Galwicki, Thierry Troosters, Michael Steiner, Richard Casaburi, Enrico Clini, Roger S. Goldstein, and Sally J. Singh; on behalf of the American Thoracic Society Assembly on Pulmonary Rehabilitation

THIS OFFICIAL WORKSHOP REPORT OF THE AMERICAN THORACIC SOCIETY WAS APPROVED FEBRUARY 2021

Available Literature Evaluating Education in PR
Blackstock et al 2018 p773

What is the guidance for PR education?

- Health education impacts five domains:

Knowledge

Perception of benefit

Health beliefs

Health behaviours

Health Outcomes

?

?

WORKSHOP REPORT

Chronic Obstructive Pulmonary Disease Education in Pulmonary Rehabilitation
An Official American Thoracic Society/Thoracic Society of Australia and New Zealand/Canadian Thoracic Society/British Thoracic Society Workshop Report

Felicity C. Blackstock, Suzanne C. Lareau, Linda Nici, Richard ZuWallack, Jean Bourbeau, Maria Buckley, Steven J. Durning, Tanja W. Effing, Ellen Egbert, Roger S. Goldstein, William Kelly, Annemarie Lee, Paula M. Meek, and Sally Singh; on behalf of the American Thoracic Society, Thoracic Society of Australia and New Zealand, Canadian Thoracic Society, and British Thoracic Society

THIS OFFICIAL WORKSHOP REPORT WAS APPROVED BY THE AMERICAN THORACIC SOCIETY March 2018, BY THE THORACIC SOCIETY OF AUSTRALIA AND NEW ZEALAND February 2018, BY THE CANADIAN THORACIC SOCIETY February 2018, AND BY THE BRITISH THORACIC SOCIETY February 2018

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COPD Knowledge Questionnaires:

- Bristol COPD Knowledge Questionnaire – BCKQ (White et al 2006)

- Lung Information Needs Questionnaire – LINQ (Hyland et al 2006)

- COPD Knowledge Questionnaire -COPD-Q (Maples et al 2010)

- Understanding COPD Questionnaire – UCOPD (O'Neill et al 2012)

Table 3. Patient knowledge questionnaires in chronic obstructive pulmonary disease

Questionnaire	Description	Scoring	Psychometric Properties	Time to Complete (Min)
BCKQ (31)	Assesses patient's knowledge about topics related to COPD (e.g., symptoms, exercise, preventative measures, inhaled steroids).	65 items. Scoring of true +1 and 0 false. Scoring based on percentage of items answered correctly.	Test retest $r = 0.71$	15–20
COPD-Q (32)	Assesses knowledge of COPD.	13 items, scores range from 0 to 13 based on correct responses; higher scores indicate greater correct responses.	Cronbach's $\alpha = 0.73$ Test retest ICC = 0.90	Not available
LINQ (33)	Assesses patients' need for information about their COPD to guide clinical encounters. Six domains include: disease knowledge; medicines; self-management; smoking; exercise; and diet.	17 items. Scoring based on summing the items from each domain. Scores range from 0–25 with higher scores indicating higher need for information.	Cronbach's $\alpha = 0.72$ Test retest Each domain $r = 0.66$–0.98	6
UCOPD (34)	Assesses understanding of COPD, managing symptoms of COPD and accessing help and support (part A, 18 items) and satisfaction with education program (part B, 6 items).	24 items. Scoring calculated on percentage for parts A & B with scores ranging from 0 to 100% (greater understanding, confidence etc.).	Total score $r = 0.89$ Cronbach's $\alpha = 0.62$ Test retest Section A ICC range = 0.87–0.96 Section B, Wilcoxon signed rank test (no difference) $P > 0.05$ Cronbach's α range = 0.78–0.95	7

Definition of abbreviations: BCKQ = Bristol COPD Knowledge Questionnaire; COPD = chronic obstructive pulmonary disease; COPD-Q = COPD Knowledge Questionnaire; ICC = intraclass correlation coefficient; LINQ = Lung Information Needs Questionnaire; UCOPD = Understanding COPD questionnaire.

Blackstock et al 2018 p.772

Potential Barriers to learning in PR Education

What are the needs of our learners and educators?

Effects of Psychological Factors on Learning

Effects of Cognitive Impairment on Learning

Effects of Health Literacy on Learning

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Do you measure these?

Blackstock et al 2018

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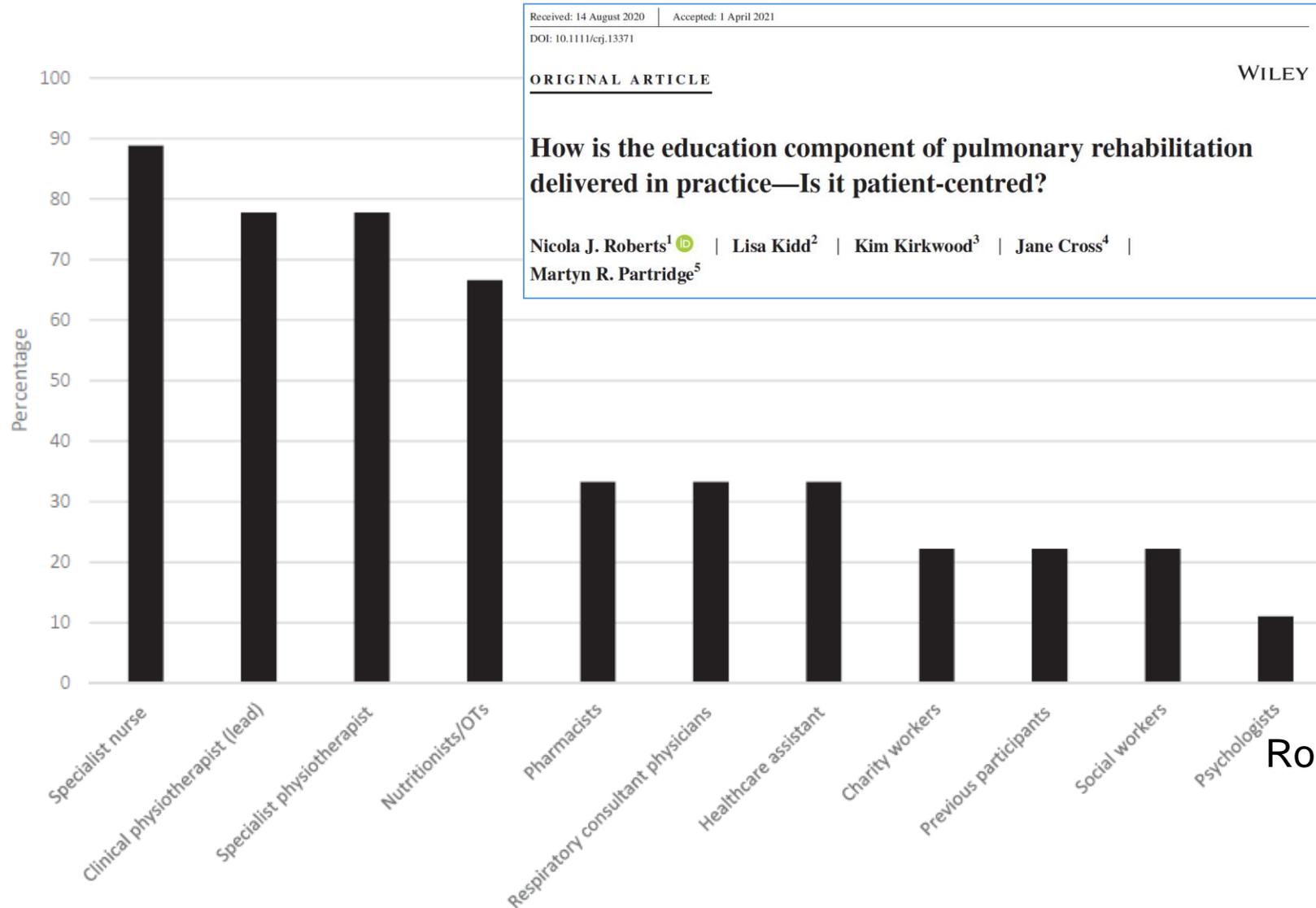Association of Respiratory Nurse Specialists

- Health literacy is:

"The personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health."
WHO https://www.who.int/healthpromotion/conferences/7gchp/track2/en/

- Health information is currently too complex for 43% of the population in England Rowlands et al (2015)

- Low health literacy levels linked to low socioeconomic status and is an determinant of health

What are the needs of our Educators? Who are they?

What are the needs of our learners and educators?

How is the education component of pulmonary rehabilitation delivered in practice—Is it patient-centred?

Nicola J. Roberts[1] | Lisa Kidd[2] | Kim Kirkwood[3] | Jane Cross[4] | Martyn R. Partridge[5]

Roberts et al 2021

What are the needs of our Educators?

- Is specialist clinical knowledge enough to be able to teach effectively (Bourne et al 2017)?

- Are educators peer assessed?

- Is patient or learner feedback collected?

- Are health professionals supported to identify development needs as educators?

- How confident are we in managing group dynamics?

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Management of Group Dynamics: Know your group...

Stop them tactfully and limit speaking time

Against everyone and everything – try to use their experience where you can so they are listened to

Can be very helpful – thank them and use their contribution

The 'wise one'

The talker

The 'against member'

The 'tricky one'

The 'shy one'

Try to involve in non-threatening ways e.g. Ask them easy questions and then thank them for their contribution – make them feel validated

Stay calm – try to limit their contribution by involving other group members ' That's interesting – what do others think?'

The 'knower'

Anxious to show you what they know – use their contributions but try to avoid them from alienating the rest of the

Options for Remote Education in PR

	Synchronous	Asynchronous
Deliver remote group education sessions using MS teams, Zoom, Attend Anywhere etc.	✓	✗
Established Online Self-management platforms	✓	✓
Provide access to existing video content such as: DVDs, videos on public platforms e.g. YouTube	✗	✓
Provide access to written materials (hard copies or online)	✗	✓

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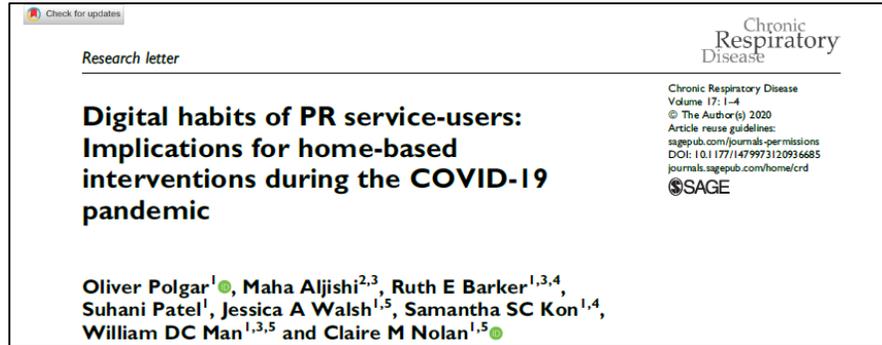
Impacting both patient and provider...

Digital Access

+ or -

Digital Confidence

=

Digital Inequalities

https://www.pickpik.com/despaired-businessman-business-despair-disappointment-frustration-4634

Is Online or Digital Education in PR Possible? Who has access?

Chronic Respiratory Disease
Research letter

Digital habits of PR service-users: Implications for home-based interventions during the COVID-19 pandemic

Chronic Respiratory Disease
Volume 17: 1–4
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DOI: 10.1177/1479973120936685
journals.sagepub.com/home/crd

Oliver Polgar[1], Maha Aljishi[2,3], Ruth E Barker[1,3,4], Suhani Patel[1], Jessica A Walsh[1,5], Samantha SC Kon[1,4], William DC Man[1,3,5] and Claire M Nolan[1,5]

- n=170 patients either receiving or waiting for PR at Harefield Hospital from 24.02.20 to 09.03.20

- Mean age (SD) 72(10) yrs, 52% female

- 89% reported that they had access to a mobile phone

- 51% used the internet daily

- 31% had never accessed the internet

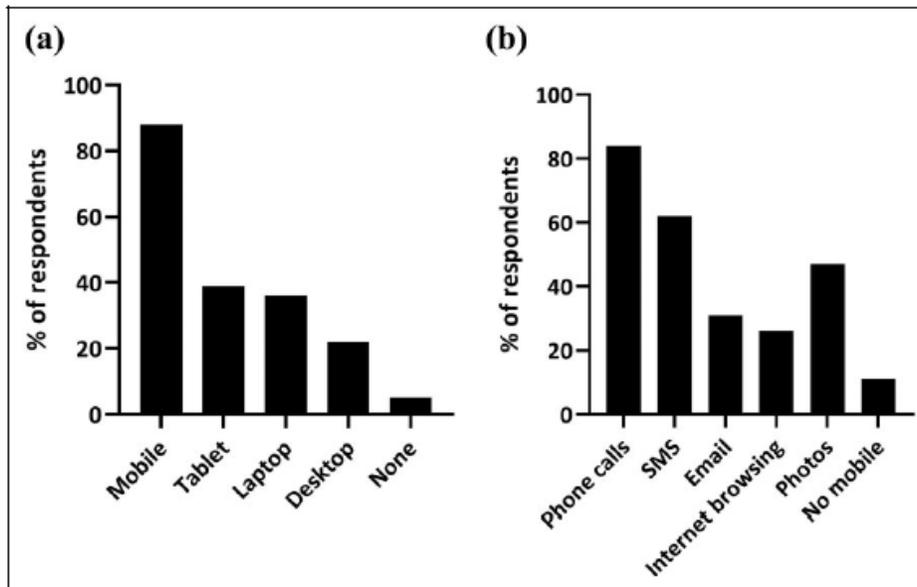- 45% interested in accessing self management information digitally

Figure 1. (a) Percentage of respondents with access to digital devices (b) Percentage of respondents using mobile phone functions. SMS: Short Message Service (Text messaging).

Is Online or Digital Education in PR Possible?
So what happened after the COVID-19 pandemic?

Research Letter

Digital habits of pulmonary rehabilitation service-users following the COVID-19 pandemic

Oliver Polgar, MSc[1], Suhani Patel, MSc[1,2], Jessica A Walsh, MPH[1],
Ruth E Barker, PhD[1,2,3], Karen A Ingram, BSc[4], Samantha SC Kon, PhD[1,5],
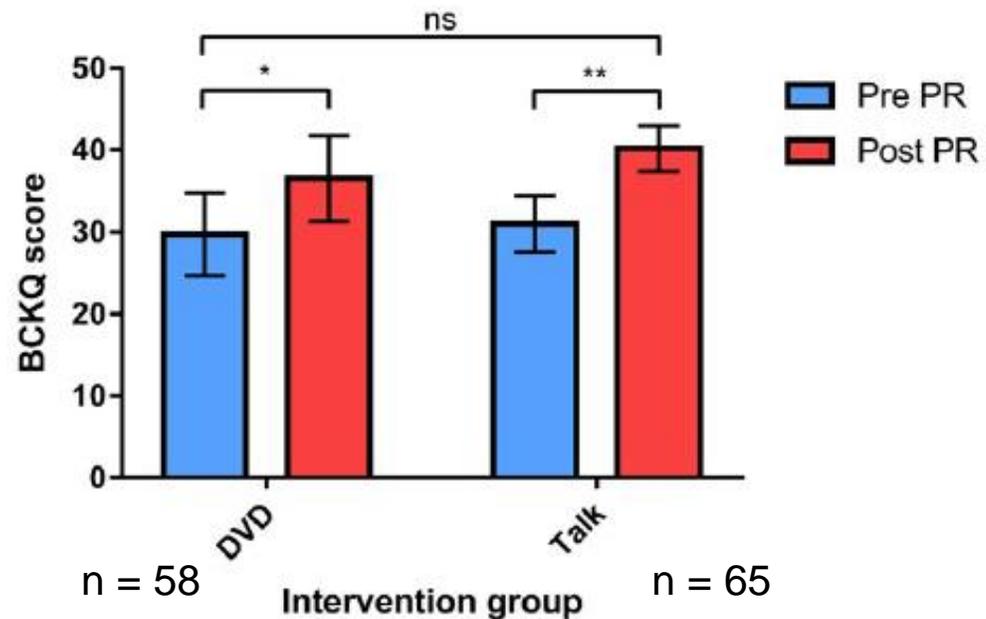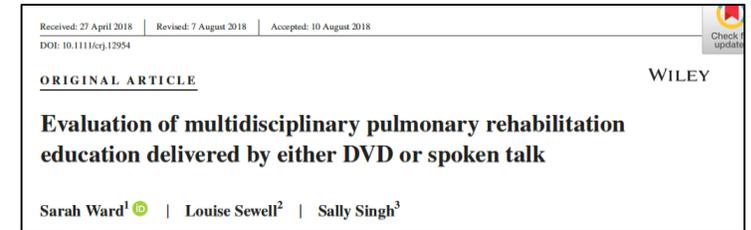William DC Man, PhD[1,2,4,*] and Claire M Nolan, PhD[1,6,*]

- Compared Cohort 2021 with Cohort 2020 (Polgar et al 2020)

- 17% had never accessed the internet compared to 33% in 2020 cohort

- digital literacy skills may be better amongst those currently on pulmonary rehabilitation waiting lists compared with before the COVID-19 pandemic.

- But – no increase in patient preference for web-based pulmonary rehabilitation 14% for 2020 cohort vs 15% for 2021 cohort

Spoken sessions vs. videoed content

ORIGINAL ARTICLE

Evaluation of multidisciplinary pulmonary rehabilitation education delivered by either DVD or spoken talk

Sarah Ward[1] | Louise Sewell[2] | Sally Singh[3]

- PR based in two acute hospitals in Leicester, UK

- Comparison of education delivered via DVD versus face-to-face delivery

- No difference in improvement in BCKQ scores between groups

- No significant difference in patient satisfaction

n = 58   n = 65

Ward et al 2018 Clin Resp Jnl

Pedagogic Principles to Guide PR Education

- Principles of andragogy state that learning should:
    - Be active
    - Be meaningful to the patient
    - Be supported by concrete and constructive feedback
    - Include strong encouragement to become active in their own learning

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Effective delivery strategies

How can we enhance the design and delivery of face-to-face and remote PR education?

Consider:
- Duration of sessions - attention spans (15-20 mins)
- Peer-to-peer learning
- Demonstrations
- Case studies
- Don't forget low/no tech strategies for audience responses
- Flipped classroom techniques

The flipped classroom in adult education

- Involves the content being introduced outside the 'classroom' and activities based on this content taking place in the 'classroom'

- Can be enquiry or problem-based

- Techniques often referred to as 'blended learning' if content is placed online

- Evidence of improved outcomes in adult education and is commonly used

- BUT can or should this be transferred to PR settings?

The flipped classroom in adult education

How can we enhance the design and delivery of remote PR education?

- Content introduced outside the 'classroom' and activities based on this content taking place in the 'classroom'

- Techniques often referred to as 'blended learning' if content is placed online and the reviewed face-to-face

- Evidence of improved outcomes in adult education and is commonly used

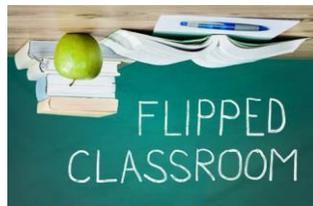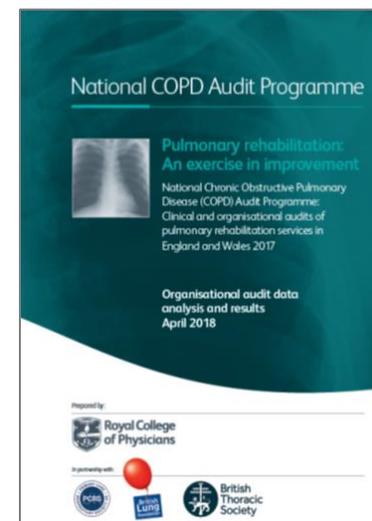- BUT can or should this be transferred to PR settings?

National COPD Audit Programme: Resources and organisation of PR services in England and Wales 2017

3.2 How is education provided (tick all that apply)? (QS6)

	2017 audit (n=187)	2015 audit (n=224)
Not applicable	0% (0)	0% (0)
Face-to-face taught group sessions	100% (187)*	99%
Written handouts	94% (176)	94%
DVD given to patients	10% (19)	14%
CD given to patients	14% (27)	14%
Information on dedicated website	18% (33)	17%
Other	3% (5)**	5%

* Face-to-face group sessions ONLY were provided by 5% (10).
** 'Other': DVD shown in group/session (3), YouTube videos (1) and targeted patient discussion group filmed education talks (1).

https://www.rcplondon.ac.uk/projects/outputs/pulmonary-rehabilitation-exercise-improvement-combined-clinical-and-organisational

National COPD Audit Programme

Pulmonary rehabilitation: An exercise in improvement

National Chronic Obstructive Pulmonary Disease (COPD) Audit Programme: Clinical and organisational audits of pulmonary rehabilitation services in England and Wales 2017

Organisational audit data analysis and results April 2018

Prepared by: Royal College of Physicians

FLIPPED CLASSROOM

4 Key Take Home Messages

1. Consider re-evaluating and CO-CREATING pulmonary rehabilitation education based on the cognitive, psychological, literacy levels and learning needs of the individual patient – one size may not fit all…

2. Incorporate educational design best practices e.g. review pedagogical approaches, technology –enabled learning etc.

3. Can the role of education in PR be further explored to promote long term behaviour change?

4. There may be a need to provide faculty development – do we need to 'teach about teaching?'

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