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Theme | Surgery.

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Abstract

Background

University College Hospital London (UCLH) has significantly increased the number of airway stent surgeries performed. In 2019, seven stent surgeries were performed, with 12 surgeries being completed in 2020. In 2022, this number increased to 40. Airway stents are used as a palliative therapy, or as a bridge to curative therapy, for patients with central airway obstruction (usually due to malignancy). Stent-related complications occur in 40%–60% of cases, with retained secretions causing up to 20% of complications (1).

Aims and objectives

The aim of this project was to audit the respiratory physiotherapy management of patients, following airway stent insertion.

Methodology

The audit was completed by the physiotherapy team at UCLH between June 2019 and April 2021, and involved reviewing the respiratory physiotherapy management of patients post airway stent insertion. A patient list was obtained from the interventional bronchoscopy team, and notes were then reviewed retrospectively. Data was collected in response to the following questions:

- Was the patient seen by physio, and if so what day?
- Was there evidence of secretions on first assessment?
- Did each patient get an effective airway clearance plan on first assessment, for example clearing to dry?
- What airway clearance techniques were used during admission?
- Did each patient get an airway clearance plan on discharge, if so what airway clearance technique (ACT) was used?
- Were mucolytics prescribed during admission and on discharge?

- Did the patient deteriorate from a secretion clearance point of view, during admission, and if so on what day?
- How many onward physio referrals were made?
- What was the readmission rate to UCLH and documented complications?

Results

Twenty two patients were included in the audit. The results are as follows:

- 69% of patients were seen day one post op.
- 65% of these had evidence of retained secretions.
- 47% of these were given an effective airway clearance plan.
- On discharge 50% of patients had an effective airway clearance technique (ACT).
- On discharge 13% of patients were given follow up with a respiratory physio.
- 23% of patients were readmitted to UCLH, with secretion related issues.
- 80% of these patients had no effective ACT on discharge.

Conclusions and implications for practice

There is currently no standardised physiotherapy treatment or management of patients, post stent insertion at UCLH with both in hospital and discharge treatment varying. This has significant implications on patients' health. It would be beneficial to create a pathway to support the physiotherapy management of this patent group.

References

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Rehabilitation after critical illness in adults: Is Kingston Hospital NHS Foundation Trust meeting NICE quality standards?

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Theme | Critical care.

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Abstract

Background

Intensive Care Unit (ICU) survival rates are increasing, however most patients surviving critical illness have significant physical and non-physical morbidity (1). Rehabilitation strategies that may help to reduce these risks, aid recovery and improve outcomes, should be started as early as clinically possible (2).

Aims and objective

The audit aim was to assess Kingston Hospital NHS Foundation Trust's compliance, with NICE quality standards *Rehabilitation after critical illness in adults* (3). The hospital has a local criteria in place for *standard four*, and this was also audited against. The target was 100% compliance for each standard. This topic was selected as staff in the ICU physiotherapy team, felt that there was potential for change and improvement within this area of practice.

Methodology

A retrospective audit was completed in October 2022, looking at all patients admitted to ICU at Kingston Hospital, in May and June 2022. 85 patients were identified by the ITU data team. Data reviewed included critical care and ward notes, critical care and hospital discharge summaries, and ITU follow-up clinic notes. Excel was used to input and analyse data.

Results

Standard one: 32% of patients at risk of morbidity, had their rehabilitation goals agreed within 4 days of admission to ICU, or before discharge from ICU, whichever was sooner.

Standard two: 4% of patients had an agreed individualised structured rehabilitation programme, as part of their formal handover of care, when transferring from ICU to a ward.

Standard three: 42% of patients at risk of morbidity were given information based on their rehabilitation goals, before they were discharged from hospital.

Standard four (national criteria): 35% of patients who stayed in ICU for more than four days, and were at risk of morbidity, had a review 2–3 months after discharge from ICU.

Standard four (local criteria): 42% of patients who stayed in ICU for more than 5 days, and any maternity patient, had a review 2–3 months of discharge from ICU.

Conclusions and implications for practice

Quality standards for *Rehabilitation after critical illness in adults* (2017), are not currently being met at Kingston Hospital. The audit highlighted several areas for service improvement to improve quality and effectiveness of patient care. The project is being taken forward as a quality improvement project, within the ICU physiotherapy team. A re-audit will take place later in 2023.

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Implementing a physiotherapy pre-operative information video to improve patient satisfaction for patients undergoing upper gastro-intestinal surgery (UGIS) at a U.K. UGIS centre

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Theme | Surgery.

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Abstract

Background

Research shows delivering pre-operative education on the role of physiotherapy, and rehabilitation expectations/milestone completion in a video/multimedia format, improves patient satisfaction compared to a face-to-face delivery. A multimedia format was shown to be preferred as patients can view it more than once, to improve their understanding and enable them to raise questions at their prehabilitation appointment. Guidelines recommend using video for patients categorised as low and moderate risk of post-operative complication, but that high risk patients should be reviewed in person.

Aims

1 To improve patient satisfaction with pre-operative physiotherapy services.
2 To improve information retention and decrease patient waiting times for pre-operative education.

Objectives

- To benchmark our current upper gastro-intestinal surgery (UGIS) pre-operative physiotherapy service, with other U.K. centres.
- To measure patient satisfaction and information retention.
- To create a video to educate low and moderate risk patients pre-operatively, with access through a link to re-watch the video with relatives.

Methodology

A bespoke benchmarking electronic survey promoted through social media, ACPRCs newsletter and word of mouth. A bespoke patient satisfaction and knowledge retention survey, to evaluate our current face-to-face service.

Results

Ten centres responded to the benchmarking survey during July and August 2022. Four UGIS centres had integrated their pre-operative service, with a prehabilitation service. All centres reported face-to-face delivery of pre-operative education for all patients.

12 patients completed the survey, and all reported very high satisfaction with the face-to-face service, but also reported having access to technology to view a video. Three reported that they would prefer a face-to-face service, and nine would prefer a video delivery. Eight patients reported information overload and inability to retain information provided, with the current pre-operative service delivered face-to-face.

Conclusions and implications for practice

The next stage of this project we have created a pre-operative education video, that will be trialled with low to moderate risk patients, at their prehabilitation appointments. We plan to re-survey in six months' time, to review patient satisfaction, information retention and time waiting to be seen. This will inform us of the best method (face-to-face, video only or hybrid combination of group video, with question and answer session), for delivering physiotherapy pre-operative education.

References (general)

1 Steves SL, Scafide KN. Multimedia in preoperative patient education for adults undergoing cancer surgery: A systematic review. *Eur J Oncol Nurs.* 2021;52:101981. https://doi.org/10.1016/j.ejon.2021.101981.

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Surgical therapies emergency post-op service: STEPs project

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Theme | Surgery.

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Abstract

Background

Emergency laparotomy has become the title for a heterogenous group of patients, undergoing high-risk abdominal surgery, for a diverse range of non-traumatic pathologies. This patient group have a high incidence of frailty and often limited physiological reserves. Studies have shown a 30-day mortality between 8%–25%. Not only do individual patients have a poor outcome after emergency laparotomy, but the total group of patients represents a disproportionately high number of total surgical deaths (1). Almost half of emergency surgery patients suffer ongoing functional impairment, after discharge from hospital (2). The national average for length of hospital stay (LoS) is 15.1 days (3).

Aims and objective

The STEPs project was a service improvement project, to determine if enhanced input could improve the outcomes for patients being admitted to University Hospital Southampton (UHS), who undergo emergency abdominal surgery.

Objectives

Primary objective

Can twice a day therapy intervention help to reduce the LoS for colorectal and upper gastrointestinal (UGI) patients, post emergency surgery?

Secondary objective

Can enhanced therapy input improve the patient journey as measured by self-reported qualify of life (QoL) questionnaire, and patient feedback?

Does enhanced therapy input post emergency surgery affect post-op complications?

Methodology

In a 12-month period, between March 2021 and August 2022, patients who met the inclusion criteria were enrolled onto the STEPs project, up to four at any time.

A surgical therapy technician provided twice a day input, additionally to any acute respiratory physiotherapy needs.

Inclusion criteria

Emergency admission, colorectal or UGI surgery, good premorbid baseline mobility, and admitted onto the general surgical wards.

Results

A total of 115 patients were admitted to UHS, who met the criteria for STEPs. Due to the pressures presented by the COVID-19 pandemic, and recruitment a total of 71 patients took part in the STEPs project.

The average LoS in the STEPs project group was 16.5 (median 12.5) days. This is compared to the average LoS in the control group of 21.5 (median 19.5) days. Demonstrating a reduction in LoS of 5 days (median 7 days).

Patients reported improvements in their EQ-5D-5L scores, and expressed positive feedback.

Complication incidence did not differ between the groups.

Conclusions and implications for practice

Enhanced therapy input post emergency colorectal, or UGI surgery improved patients LoS and QoL outcomes. Complication rate data was not sensitive enough, to determine any impact of the STEPs project.

References

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Adverse effects of mechanical insufflation-exsufflation in mechanically ventilated patients in the adult intensive care unit – A literature review

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Theme | Surgery.

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Abstract

Background

Mechanical ventilation through artificial airways, can impede cough, predisposing the critically ill patient, to retained secretions, and an increased risk of respiratory complications. Physiotherapeutic techniques aiming to mobilise secretions and optimise airway clearance, are often relied upon in this cohort. Mechanical insufflation-exsufflation (MI-E) is a cough augmentation device, that utilises positive pressure, followed by a rapid switch to negative pressure, to simulate a cough and aid sputum clearance from proximal airways. To date, MI-E has been widely researched in the neuromuscular population, with emerging use in the critically ill. However, adverse effects associated with MI-E in intubated populations remains unknown.

Aims and objectives

To report on the incidence of adverse events associated with MI-E, in acutely invasively ventilated critically ill patients.

Methodology

An electronic search of online databases was conducted using *AMED*, *CINAHL*, *MEDLINE*, *Web of Science* and *Cochrane Library*. The reference lists of relevant articles were hand searched for eligible studies. Studies including adult subjects (>18 years), who were invasively ventilated and receiving MI-E, were deemed eligible for inclusion. Studies reporting adverse effects of MI-E, as either primary or secondary outcome

were included. Studies were excluded if they were in a paediatric population, not written in English language and were editorials or conference papers.

Results

A total 77 citations were identified, five of which met the inclusion criteria: three randomised crossover studies, one randomised parallel-group open label trial and one cohort study (278 participants in total). All studies applied MI-E followed by endotracheal or tracheal suction. Insufflation and exsufflation pressures ranged from +30–50cm H_2O and -30–-50cm H_2O across studies. Only two studies pre-defined an adverse event. Common reported measures included heart rate, systolic and diastolic blood pressure, and oxygen saturations. Two studies reported the occurrence of an adverse event (oxygen saturations, blood pressure and heart rate changes), but noted that changes were transient and not clinically significant. Overall, all studies concluded that MI-E was a safe intervention in this patient cohort.

Conclusions and implications for practice

Overall, the use of MI-E in the acutely intubated patient, does not result in adverse events that are clinically significant. However, limitations to the evidence base should be acknowledged, and include a lack of definition and variation in outcome measures used, and small sample sizes across studies. Larger clinical trials are needed, to further evaluate the safety of MI-E on clinically important parameters, that are more clearly defined.

Does securing the vascath after kidney transplantation improve patient experience? – A service improvement project

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Theme | Surgery.

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Abstract

Background

Early mobilisation is encouraged in patients following kidney transplantation to prevent postoperative pulmonary complications, and restore functional independence. Patients have reported trepidation to the author regarding postoperative mobilisation and have specifically mentioned pain and anxiety, surrounding the presence of a vascath. Vascaths are central venous lines located at the base of the neck, used for haemodialysis (inserted intraoperatively). This service evaluation investigated whether securing the vascath when mobilising, during the first physiotherapy sessions after kidney transplantation was associated, with improved patient experience.

Aims and objectives

The primary aim of the service evaluation was to evaluate whether securing the vascath when mobilising, during the first physiotherapy sessions, after kidney transplantation, is associated with improved patient experience. Including discomfort, anxiety, and a reduction of the sensation of the vascath pulling and dislodging.

The secondary aim was to explore the physiotherapists' perceptions of securing the vascath with a bandage.

Methodology

A service evaluation was undertaken in two cohorts of patients, following kidney transplantation, reflecting variations in local practice. Patients in the unsecured group did not have their vascaths secured, when mobilising. Patients in the secured group had their vascaths secured distally, to the insertion site with a bandage when mobilising. Questionnaires were used in both groups to obtain the patient experience outcomes. Physiotherapists were surveyed online to understand their experiences of securing the vascath.

Results

Data were collected from 46 patients post kidney transplantation, 28 and 18 in the unsecured and secured groups. Patients were predominantly male (ratio of M:F, 26:17) with a mean (SD) age of 53.6 (14.3) years. There was no significant difference in discomfort scores at the vascath site (Mann-Whitney U Test, $p = 0.51$) or anxiety scores (Mann-Whitney U Test, $p = 0.3$) between the two groups. Most patients ($n = 32$) in both groups, reported no sensation of pulling or dislodging at the vascath site ($n = 16$ versus 16). However, the sensation of the vascath dislodging or pulling, was experienced less in the secured group, compared to the unsecured ($p = 0.02$, relative risk reduction is 74%). An equal number of physiotherapists ($n = 3$, 38%) reported that they felt patients tolerated the vascath better, when secured versus unsecured during mobilisation.

Conclusions and implications for practice

There was some added benefit to securing the vascath when mobilising, in certain individuals. This suggests that securing the vascath should be considered, for those patients who find it uncomfortable.

Mixed-methods study exploring the thoughts feelings and experiences of senior respiratory physiotherapists working in intensive care throughout the COVID-19 pandemic

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Theme | Critical care, professionalism and fundamentals of practice, leadership and innovation.

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Abstract

Background

Respiratory physiotherapists have been on the frontline in response to the nation's COVID-19 pandemic. ICUs have been directly impacted and ICU staff have encountered significant challenges. There has been little to no research published specifically regarding respiratory physiotherapists, their well-being and the psychological implications towards their role, responsibilities, and the exposure they've had to working in ICU during the pandemic.

Aims and objectives

To explore the psychological responses of senior respiratory physiotherapists, working in intensive care units (ICU), during the COVID-19 pandemic, to inform a future response to a similar situation.

Methodology

Data was collected using an online, mixed-methods questionnaire, using Likert Scales, Open Questions, and multiple-choice questions, allowing participants the opportunity to share their thoughts, feelings, and experiences. This was completed by band seven (n = 27) and band eight (n = 11), respiratory physiotherapists who had been working in ICU, during the pandemic. Participants were recruited through networks (Charted Society of Physiotherapists (CSP) and The Association of Charted Physiotherapists in Respiratory Care (ACPRC)).

Results

Thematic analysis identified three main themes: overwhelming emotions, challenges, and staff wellbeing. Participants faced a variety of challenges, including physical wearing of personal protective equipment (PPE), lack of/access to equipment, ever-changing guidelines from professional bodies, and supporting redeployed staff. Inevitably, this led to heightened emotions of stress, exhaustion, fear, and fatigue, alongside nervous excitement, sense of pride and fulfilment for being a part of the frontline staff, working during the pandemic. There was an overall perceived lack of support towards staff, to protect the physical, mental, and emotional wellbeing of those working in ICU.

Conclusions and implications for practice

Respiratory physiotherapists experienced a multitude of emotions and challenges, whilst working on ICU during the pandemic. There was a perceived lack of support leading to psychological impacts on the workforce. The findings highlighted the need for psychologist support, within ICU to support staff, for future practise and greater visibility, from management to support clinical team leads.

Novel use of high-flow nasal oxygen to enable physiotherapy-led exercise in patients with severe hepatopulmonary syndrome before and after liver transplantation: A prospective case series

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Theme | Surgery.

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Abstract

Background

Hepatolpulmonary syndrome (HPS), is hypoxemia due to dilated intrapulmonary vasculature, in the presence of advanced liver disease (1). Patients (pts) with severe HPS awaiting liver transplantation (LT), have reduced exercise capacity and progressive physical frailty, due to brittle platypnea and orthodeoxia.

Despite the use of ward-based conventional oxygen therapy (for example, maximum flow rate 15L/min), capacity to exercise safely is limited secondary to lung shunting, and acute oxygen (O_2) desaturation (SaO_2<80%).

Aims and objectives

Our prospective case study aimed to assess the efficacy and feasibility of high flow nasal oxygenation (HFNO; up to FiO_2 1.0 with flow rate 30–60L/min), to facilitate physiotherapy-led exercise in patients with HPS.

Methodology

Training in ward-based HFNO, was delivered to specialist liver physiotherapists. Moderate intensity (Borg rate of perceived exertion (RPE) 12–14), aerobic (walking, spot march, step-ups) and resistance (free/body weight, TheraBand©), inpatient exercise sessions were delivered to pts, with severe HPS pre-and post-LT.

Exercise session completion, was defined as ability to maintain RPE 12–14 and O_2 saturations ≥90%, when using conventional oxygen therapy or HFNO.

Time to mobilise (edge sit, step transfer, walk >3m, >30m) post-LT, freq. exercise session completed, O_2 required to complete exercise session, and liver frailty index (LFI) pre-and post-LT were observed.

Results

3 pts (2F:1M; age 29–45 yrs) with severe HPS (defined as PaO_2 on room air (RA) <60mmHg/8kPA), were studied pre-and post-LT.

Average resting O_2 requirements were FiO_2 .65 at 10L/min with conventional O_2 therapy pre-LT. Median number of pre-LT completed exercise sessions, were 5 (interquartile range (IQR) 3.5–10), median FiO_2 .5 (IQR 43–65%), and flow rate 59L/min (IQR 45–60).

Median number of post-LT completed exercise sessions were 35 (IQR 34–37), with median requirement of FiO_2 .6 (IQR 55–70), and flow rate 50L/min (45–55).

Median days post-LT using conventional O_2 therapy versus HFNO to edge sit, step transfer and walk >3m was 14 (IQR 11–48), versus 5 (IQR 4–10), 84 (IQR 46–117), versus 6 (IQR 5–17), and 111 (IQR 58–113) versus 7 (IQR 6–28), respectively.

Physiotherapy-lead exercise improved LFI in two of the three patients, from 5.13 to 4.70 pre-LT, and from 4.51 and 3.78 at the point of hospital discharge post-LT (length of stay 304 and 162 days respectively).

Conclusions and implications for practice

HFNO safely enables physiotherapy-lead exercise in pts, with severe HPS pre and post-LT. HFNO-assisted exercise accelerated *time to mobilise* post-LT compared to conventional O_2 therapy, and improved physical frailty.

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The experience of physical recovery and physical rehabilitation, following hospital discharge for intensive care survivors – A qualitative systematic review

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Theme | Critical care.

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Abstract

Background

Over 128,000 people survive critical illness in the U.K. each year. The lack of high quality evidence for the most effective approach to post discharge rehabilitation (1), and lack of funding (2), means there is little provision or consensus, despite significant research since the *NICE Guidelines for Rehabilitation following Critical Illness* in 2009. Additionally, the need for more qualitative evidence in this field, was highlighted in 2015, by the Cochrane review (3).

Aims and objectives

To explore critical care survivor's perceptions, opinions and experiences of physical recovery and physical rehabilitation, following hospital discharge.

Methodology

Medline Ovid, CINAHL, Embase, Cochrane, Joanna Briggs Institute and sources of grey literature, were searched for eligible studies. Databases were searched from inception, with restrictions on studies written in English.

The review was carried out using the *JBI Qualitative Systematic Review Process*. Inclusion criteria were qualitative studies, with a focus around physical rehabilitation or recovery, involving adult survivors of critical illness, who had been discharged from hospital.

Results

Seven of 548 identified studies, were eligible for inclusion. Studies were published between 2007 and 2019, and rated as high or moderate quality using the Joanna Briggs Institute (JBI) ConQual framework. Three synthesised findings were identified:

1 'Patients experience challenges in momentum for physical recovery'.
2 'Positivity, motivation and hope'.
3 'Recovery is hard and patients need support'.

Conclusions and implications for practice

The qualitative evidence around the experiences of physical recovery and rehabilitation, following discharge home after critical illness is limited.

The challenges in the momentum of physical recovery are compounded by physical weakness and frustration, emotional issues, and lack of motivation.

Patients struggle to access support following discharge home, leaving them fighting for support, feeling abandoned and wanting to know what is normal and expected for their recovery.

The positive influences on physical recovery, included the expertise and support of healthcare professionals, and the importance of independence. Supervised exercise programmes had a positive impact on perception of recovery and motivation.

Further qualitative research is needed to explore physical recovery and rehabilitation for this population, once they have been discharged home.

Relevance to clinical practice

- Critical illness survivors feel frustrated and abandoned by a lack of support, following discharge home.
- Improvements in independence, supervised exercise programmes and above all support from healthcare professionals, are among the motivating factors for progression.
- Barriers to rehabilitation include weakness, emotional challenges and boredom, due to lack of motivation and progress.

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Service evaluation to ascertain the benefits of a therapy rehab garden, on the general mood and motivation to participate in rehabilitation, of critical care patients

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Theme | Critical care.

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Abstract

Background

Daylight therapy is thought to have multiple benefits for patients and staff in health care. Critical care units are very unfamiliar environments for patients, and in the case of UHNM, there is very little natural light. Some of the benefits of exposure to natural light are thought to be lifted mood (1), reduced analgesia requirement, improved circadian rhythm and sleep (2), and ultimately reduced length of stay (LOS) (3).

Aims and objectives

The service evaluation aims to determine the effect of daylight therapy on general mood and motivation, to participate in rehabilitation in critical care patients taken to the rehab garden during the period March–July 2022.

Methodology

A tailored feedback form, was written to identify the changes in patient mood and motivation using a numerical visual analogue scale (VAS), with the use of qualitative open question feedback from patients and/or visitors. Patients were asked to complete the two part VAS with any additional comments, prior to going to the garden, then repeated on the return from the garden. Patients at the time of completion consented to the use of this information, through an information governance approved 'tick box' option on the feedback form.

Critical care rehab garden: patient visitors record

Patient name /I would prefer to stay anonymous ☐

Date

How was your mood?

Before going to the garden

After going to the garden

What did you think of the rehab garden?

How motivated did you feel to participate in rehab:

Before going to the garden

After going to the garden

Anything else you would like to add?

Please tick this box if you would not like your comment to be used publicly ☐

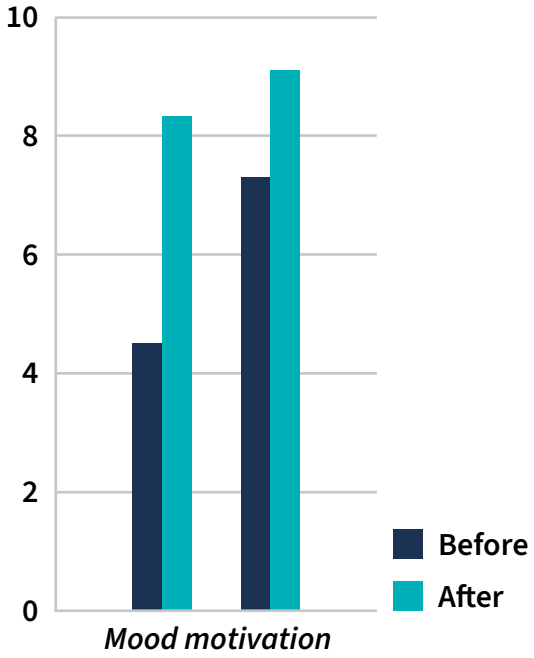

Figure 1: Mean improvements in mood and motivation.

Participants

Patients were selected through inclusion criteria following Intensive Care Society (ICS) green criteria guidance; maintaining own airway, needing 40% or less supplementary oxygen, cardiovascularly stable with no inatropic support (4). During the five month service evaluation period, there were a number of patients who met the ICS criteria, but some were excluded, due to low Glasgow coma scale (GCS). As a result of the strict criteria, this impacted on the number of patients that qualified for selection into the service evaluation.

Results

100% of the 12 patients completed the evaluation form.

Quantitative

General mood VAS pre rehab garden visit, was an average of 4.5, post garden visit was 8.3 – an improvement of 3.5.

Motivation VAS pre rehab garden, was an average of 7.3, post garden visit was 9.1 – an improvement of 1.8.

Qualitative

Patient/visitor comments on their experience.

All comments in open question segment, were positive.

> 'Enjoyed every moment of it. I feel I will sleep well tonight'.

> 'Beautiful/colourful/lovely smells/good to get out/different environment'.

Conclusions and implications for practices

Preliminary evaluation appears to indicate improvements, to both general mood and motivation to partipcipate in rehabilitation with daylight therapy. Further studies are required with increased numbers of participants over multiple critical care units. The use of validated outcome measures, may identify specific aspects of mood that are affected by daylight therapy. Further studies may also identify secondary effects of daylight therapy, in relation to use of analgesia and sleep hygiene.

The subject group is currently restricted to a smaller number, due to only taking 'green' criteria patients, this number will increase as staff training takes place to enable safe transfer of patients, with artificial airways or ventilated patients.

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Respiratory on-call: The need for training that addresses both skills and confidence

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[2]North Lincolnshire and Goole NHS Trust, Grimsby, U.K.

Theme | Education, on-call training.

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Abstract

Background

Following a trust wide service review, all qualified physiotherapy staff were required to participate in the respiratory on-call rota. This resulted in several staff having to update their respiratory competencies. Inline with the ACPRC guidelines (1), the staff attended the established departmental mandatory training (mainly theory based). However, staff confidence remained low, which prevented them re-joining the on-call rota. To address this, the training was redesigned following staff consultation and senior staff review.

Aims and objectives

To provide training that improved respiratory skills and staff confidence, to enable them to fulfil their on-call duties.

Methodology

We undertook a comprehensive policy review including documentation and updated the trust wide mandatory training package, which included five hours of simulation-based training. Every participant undertook the ACPRC self-evaluation (2) to identify their learning needs. After the first year, we evaluated the training through an anonymised survey.

Results

22 staff completed the survey. (68% response rate).

Learning needs

55% reported the training met all their learning needs, while 45% reported that most of their learning needs had been met.

Skills

99% reported their skills had improved (27% felt their skills had greatly improved, 64% a little improved), with 1% remaining the same. Everyone reported that the simulation training was the most beneficial, for developing their skills.

Confidence

91% reported that their confidence had improved, following the training. Simulation was credited by 75% as being the most important aspect of training for improving their confidence. Average confidence before training was 6.27 (Likert scale 1 (low), to 10 (high)), rising to 7.82 after training.

Overall, the training was rated 8.41 out of 10, and everyone agreed it should continue in its current format.

Conclusions and implications for practice

The self-reported skills and confidence of those undertaking the on-call training, has improved. Simulation training was identified to be the most influential factor in improving both skills and confidence (3). It also provided opportunities for peer support and discussions, which allowed clinical reasoning skills to be shared, and developed. Throughout the training some staff reported a reduced level of anxiety, with on-call duties which they attributed to their increased confidence.

This new training package emphasised the development of both skills and confidence, with the simulation sessions allowing theory to be put into practice. Following the training, all staff who are required to be on-call are now participating in the respiratory on-call rota.

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Completion of the focused ultrasound intensive care (FUSIC) lung ultrasound module during a novel five-day 'mini-fellowship': A case report

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Theme | Education.

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Abstract

Background

During lung ultrasound (LUS) training, consistent access to a qualified mentor, is a significant barrier for physiotherapists (1, 2). Methods of LUS training varies depending on the resources and time available, and usually include a balance between face-to-face and remote teaching (3).

Aims and objectives

The aim of this case report was to document the progress of one physiotherapist, on a five-day intensive LUS accreditation 'mini-fellowship' training programme. It is hoped that this novel case report will show, that by selecting an appropriate mentee, and providing suitable mentor support, LUS accreditation can be achieved in a five-day timeframe.

Methodology

Mentee A was a respiratory physiotherapist with 15 years working in critical care. They had previously completed two introductory LUS courses, and were familiar with the concept and use of LUS. However, any subsequent post-course scanning had not contributed towards their LUS logbook, as a local LUS mentor was not available.

Mentee A attended five consecutive days at Blackpool Teaching Hospitals Trust, in December 2022. A 50-point learning objective and competency document, was developed and included: physics and image generation, indications, knowledge of equipment, image optimisation, medico-legal aspects, systematic examination, image

interpretation, documentation, clinical integration, quality assurance and continuing professional development.

The five-days were structured as in Table 1 (based on a 7.5 hour working day):

	Proposed daily programme	Number of scans
Day 1	Introductory theory and practice course + supervised scans	6–8
Day 2	Supervised/independent patient scans with direct feedback	6–8
Day 3	Independent patient scans with direct feedback	6–8
Day 4	Independent patient scans with direct feedback	6–8
Day 5	Independent patient scans with direct feedback and triggered assessment	7–8
	Total number of scans (as required to reach competency)	31–40

Results

A total of 32 scans were completed, with seven scans being completed on volunteers, and a Vimedix simulator on day 1. Twenty-five subsequent scans were completed within the clinical environment, with interpretation accuracy between mentor and mentee, tracked using PRESUNA Dojo software application. Variation in the interpretation accuracy scores, reduced and became more consistent over the 25 scans (Figure 1). All 50 of the learning objectives and competencies, were met and the *Triggered Assessment* checklist was passed on day 5.

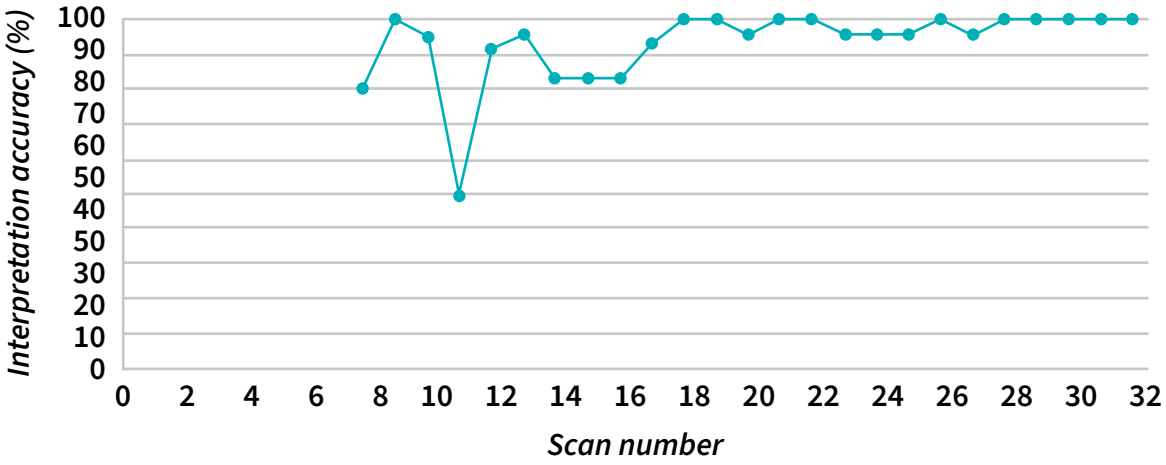

Figure 1: Interpretation accuracy for scan number 8–32, between mentor and mentee using PRESUNA Dojo software application.

Conclusions and implications for practice

Consistent access to an appropriately qualified mentor, is necessary to progress through any ultrasound training programme. Our case report of a five-day physiotherapy LUS mini-fellowship, is the first example of an intensive LUS training programme.

Through careful selection of an appropriate mentee and a structured learning programme, we have demonstrated that an intensive training programme allows a mentee, to meet the necessary competency requirements to gain LUS accreditation.

It is acknowledged that a five-day mini-fellowship requires high levels of resource allocation, however, such resource allocation may be justified to allow the growth of LUS use in geographical regions, where mentor support is inconsistent or absent.

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Rising to the challenge: Opportunities and challenges of graduating as a physiotherapist during the COVID-19 pandemic

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[2]Lewisham and Greenwich NHS Trust, Adult Physiotherapy, London, U.K.

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Theme | Surgery.

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Abstract

Background

The COVID-19 pandemic significantly impacted on the way university programmes delivered physiotherapy curricular in the UK, for both the 2019 and 2020 academic years. Teaching moved predominantly online, with fewer opportunities for practical work. Students were unable to meet to form in-person study groups, and much of their peer support network was disrupted. Clinical education was also challenging, with placements either cancelled or altered at short notice. Hence, graduates during this period gained theoretical and clinical skills, through different means to those pre-pandemic.

Aims and objectives

This study aimed to explore the experiences of newly qualified physiotherapists, who graduated during the COVID-19 pandemic.

Methodology

A qualitative study was undertaken, using semi-structured on-line interviews, using Microsoft Teams. A topic guide was developed in collaboration with a research advisory group, who included practice educators, newly qualified physiotherapists and university lecturers. Physiotherapists were eligible for inclusion if they qualified from a U.K. university in 2020 or 2021, and were currently employed as a physiotherapist. They were recruited through social media and the student forum of the Charted Society of Physiotherapy. Interviews were recorded and transcribed verbatim (following

the exact words), for thematic analysis. Codes were identified using NVivo 2020 software. They were grouped into subthemes and organised into a thematic map.

Results

Data collection took place from May to June 2022. Ten participants (five males, five females) were successfully recruited and interviewed. The median (range) interview time was 47 (29 to 53) minutes. Participants had graduated in 2022 ($n = 6$) or 2021 ($n = 4$), from one of six U.K. based universities. Most worked in London ($n = 7$) and were in rotational posts ($n = 7$). Seven themes were identified from the interviews: placement experience, curriculum and teaching, bridging programmes, job applications, work culture, personal life and skill development. Opportunities included working as a therapy assistant and developing digital skills. Challenges were also recognised, such as maintaining motivation during online learning, and increased levels of anxiety and depression.

Conclusions and implications for practice

Newly qualified physiotherapists recognised the impact that the COVID-19 pandemic had on their education, and clinical skills development. These included both opportunities and challenges. Further research is required to explore this impact from a range of viewpoints, including practice educators and patients. This study has suggested areas for future development, by highlighting pertinent topics during the pandemic. Continued close collaboration between universities and hospitals, would help to balance the expectations of future graduates, and provide the necessary support as they begin their professional careers.

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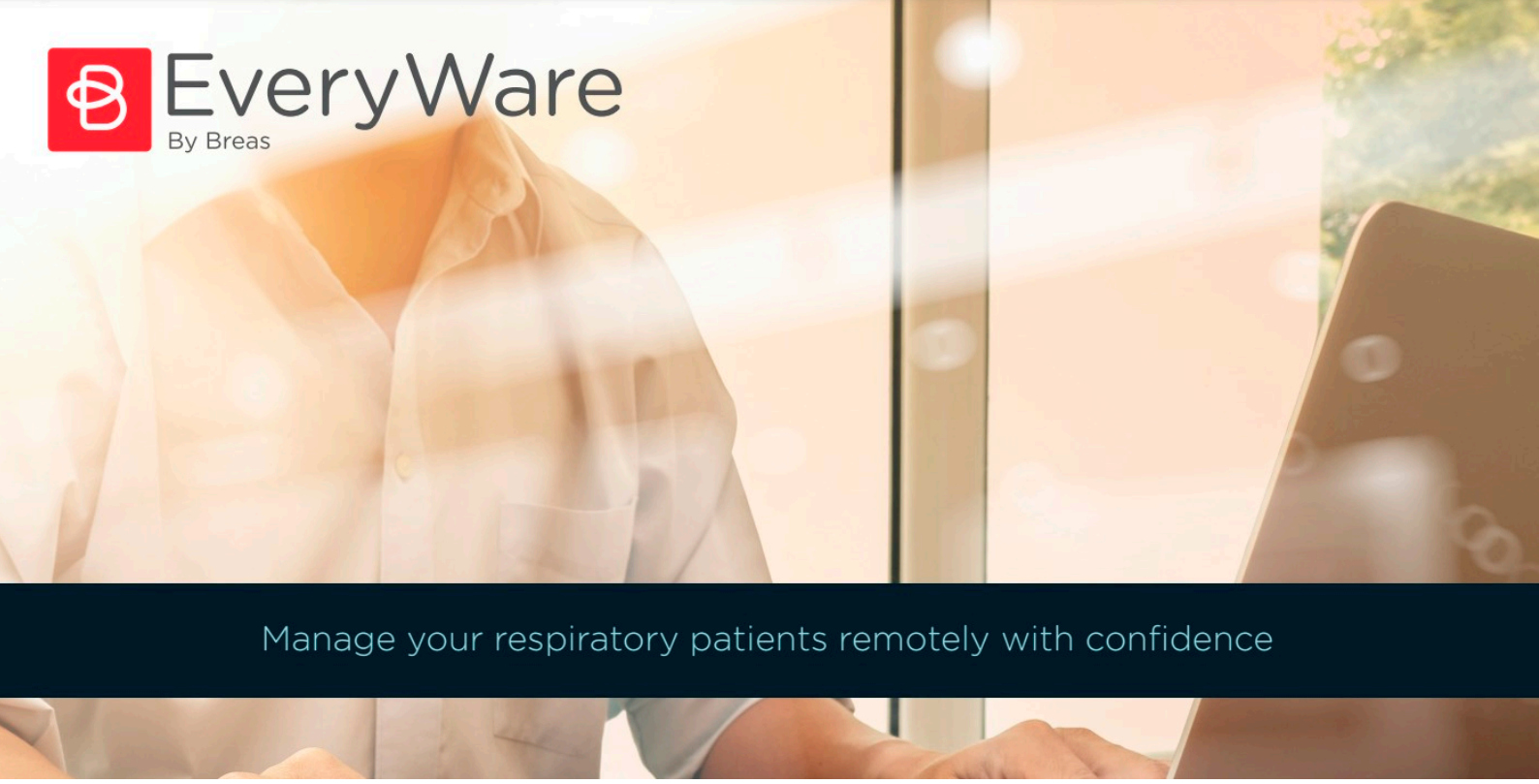

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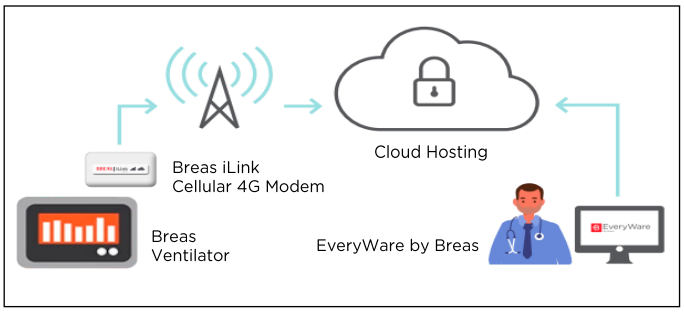

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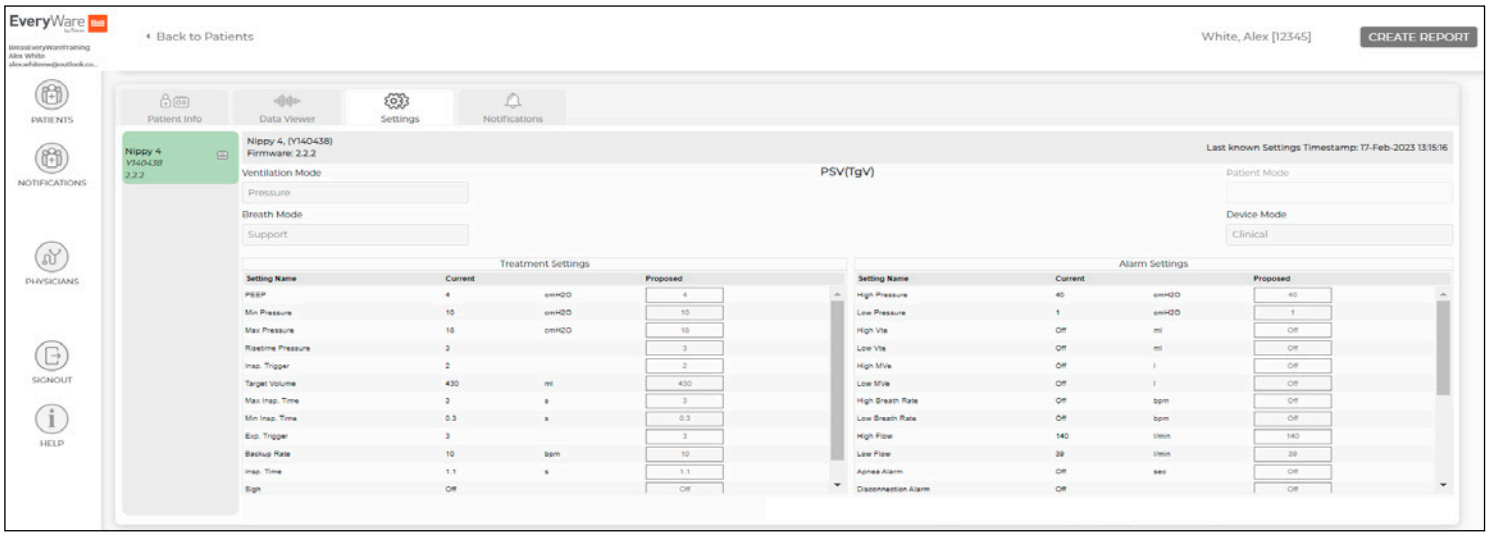

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Creating and using a 'collaborative approach' in the virtual group programme for long-COVID-19 patients

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Theme | Surgery.

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Abstract

Background

Altering the delivery of information to patients using a 'collaborative approach', optimised their learning and changed our practise in a virtual group programme.

A virtual nine week group programme was designed and delivered within NHS Lanarkshire's COVID-19 Rehabilitation Team. A service evaluation was carried out to evaluate the effects of this, for the service and patients. A 'collaborative approach' to delivery was developed, meaning sessions were directed by the individual's needs.

Facilitators delivered training sessions on the collaborative approach to the clinicians, as this was a new and challenging style. The collaborative approach encouraged clinicians to 'elicit, provide, elicit' information, to tailor what they share according to the patient's needs. This allows group discussion and shared experiences can be discussed. During the session, patients asked questions directly to clinicians around their issues. The facilitators and clinicians used this approach for the main teaching, rather than a pre-set presentation.

The group programme was a positive intervention for people, improving and supporting management of their long-term condition, long-COVID-19. Feedback illustrated themes of:

- The interactive style.
- Peer connection.
- Learning from both clinicians and peers.
- Drawing on each others experiences.

The theme of person-centred care and feeling supported by the facilitators, was brought up by both clinicians and participants. Confidence in delivering in a 'collaborative approach', increased by 76% for the clinicians when measured at the end of the programme.

Take home message

A collaborative approach enabled an interactive style with informative discussions around their needs. Information and learning was optimised, as it was generated from their peers and clinicians.

Community-based multi-disciplinary rehabilitation for long-COVID-19 patients

Emma Colwill

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Theme | Long-term conditions.

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Abstract

Background

Following on from the COVID-19 pandemic, research suggests around 20% of people who have confirmed/symptoms suggestive of COVID-19, experience symptoms that persist after 12 weeks (1). This is now classed as long-COVID-19, with the main symptoms being reported as shortness of breath and fatigue. These can have a significant impact on function and quality of life.

Aims and objectives

The purpose is to evaluate the impact of community-based multi-disciplinary rehabilitation, on the common symptoms reported by long-COVID-19 patients.

Methodology

A retrospective analysis was undertaken to assess the outcome of delivering a course of rehabilitation, to 68 patients with long-COVID-19. Swansea Bay Pulmonary Rehab Team, commenced courses in May 2021. Long-COVID-19 was defined as having symptoms that persistent >12 weeks, after initial COVID-19 infection. The rehabilitation consisted of an exercise, education and relaxation component, with patients attending sessions twice a week, for 6 weeks. The analysis evaluated the following pre and post course outcome measures: 6-minute walk test (6MWT), sit-to-stands (STS) completed in one minute, grip strength (kgs) using a hand-grip dynamometer, Modified Medical Research Council Dyspnoea Scale (MRC), and Modified Fatigue Impact Scale (MFIS). Exercise intensity was regressed/progressed depending on patients self-reported fatigue levels, on a scale of 1–10. Data on symptoms reported at the start of the course was also reviewed.

Results

The most common symptoms reported prior to the start of the course, were breathlessness (97% of patients), fatigue (96%), brain-fog (74%), and reduced exercise tolerance (71%). Pre/post outcome measures, were compared and showed a 19% average

improvement in the 6MWT (339m to 402m), STS showed a 27% improvement (19 to 24.2), grip strength showed a 15% improvement (26.6kgs to 30.5kgs), and MRC improved on average by 18% (from 2.8 to 2.3). MFIS showed a 12% reduction (from 58% to 46%), with 82% of patients reporting a decrease in the impact of fatigue, on their daily life.

Conclusions and implications for practice

A 6-week rehabilitation course comprising of exercise, education and relaxation for long-COVID-19 patients, has demonstrated marked improvements in degree of breathlessness, exercise tolerance, and the impact of fatigue on patient's daily lives. This adds support for graded exercise in this population, provided fatigue levels are monitored and the exercise component regressed/progressed accordingly. Improving treatment for patients with long-COVID-19, ensures that a higher population are benefitting from improved outcomes, which can lead to patients returning to work, decreased healthcare utilisation and improved self-management.

References

1 Office for National Statistics. 2022. *Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the U.K.*

Retrospective review of nebulised drug reaction assessment failure rate per medication tested in patients with non-CF bronchiectasis

Siobhan Singh[1] and Charlotte Pearson[1]

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Theme | Long-term conditions.

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Abstract

Background

Patients with chronic lung conditions including non-cystic fibrosis bronchiectasis (NCFB), often require multiple nebulised medications to optimise their chest treatment. These include bronchodilators, mucolytics and antibiotics, and can have various side effects (1). Therefore, nebulised drug reaction assessments (NDRA's), are often carried out to assess tolerability. There are currently limited studies on NDRA's and those studies are not limited to patients with NCFB (2). Furthermore, none of these focus on failure rates per medication or medication type. (Note: NDRA's are not completed routinely for bronchodilators.)

Aims and objectives

This study was a retrospective data analysis to assess tolerability of different nebulised medications through NDRA's. Predominantly patients had NCFB, but other chronic lung conditions are included.

Methodology

This service evaluation was retrospective in nature over 4 years (January 2018 to December 2021), analysing data for all completed NDRA's, those that were borderline or failed the NDRA's, and which medication was administered. Where possible a reason for failing was also recorded.

Results

The most common medications tested were mucolytics hypertonic saline (HTS) (7% or 3%), 278 and 78 respectively, and then antibiotics-colomycin (mixed with or without salbutamol), 190 and 91 respectively, gentamicin 42 and meropenem 64. The most failed was ceftazidime (25%), and then meropenem (12.50%), HTS 7% and 3% (8.27% and 5.13% respectively), and colomycin with and without salbutamol (7.69% and

3.68% respectively). Conversely tobramycin (1 test), sinus colomycin (1 test), Amikacin (25 tests) including liposomal amikacin (1 test), and promixin (8 tests) all had no fails. (Note: amphotericin showed a high failure rate of 40%, but only five trials were carried out.)

Conclusions and implications for practice

There was a low (7.57%) average failure rate for NDRA's, but some failed more commonly (ceftazidime, meropenem, HTS and colomycin). Being able to predict which medications patients are less likely to tolerate, could change the testing processes, saving both time and costs for patients and staff, this could be observed assessments, rather than spirometry or non-supervised doses, that patients could do at home. However, multi-centre data and longer-term data for tolerance of medication and reasons for failure, would be useful to further direct practice.

References

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An audit of the patients admitted to T8 at UCLH with bronchiectasis requiring respiratory physiotherapy care

Gemma Atkins[1], Niamh Flynn[2], Rebecca Livingston[3] and Jeremy Brown[4]

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[3]Band 8, Physio, University College London Hospitals NHS, Foundation Trust (UCLH), U.K.

[4]Respiratory Consultant, University College London Hospitals, NHS Foundation Trust (UCLH), U.K.

Theme | Long-term conditions.

Correspondence author | Gemma Atkins. Email: gemma.atkins4@nhs.net.

Abstract

Background

The British Thoracic Society recommend that patients with bronchiectasis are assessed and treated by a respiratory physiotherapist, and subsequently given an individualised airway clearance programme (1). An audit was therefore conducted to investigate the quality of respiratory physiotherapy care, to patients admitted to T8 ward at UCLH, with an exacerbation of bronchiectasis.

Aims and objectives

To complete an audit of the physiotherapy-led initial assessments and follow up care, provided to patients admitted to T8 with an exacerbation of bronchiectasis.

Methodology

An audit of retrospective data was completed from 11 April 2022–10 June 2022 of patients, admitted to T8 ward with an exacerbation of bronchiectasis.

Inclusion criteria

- Bronchiectasis diagnosed following a CT scan.
- Acute respiratory infection.

Exclusion criteria

- Altered airway.

Results

A total of ten patients fitted the inclusion criteria.

Data

- Seen within 24 hours of admission: 9/10.
- Baseline respiratory function collected: 7/10.
- Huff (FET) assessed: 10/10.
- Problem list identified: 1/10.
- Appropriate treatment plan provided: 9/10.
- Appropriate follow up care offered: 6/10.

90% of patients were assessed by a physiotherapist within 24 hours of being admitted to T8 ward, this ensures that patients are completing appropriate airway clearance techniques, following admission.

70% of patients had their baseline respiratory function history taken during their initial assessment, this allows abnormalities in symptoms to be identified and subsequently managed suitably through escalation of treatment. Two of the patients were previously assessed in A+E, and therefore did not warrant further assessment.

Every patient's FET technique was assessed during their initial assessment, this is an excellent indication that secretion load was assessed optimally, by a physiotherapist.

There was a significant absence of *problem lists* documented within the clinical notes, reviewed in this audit. Problem lists enable therapists to interpret information, and consequently implement their clinical reasoning when tailoring treatment plans (2).

Nine patients were provided with an appropriate treatment plan, with one patient declining input from physiotherapy.

Only 60% of patients were offered appropriate follow up care, during their final session on the ward. This is an essential aspect of the long-term management of bronchiectasis patients, which this audit has identified needs improving.

Conclusions and implications for practice

This audit has identified that in the future, physiotherapists should endeavour to include a detailed problem list in their documentation. Furthermore, there should be an emphasis on ensuring appropriate follow up care is provided, such as onward referrals to outpatient respiratory services.

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A service improvement of an introduction of a physiotherapy virtual clinic in chronic lung disease patients

Charlotte Pearson[1] and Siobhan Singh[1]

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Theme | Long-term conditions.

Correspondence author | Charlotte Pearson. Email: charlotte.pearson7@nhs.net.

Abstract

Background

Prior to COVID-19 on referral to Royal Papworth Hospital's chronic lung disease (CLD) service, patients attended initial appointments with the consultant, before attending for tests, including a physiotherapy review. Then a results appointment with the consultant and a physiotherapy follow up inline with the British Thoracic Society (BTS) guidelines. When the pandemic started, initial and results appointments changed to virtual, where appropriate and patients would only attend physically for their day-case appointment. The physiotherapy review would include airway clearance techniques (ACT), breathlessness and exercise advice. With a virtual follow up appointment, the physiotherapists were missing the second review and not meeting the BTS guidelines, for second outpatient and new ACT reviews.

Aims and objectives

To introduce a physiotherapy virtual clinic for CLD patients, in order to achieve the BTS guidelines for second physiotherapy review, within three months and improve patient care.

Methodology

Data was collected on all CLD new patients between July 2020 and September 2022. In October 2021 we started the physiotherapy virtual clinics for patients, and implemented the process of booking patients in after their initial appointment, if they consented and a virtual appointment was appropriate.

Results

We started collecting data in July 2020 to assess how many patients were having a second physiotherapist review, within three months of their initial. From July to September 2021, we had 70 CLD new patients. 27 (38.6%) received a physiotherapy follow up

within three months (this included patients who were admitted to RPH), nine (12.9%) received no follow up, 26 (37.1%) received follow up after three months, and eight (11.4%) did not require a follow up, or cancelled their follow up appointment.

From October 2021 to September 2022, we had 74 CLD new patients. 50 (67%) received physiotherapy follow up within three months, (this included patients who were admitted to RPH), zero (0%) received no follow up, four (6%) received follow up after three months, and 20 (27%) did not require a follow up, or cancelled their follow up appointment.

Conclusions and implications for practice

As a result of the data, we can clearly see that introducing the physiotherapy virtual clinics, greatly helped us to increase the number of our CLD patients, that met the BTS guidelines for second outpatient appointments. We were also able to significantly improve patient care, experience and self-management, but did not collect data on this, therefore further studies could investigate the patient benefit and viewpoint on these service changes.

References (general)

1 Hill AT, Sullivan AL, Chalmers JD, et al. British Thoracic Society Guideline for bronchiectasis in adults. *Thorax.* 2019;74(Suppl 1):1–69. https://doi.org/10.1136/thoraxjnl-2018-212463.

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Service evaluation of a virtual group programme, for people with long-COVID-19 using a 'collaborative approach' in NHS Lanarkshire's COVID-19 rehabilitation team

Tara Carroll[1]

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Theme | Long-term conditions.

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Abstract

Aims and objectives

To deliver and evaluate a virtual nine week group programme for people with long-COVID-19, using a 'collaborative approach' in NHS Lanarkshire's COVID-19 Rehabilitation Team (CRT).

Background

The CRT is a multi-disciplinary team of allied health professions. Patients are offered 1:1 and/or group intervention, according to their needs.

The group programme is delivered virtually, offering eight spaces. A 'collaborative approach' to delivery was developed meaning sessions were led by the individual's needs, enhancing peer support and supported self-management. With facilitation, participants discuss their experiences within a predefined topic. A clinician then enters to discuss what has arisen, after which they exit. A closing discussion defines the takeaways.

Methodology

Qualitative feedback was collected from clinicians and participants, through questionnaire. Post-session review between the facilitators implemented a PDSA approach, identifying areas for immediate change.

Quantitative feedback was through patient reported outcome measures (PROMs), collected at the entry and exit of the CRT. Attendance was recorded and a cost analysis comparing group delivery versus 1:1 intervention completed.

Results

15 people were contacted; seven declined due to unavailability or lack of IT access. Eight people took part; 7:1 female to male ratio with an average age of 48. Seven received 1:1 intervention as well as group participation. The programme delivery required 63 hours of staff time.

There was 79% attendance; one participant left midway reporting all needs met. The programme generated three referrals for 1:1 intervention. After delivery, three patients were discharged from CRT, due to their goals being achieved. No patient fully completed their PROMs.

Questionnaire completion was received by seven participants with an overall satisfaction score of 4.3/5. 100% of participants agreed that the topics covered were relevant.

Feedback affirmed these themes: the interactive style, peer connection, learning from both clinicians and peers, and person-centredness. Clinician confidence in the collaborative approach increased by 76%. Cost analysis demonstrated a 45% saving in group delivery versus 1:1.

Conclusions and implications for practice

This virtual group programme was a positive intervention for people, improving and supporting management of their long-term condition, long-COVID-19. The collaborative approach personalised the delivery and optimised peer support. The lack of PROMs is a limitation as evaluation, has relied solely on qualitative measures. Increased clinician confidence should increase demand with more referrals, earlier referrals and/or less participants receiving both group and 1:1 intervention. This could see further improvement in outcome, experience and resource efficacy.

Does virtual group breathing pattern retraining improve symptoms of breathlessness in patients with breathing pattern disorder following COVID-19 infection?

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Theme | Long-term conditions.

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Abstract

Background

British Thoracic Society (BTS) guidelines recommend assessment of breathing pattern disorder (BPD), for ongoing breathlessness post COVID-19 infection. 23.7% of patients attending post COVID-19 clinic, were referred for breathing pattern retraining (BPR) (1), and evidence suggests that BPR can improve breathlessness arising from BPD (2). Due to large referral numbers, limited specialist work force and increased waiting times, following redeployment during the COVID-19 pandemic, virtual group BPR treatment (VGT) was trialled as an alternative to 1:1 intervention.

Aims and objectives

To evaluate if virtual group breathing pattern retraining is an effective treatment, and improves symptoms of breathlessness in patients with breathing pattern disorder, following COVID-19 infection.

Methodology

Data was collected from patients referred for BPR following completion of post COVID-19 multidisciplinary clinic assessment. Breathlessness (Dyspnoea-12 (D-12)), breathing pattern (Brompton Breathing Pattern Assessment Tool – BPAT), and fatigue (Fatigue Assessment Scale – FAS), were assessed by a specialist physiotherapist on referral, and on completion of VGT. VGT consisted of six, one hour, physiotherapist-led sessions, run fortnightly using a virtual platform. The programme included BPR at rest and on exertion, activity management, pacing advice, psychological health advice and

relaxation. The interactive nature of the sessions also enabled facilitated peer support. Group size was 6–10 participants. A Wilcoxon Sign Rank test was used, to compare pre and post treatment data.

Results

65 patients enrolled, 61 completed the groups in full across eight cohorts. Four dropped out, due to work or medical reasons.

Complete data sets (n = 38) were analysed (34 female, four male, median age of 45, 12 months post-infection).

Improvement in BPAT, D12 and FAS was statistically significant.

BPAT pre = 4.95, post = 1.46, p value <0.001.

D-12 pre = 16.6, post = 12.2, MCID = 2.83, p value = 0.002.

FAS pre = 34.0, post = 29.8 MCID = 4, p value = 0.003.

(MCID – minimally clinically important difference.)

VGT for 61 patients saved 192 hours of clinician time compared with usual, one-to-one intervention.

Conclusions and implications for practice

Virtual group BPR treatment improved breathing pattern and breathlessness, for patients with post COVID-19 BPD. With social distancing regulations, VGT offers an effective alternative to face-to-face group treatment. This saved clinician time, which could enable reduced wait times for treatment.

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Living feeling and thinking better with long-COVID-19 – A patient centred webinar

James Pidding[1], Melissa Heightman[1], Rebecca Gore[1] and Rebecca Livingston[1]

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Theme | Long-term conditions.

Correspondence author | James Pidding. Email: james.pidding@nhs.net.

Abstract

Background

Long-COVID-19 is defined as 'a long-term illness in which symptoms of COVID-19 persist for at least two months, typically more than 12 weeks' (1). Common symptoms of long-COVID-19 include breathlessness, fatigue, cognitive dysfunction amongst other symptoms (1), and it is estimated that between 3%–12% of people infected with the virus, develop long-COVID-19 symptoms (2).

The UCLH post-COVID-19 service is the lead provider for North Central London, and works with borough-based services to provide support and assessment for adults with ongoing illness, following COVID-19 infection. A large proportion of patients are referred on for community input, to aid their symptom management but there are currently long waiting lists. Therefore, a pilot of an online webinar, named Living Feeling and Thinking Better, with long-COVID-19 (LIFT-LC), was developed to try to support these patients.

Aim

To develop a webinar series to provide a multi-disciplinary approach to education, and self-management of the long-COVID-19 population.

Methodology

A scoping exercise was carried out initially by a physiotherapist to explore the number of patients seen within UCLH long-COVID-19 clinic, and community services. It was identified 3750 patients were seen per year, presenting with long-COVID-19 symptoms, 40 new patients per week with 70 follow ups. An MDT discussion with UCLH and community partners occurred to establish the need for ongoing support, and education for long-COVID-19 patients. The webinar was developed as a six-part series running weekly with specialists in each area (fatigue, breathing, cognition, work, sleep, psychological wellbeing, nutrition and current research), presenting each week.

Each week was chaired by a physiotherapist, and feedback was then collected after every session through an anonymous online google forms questionnaire.

Results

- The average attendance of the webinar was 195 patients, across the six-episode webinar series.
- 87.5% of patients found attending the LIFT-LC webinar series useful.
- 62.5% of patients suggested they would make immediate changes to their management strategies, as a result of attending the webinars.
- 97.2% of patients reported they would attend future webinars within the series, as a result of their experience of the series.

Conclusions and implications for practice

The webinar provides a useful and efficient way to provide education about symptom management to long-COVID-19 patients. Feedback from patients report the webinar is beneficial, and therefore has the capability to be expanded in the future.

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Application of surgical mask over ambulatory oxygen interfaces, improves oxygen availability and exercise potential in severe IPF: A case study

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Theme | Long-term conditions.

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Abstract

Background

Patients with severe lung fibrosis, have difficulty maintaining exercise capacity due to progressive lung restriction, impaired oxygen transfer, and reduced muscular and cardiovascular fitness. Engaging in functional activities and exercise, carries additional challenges of managing supplemental oxygen. For patients who are lung transplant candidates, these issues pose significant obstacles in maintaining optimum physical preparation for potential surgery. During physical conditioning sessions for a patient with severe lung fibrosis, we observed that use of surgical face mask over oxygen therapy, significantly enhanced oxygen availability, and subsequently improved their capacity for exercise.

Case Presentation

A 64 year old female with severe IPF (idiopathic pulmonary fibrosis) (DLCO 23%), was offered gym-based exercise sessions in the physiotherapy department, to allow for a controlled environment for exercise, and access to an unrestricted supply of oxygen. Treadmill exercise sessions were commenced to maintain the physical exercise preparation, required for lung transplant.

Placing a surgical face mask (used for infection control in a public setting) over nasal cannula or OxyMask™, demonstrated an improvement in SpO_2 readings at rest, and with exercise at high flows of 9, 10, and 12lpm. Oximetry maintained greater than SpO_2 90%, resulting in excellent duration for aerobic exercise (32 minutes), and achievement of target walk speed (2.9 km/h). Removal of surgical mask at the same oxygen flow rates, resulted in desaturation to SpO_2 83%–90%, reduced exercise duration and/or reduction of treadmill speed.

Conclusions and implications for practice

Placing a surgical mask over nasal cannula or OxyMask™, can significantly increase oxygen availability, and has interesting practical applications. It may be used in select patients to enrich or conserve oxygen supplies, and can also be used to influence exercise tolerance. Caution is required to identify presence of CO_2 retention, as higher levels of oxygen availability, may have a deleterious effect in some individuals. Consideration should also be given to observe for long-term deterioration that may be masked with unsuspecting enhanced oxygen support.

Further study is needed to confirm findings and observe the interaction of respiratory dysfunction, and breathing pattern, with oxygen interfaces and flow rates. Current oxygen assessments and education in clinical settings, should consider the influence of surgical mask when using oxygen therapy, as this continues to be required within infection control guidelines.

Ethical approval

Patient consent was granted to utilise the medical and physiotherapy records, for the purpose of disseminating these observations.

A personalised activity and lifestyle tool for people with cancer (CAN-PAL): A co-design study with patients and healthcare professionals

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Theme | Long-term conditions.

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Abstract

Background

Cancer is a leading and increasing, cause of death and disability globally (1). Physical activity has been positively associated with quality of life (QoL), in people with cancer; and there is evidence that meeting physical activity guidelines can improve cancer outcomes (2). Nevertheless, people with cancer report more activity limitations and poorer general health, than healthy individuals with barriers including symptoms, lack of information and time (3). There is a need for personalised plans and goals to support people, to integrate physical activity into daily life.

Aims and objectives

The aim of this study was to co-design a *Cancer, Personalised Activity and Lifestyle* tool (CAN-PAL), based on an existing physical activity tool, for people with Huntington's disease (PAT-HD).

Methodology

This mixed methods study included:

Phase one: workshop with people with cancer, to discuss suitable physical activities and adaptation of the existing tool. Data were recorded, transcribed and analysed thematically. Themes were discussed with our co-design team, including people affected by cancer to develop the prototype CAN-PAL and user guide.

Phase two: healthcare professionals (HP) with >12 month experience in cancer, considered the potential use of CAN-PAL, and completed a survey including the system usability scale (SUS), (scores 0–100, high score indicating better usability), and free text responses for further adaptations.

Results

Phase one: people affected by cancer participated in a workshop (n = 10), or interviews (n = 2). Five key themes were identified: physical activities, benefits, barriers, capability and resources, which informed the co-design of CAN-PAL, and inclusion of a physical activity diary.

Phase two: the user survey was completed by 12 healthcare professionals. Median (range) SUS score was 80 (50–95) (best score 100), scores >68 indicate good or better usability. Themes from the free text comments included strengths, amendments, considerations and limitations.

Conclusions and implications for practice

There is a need to embed physical activity promotion in the care of people with cancer. CAN-PAL is a simple tool which has potential to set personalised plans, and goals to integrate physical activity into daily life and maintain independence and wellbeing.

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Benchmarking of inpatient MND service provision

Aleks Sedgwick[1], Ashley Bridges[1] and Rosie Cormie[1]

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Theme | Long-term conditions, service development.

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Abstract

Background

Motor neurone disease (MND) is a complex neuromuscular disorder that the management of can be positively influenced, by respiratory physiotherapy, either through ventilation, cough augmentation or functional independence. Which trusts are providing this specialist input, and are all areas providing a similar level of input?

Aims and objectives

I sought to benchmark my trust service provision against other trusts nationally, to identify areas where we do well, and areas where we need to develop our service. This may be in terms of staffing, caseload, clinical input, specialist clinics, education or training.

Methodology

An email list of MND coordinators and therapy team leads, identified from the MNDA network and subsequent communication ($n = 51$). MND coordinators were asked to forward email to the appropriate therapy teams in their regions NIV centres, to allow wider capture of information.

Digital questionnaire constructed, approved by RSUH Team leads, was emailed to the above.

Responses collated and analysed for trends.

Results

Limited response rate ($n = 14$), of responses $n = 10$ were appropriate for analysis, due to incomplete/missing data. $N = 3$ trusts identified as being similar to UHNM for direct comparisons.

Therapy teams tend to be 'top heavy' with banding, likely due to specialism of care.

NIV initiation is varied between nurses, doctors and physiotherapy.

Cough augmentation as inpatient is comparable, but some of larger trusts have outpatient cough augmentation clinics.

MDT meetings varied significantly between trusts, highlighting differences in communication.

Physiotherapy inputs are largely consistent amongst the larger trusts; however occupational therapy input is highly variable, and lacking in some areas.

Conclusions and implications for practice

Review to establish an outpatient cough augmentation clinic, for our MND patients at UHNM with view to wider community links, and provide service for more neuromuscular disorders. Liaising with the community respiratory team to upskill for more comprehensive support, for complex groups.

Progressing the OT service at UHNM, highlighting specific training needs and service development opportunities.

For 100% of patients admitted with an exacerbation of bronchiectasis to the respiratory unit to be reviewed by a respiratory physiotherapist for chest clearance and appropriate referral for on-going self-management: Quality improvement project

Becky Edwards[1], Ross Butterworth[1], Ollie Arnoux[1] and Emily Stranney[1]

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Theme | Long-term conditions, quality improvement.

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Abstract

Introduction

The prevalence of bronchiectasis is increasing in the U.K. (1).

Our department has no specialist nurse or AHP-led (Allied Health Professions) service, specific to patients admitted with an infective exacerbation of bronchiectasis (IEBrx).

In September 2021, 40% of patients admitted to our respiratory unit with an IEBrx, were seen by respiratory physiotherapy and treated in accordance with all components of the BTS Guidelines (2019) (2).

Respiratory physiotherapy improves sputum expectoration, and reduces exacerbation frequency in bronchiectasis patients (3).

An IEBrx was classified as patients with a computerised tomography (CT) confirmed diagnosis of bronchiectasis, receiving 10–14 days of antibiotics (2).

Project aims

100% of patients admitted to our respiratory unit with an IEBrx, to be reviewed for targeted chest clearance, inline with CT findings, and where appropriate for onwards-referral for self-management (to community respiratory services), and pulmonary rehabilitation (MRC >1) to be made.

Outcome measures

8 data sets were collected over 16 months in a spot-check format.

- Percentage of patients identified and seen by physiotherapy.

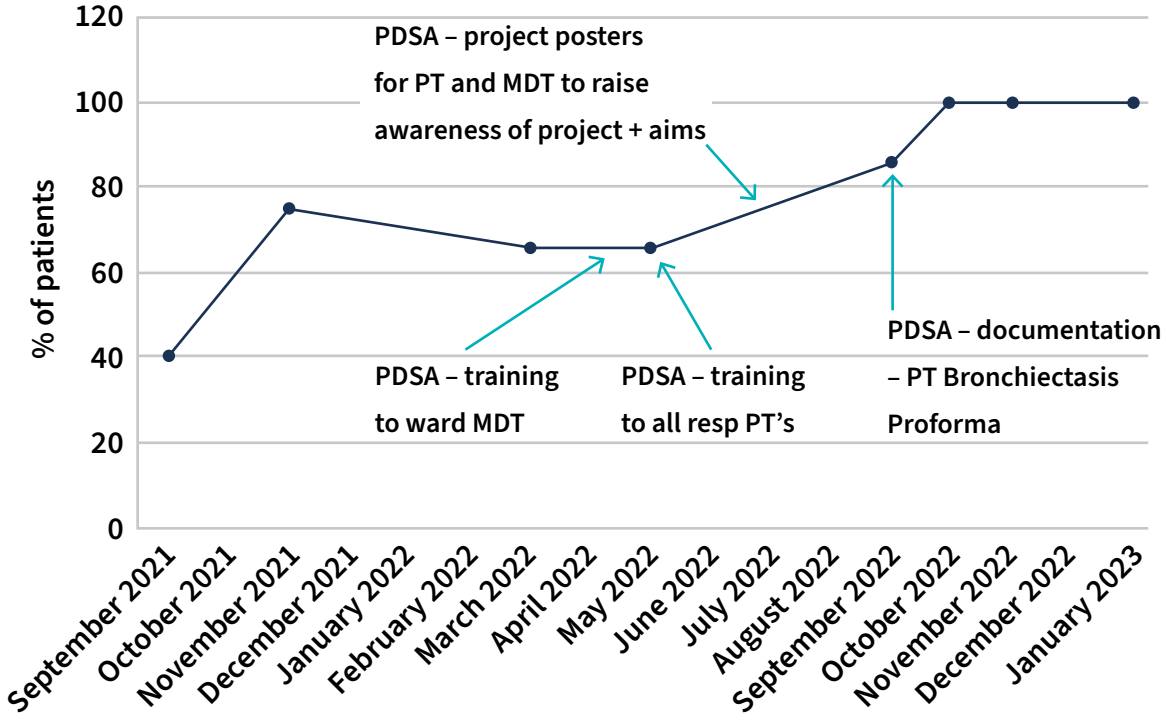

Figure 1: Run chart – overall percentage of patients who received care inline with all aspects of the BTS guidelines – project main aim.

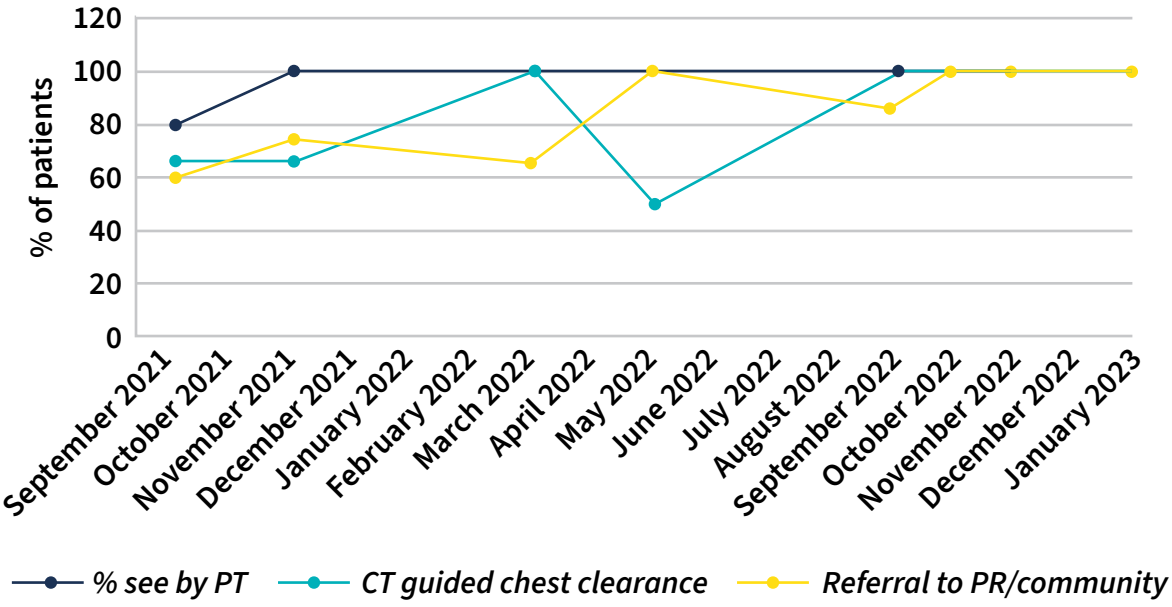

Figure 2: Run chart – for each of the project outcome measures.

- Percentage of patients reviewed for chest clearance.
- Percentage of patients for whom a referral to pulmonary rehabilitation and community respiratory services were considered.

Primary drivers and interventions through 4 PDSA cycles

Education and training – specialist respiratory physiotherapists provided bronchiectasis training to rotational staff, nurses and junior doctors to ensure patient identification and physiotherapy referral. Written information was included in physiotherapy induction packs.

Communication – project posters were created and displayed in three high visibility areas, on each ward to ensure accurate handovers and physiotherapy referrals.

System changes through documentation – a physiotherapy bronchiectasis proforma ensured key elements, of the BTS guideline were addressed in all patient reviews.

A respiratory physiotherapy overview sticker was created for the medical notes to ensure physiotherapy interventions were included, within the patients discharge letter.

Results

All IEBrx (on extended antibiotic courses) were identified and reviewed by physiotherapy, for chest clearance inline with CT findings – this was sustained for four consecutive data sets.

All of IEBrx patients considered for onwards referral to pulmonary rehab, and community respiratory services – this was sustained for three consecutive data sets.

Discussion

- MDT participation improved patient identification and referral to physiotherapy.
- Limited sample size (3–5 patients).
- Data collection suggests we are now treating all patients, included within the spot checks, in accordance with the BTS guidelines.
- We have demonstrated a sustained improvement, which will have positive impacts in exacerbation frequency and sputum clearance (3).

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Exploring physiotherapists' experiences in delivering care remotely to adults with cystic fibrosis during the COVID-19 pandemic in the U.K.

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Theme | Long-term conditions, COVID-19.

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Abstract

Background

The pandemic resulted in a rapid change in physiotherapy service delivery, for people with CF, with the transition from face-to-face to remote provision. Exploring the experiences of physiotherapists during this time, is important to understand the barriers and enablers to care, but also to identify the areas that worked well and the successes of remote provision, that may be utilised to support service delivery in the future.

Aims and objectives

The study aims to gain an insight into physiotherapists' experiences of their work during COVID-19, and how this may influence emerging future care for people with CF.

Research question: What are physiotherapists' experiences in delivering care remotely to adults with cystic fibrosis, during the COVID-19 pandemic in the United Kingdom?

Methodology

Qualitative, interpretive methodology was used to collect data through semi-structured interviews, with three participants (all females). Participants were recruited from across the U.K. through the professional networks. Interviews were completed online and digitally recorded, and transcribed verbatim (following the exact words). Thematic analysis was undertaken. Member checking was completed.

Results

Participants had a mean of 20 years of experience, of working with adults with CF. Three main themes were identified:

1 Delivering care in the pandemic.

2 Physiotherapists and pandemic era.
3 Post-pandemic era (suggestions).

Sub-themes were presented within these.

Conclusions and implications for practice

The findings reflect the changes that physiotherapists working in the pandemic, in CF services experienced. Several positives were reported including convenience for staff and patients; opportunity to see more patients; patient preference for remote consultations. Negatives were the absence of hands-on opportunity as part of the physiotherapy assessment, and the concern regarding reliability of home assessment tools. Concerns were also evident regarding the transitioning of patients from paediatric to adult services, and whether remote means best facilitated this. Looking to the future, staff adaptability was identified as a main key element for success, and amelioration of use of remote assessment tools, and the use of hybrid clinics were also suggested. The importance of offering a hybrid clinic; the essential role of education of the patient to ensure adherence; set of criteria for who needs to be assessed by virtual, or in-person means, were also all significant findings.

These add to a limited evidence base on this topic, with the findings offering valuable insights into the opportunities for post-pandemic care of adults with CF. Areas that future research may address are also evident.

Remote exercise services for people with cystic fibrosis: Voices from healthcare professionals

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Theme | Long-term conditions.

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Abstract

Background

Cystic fibrosis (CF) is a genetic condition affecting more than 10,500 people in the U.K. (1). Physical activity and exercise training are essential parts of physiotherapy treatment for people with CF (cystic fibrosis) PwCF (people with cystic fibrosis), with benefits in improving exercise tolerance, enhancing airway clearance, minimising lung infections, and supporting the preservation of lung function. However, PwCF's exercise adherence and motivation can be low (2). Evidence has shown that it is possible to deliver exercise training using online technology, with similar results to traditional in-person exercise training (3). This qualitative study aims to evaluate the perceptions and views of healthcare professionals on remote exercise services (RES).

Aims and objectives

- To investigate the perceptions and views of healthcare professionals on RES.
- To evaluate the perceived utility and motivation of RES.

Methodology

This study was conducted using online one-to-one semi-structured interviews through Zoom. Participants who have more than two years' experiences in working with PwCF, were included. All the interview data was auto transcribed through Zoom, and the transcriptions were checked by the researcher. The interview data was analysed by using reflexive thematic analysis method.

Results

A total of 12 healthcare professionals including nine physiotherapists, two psychologists, and one social worker, were interviewed. Five main themes with subthemes were

identified: *utility of RES, potential biopsychosocial benefits of RES, practical aspects to support engagement, barriers to engagement, and suggested future improvements.*

RES was considered to be cost-effective and improve work efficiency, particularly during COVID-19, and was described to be beneficial to PwCF in different biopsychosocial aspects. The accessibility and flexibility of RES, were highlighted by healthcare professionals along with safety considerations for PwCF. Barriers of RES including time constraint, lack of personal contact was mentioned. Some concerns of PwCF including poor internet connection and lack of equipment, were also raised. Healthcare professionals should consider more factors that can influence PwCF's motivation, when conducting RES and have more patient-centredness RES.

Conclusions and implications for practice

The perceptions of healthcare professionals on RES are overall positive. Healthcare professionals can play an important role in improving the adherence and motivation of PwCF, to join in HES more. The findings from this research indicate that the multidisciplinary team, should collaborate together and provide more education, more flexible online exercise training classes, and more patient-centred services to PwCF.

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Comparison of face-to-face versus alternative methods of pulmonary rehabilitation delivery (DVD/weblink/virtual/home) in the improvement of exercise tolerance and completion rates: A service evaluation

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Theme | Long-term conditions.

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Abstract

Background

Due to a service delivery pause during the COVID-19 pandemic, and during the recovery phase, pulmonary rehabilitation (PR) services experienced increased waiting lists, and increased referrals following guidance from the long-term plan (2019). A previous service evaluation examined alternative service delivery methods (options of virtual PR (public relations) or DVD/weblink), with reduced waiting times while delivering improvements in exercise tolerance measured using a sit-to-stand (STS) test.

Aims and objectives

Compared to traditional face-to-face group sessions, we evaluated whether alternative methods demonstrated comparable improvements in exercise tolerance (measured using incremental (ISWT), and Endurance Shuttle Walk test (ESWT) readings). The objective was to determine whether less resource demanding alternative treatment offers, should continue. Patients selected their preferred option of home, group, DVD/weblink, or virtual PR sessions, choice depended on preference, work or caring commitments, and ability to access a venue, DVD player or digital technology.

Methodology

Organisational compliance and assurance approval processes afforded approval for the evaluation; no participants were approached or recruited before this. The HRA decision support tool determined that this project, was not research. All patients appropriate for a physiotherapist's assessment for PR (public relations) from October 2022, were invited to participate in the evaluation. Data collection included method of delivery of the programme, incremental (ISWT), and endurance shuttle walk test (ESWT) readings, (used in a clinic setting, or STS in a patient's own home), attendance

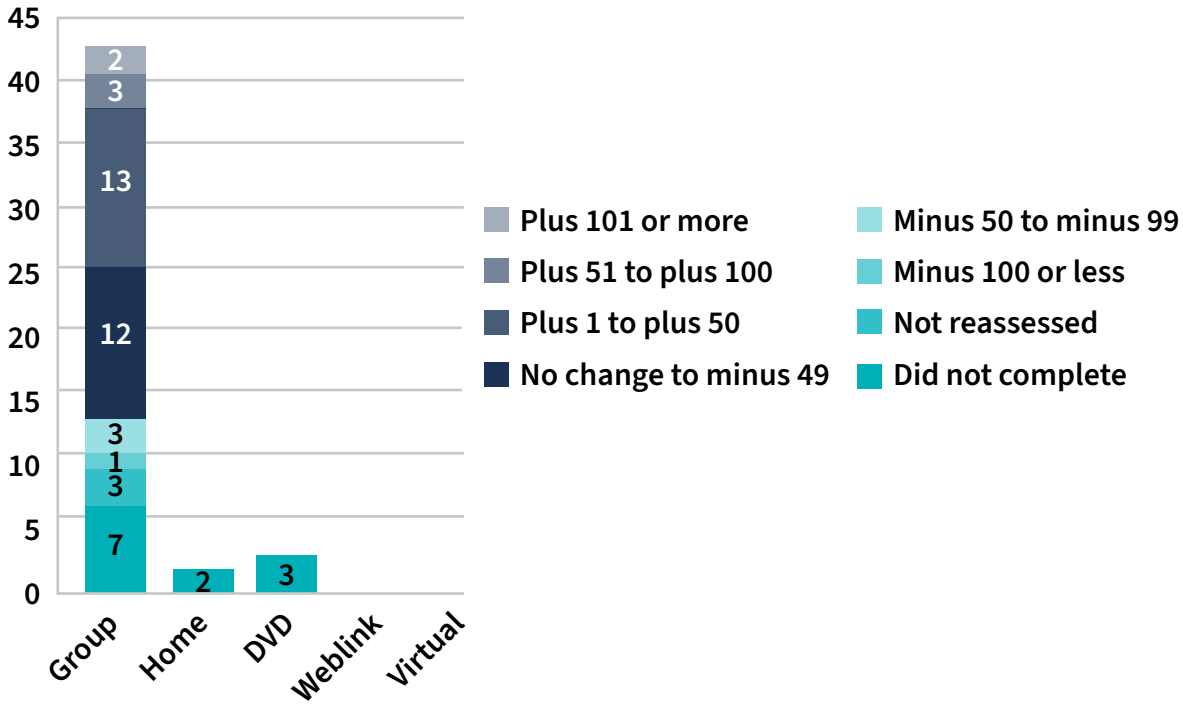

Figure 1: ISWT difference pre to post, by course type.

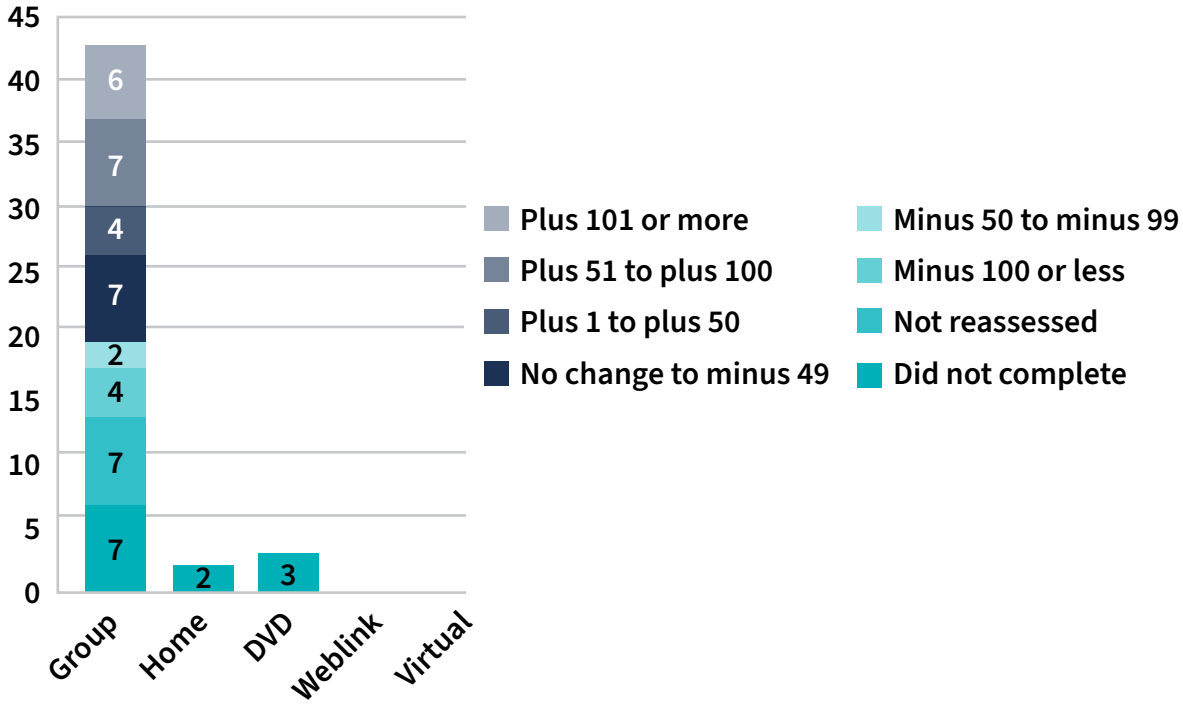

Figure 2: ESWT difference pre to post, by course type.

and completion of programmes as well as other quality of life and knowledge questionnaires. Interim data is presented to ensure early sharing of outcomes.

Results

In the short time available for data collection, early data indicates that most patients prefer the group option (group: 83%, home: 6%, DVD: 9%, weblink: 2%, virtual: 0%). Completion rates in the group setting was 84% (with 77% attending a reassessment), compared to 44% completing all other options combined (with 22% attending a reassessment). Improvements of 53% for ISWT, and 57% for ESWT achieved by group participants was higher than those achieved by all other options (50% for both ISWT and ESWT).

Conclusions and implications for practice

The group setting environment continues to be the most popular option compared to all other options, and completion rates were also higher in this group. Whilst improvement in exercise tolerance initially appears to be similar for group, versus other options there is not enough data to draw a strong conclusion (only two patients attended reassessment for all other options combined, compared to 34 for the group option), so further and larger studies are warranted to confirm this. In conclusion, group settings are likely to continue to be the primary methods of delivering PR. However, continued focus on other options is still required to determine whether they are a valid alternative, ensuring accessibility for all to PR.

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Scoping the literature how should airway clearance techniques be personalised in CSLDs?

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Theme | Long-term conditions.

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Abstract

Background

Airway clearance techniques (ACTs), are widely recommended to facilitate clearance of secretions from the airways in chronic suppurative lung diseases (CSLDs). Whilst individualised regimens are recommended, it is unclear how airway clearance techniques should be personalised.

Aims and objectives

To examine the extent and range of research on personalisation of ACT regimens in CSLDs, summarise key findings and identify any research gaps.

Methodology

As a broad and area without a previously published comprehensive review had not been previously undertaken, a scoping review was indicated to capture a broad range of publications. Online databases were searched systematically to identify full-text publications, from the last 25 years pertaining to methods of personalising ACTs in CSLDs. Data was extracted and charted using a framework based on the *Template for Intervention Description and Replication* (1). The findings were transformed into an ACT personalisation model.

Results

The types of publications identified were most commonly general review papers. The findings identified a range of considerations for ACT personalisation, which were grouped into seven personalisation factors; physical; psychosocial; ACT type;

procedures; dosage; response; provider. Some factors were found in a higher number of publications, it is unclear if some factors may be more important than others, when personalising regimens. Only two models of ACTs personalisation were found, which provided divergent guidance on how to personalise ACTs. As such a model for ACT personalisation was developed based on the factors identified from the publications found.

Conclusions and implications for practice

Clinicians consider a range of factors when personalising of ACT regimens for individuals with CSLDs. This review and its conceptual model provide a framework for education, practice and research on ACT personalisation.

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High engagement and data quality in physiologist-led home monitoring for people with COPD

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Theme | Long-term conditions.

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Abstract

Background

Remote monitoring can empower people with COPD to better understand their condition, and can identify changes in their health sooner, resulting in improved health outcomes. However, due to the variability in remote monitoring methodologies in the literature the engagement with, and the quality of health data collected in the home remains unclear. This interim analysis investigated the engagement with a COPD home, monitoring programme supported by respiratory physiologists. Monitoring included weekly spirometry and daily SpO_2, mMRC questionnaires and Fitbit step counts.

Methodology

Patients with known COPD identified by secondary care and specialist COPD community nurses, were consecutively enrolled into the NuvoAir COPD service. Patients were provided with a NuvoAir Air Next spirometer, pulse oximeter, Fitbit activity tracker and the NuvoAir Home app. Patients were onboarded to the programme through video and phone calls, with NuvoAir respiratory physiologists, and were coached how to perform independent weekly spirometry, and how to record the other measures daily. The NuvoAir team reviewed data and shared reports with the clinical team through alerts, or in brief bi-weekly online huddles.

Results

During the first six months, 52 people with COPD were referred, seven declined participation. Of 45 people onboarded the mean (±*SD*) age was 68 (±9) years (range 41–84

years), 26 were female. The mean (±*SD*) baseline FEV_1 was 37 %predicted (±13% predicted), 20% were mild-moderate, 47% were severe and 33% very severe. Baseline mean SpO_2 was 92%.

There were 3525 SpO_2, 2837 mMRC measures, 2857 days with Fitbit data recorded and 689 spirometry sessions performed over 35 weeks (22 April 2022 to 30 November 2022). Of the participants onboarded, 96% participated for the entire 35 weeks.

There was a median of 99% adherence to weekly spirometry sessions. Per participant, a median of 71% of spirometry sessions were graded A–C indicating high quality data (ATS/ERS 2005 criteria). Those who achieved D–F grade spirometry, were offered coaching sessions to improve their technique. The median adherence to daily monitoring was 94% for SpO_2, 75% for mMRC (both Monday–Friday), and 49% for Fitbit (Monday–Sunday).

Conclusions

With personalised physiologist coaching and support, there was a high level of engagement with remote monitoring and repeated good quality spirometry was achieved, by people with COPD. NuvoAir regularly shared data insights with hospital clinicians for treatment optimisation. Analysis of the clinical impact of these data insights on the outcomes of people with COPD, are being evaluated.

Respiratory physiotherapy – What's our role within the emergency department?

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Theme | Long-term conditions, urgent/emergency care.

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Abstract

Background

Respiratory physiotherapy within the emergency department (ED) at Leicester Royal Infirmary (LRI), is currently bleep cover only to acutely deteriorating patients, being reliant on referrals, rather than proactive input. An initial six-week project identified numerous patients that benefited from respiratory physiotherapy input, in the ED but primary focussed on one patient group, and outcomes before and after were not compared.

Aims and objectives

To highlight the impact that an increased respiratory physiotherapy presence within the LRI ED could have, on meeting national guidance from the National Institute for Health and Care Excellence (2018), and British Thoracic Society (2018) for the management of respiratory conditions, particularly in regard to respiratory physiotherapy input.

Methodology

A two-week service analysis was undertaken, looking at the impact an increased presence in the ED would have, on meeting national guidelines for patients with infective exacerbations (IE) of COPD, or bronchiectasis, patients with tracheostomies or laryngectomies, patients under the long-term ventilation team, or patients with neuromuscular disease requiring NIV. Week one remained bleep cover only for deteriorating patients meeting on-call criteria. Data was collected retrospectively for patients that would have been admitted to the ED, during normal working hours (08:30–16:30, Monday–Friday), and spent at least an hour in the ED. An enhanced service was provided in week two with regular, proactive screening of the ED, a respiratory physiotherapy presence in the ED, and early review of patients who presented with an indication for respiratory physiotherapy input. Data was collected and compared to week one.

Results

In week two of the project, 100% of patients admitted to the ED with a tracheostomy or IE-COPD, were reviewed by a respiratory physiotherapist in the ED, compared to 0% in week one. No patients with an IE-bronchiectasis were admitted in week one, during our working hours, but in week two, 75% of patients admitted with an IE-bronchiectasis, had their airway clearance reviewed by a respiratory physiotherapist. In week one, no patients were admitted to the ED in our working hours, that were under the long-term ventilation team, whereas in week two, of the two patients included, target oxygen saturations were documented for both, home nebulisers prescribed as indicated, and airway clearance reviewed for one patient.

Conclusions and implications for practice

This small-scale service analysis project has shown that even within a short timeframe, having an increased respiratory physiotherapy input, in the LRI ED would result in a greater adherence to national guidelines, particularly in regard to reviewing airway clearance, in patients with respiratory conditions.

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Collaboration between Islington pulmonary rehabilitation (PR) service, and Arsenal Football club – Staff and patient perspectives

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[2]University College London Hospitals NHS Foundation Trust, U.K.

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Theme | Long-term conditions.

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Abstract

Background

As part of the North Central London health inequalities in PR initiative, a pilot service was set up in December 2022, to deliver a PR programme to clients of the drug and alcohol addiction service, located at Better Lives, Islington. This cohort are recognised as a complex and difficult to engage with group, by existing services and healthcare in general. Arsenal Football Club (AFC) already have successfully established exercise groups as part of their Arsenal Community Health outreach work, which focuses on working with underprivileged groups. AFC's Shape Up programme, includes classes for falls and balance, weight management and behaviour change.

Staffing within PR services is a national challenge. Collaborating on this project provided a short-term solution by utilising an AFC exercise coach (level 3 training), as the second person running the PR group. Physiotherapists carried out all the assessments and supported delivery of each class.

Aims and objectives

To collect feedback and evaluate the impact of using exercise trainers from the AFC community health outreach team, with this cohort of patients, and use the findings to consider whether it may create a more formal and ongoing alliance.

Methodology

Semi-structured interviews were conducted with patients and staff from AFC, the PR service and written feedback, was requested from the drug and alcohol staff.

Results

Patients reported 'feeling valued' and 'super secure', knowing that there was 'a health-care professional focusing on their breathing, balance' and making sure 'they didn't have a heart attack' in sessions. The relationship with AFC, added an additional exciting dimension irrespective of interest in football.

The AFC staff highlighted the perceived importance of representing AFC, through how they presented themselves to patients. Their branding also brought a 'fun element' to the groups. It was also noticed by HCP's, that therapeutic alliances and trust were quickly established between AFC staff and patients.

Conclusions and implications for practices

The pilot was small but provided valuable qualitative feedback.

As a model for PR service provision, sports exercise trainers can be successfully utilised, alongside specialist supervision. Patients under care of addiction services frequently report negative experiences with the healthcare system. Working with a respected sporting organisation may 'de medicalise' PR. Utilising exercise coaches on a sessional basis (with appropriate training and supervision), can be one way of successfully addressing the shortfall in staffing PR services.

Further feedback and analysis of the initiative is required, to further understand the benefits and possible drawbacks.

Staying active whilst living under threat: A qualitative study in people living with chronic respiratory disease during the COVID-19 pandemic

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Theme | Long-term conditions.

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Abstract

Background

Adherence to physical activity (PA) is fundamental in the management of chronic respiratory disease (CRD), and is associated with reduced symptom burden and improved quality of life (1). People living with CRD were advised to shield in the early phases of the COVID-19 pandemic, resulting in changes in daily activities and exercise habits contributing to reduced PA (2). However, little is known about the factors affecting PA adherence, during the pandemic.

Aim

To explore barriers and facilitators to PA, during the COVID-19 pandemic amongst people living with CRD, and provide insight into future support required for PA adherence.

Method

A qualitative study using interpretative phenomenological analysis (IPA), was used to explore in-depth experiences. Ten individuals living with CRD (including asthma, bronchiectasis, chronic obstructive pulmonary disease, and interstitial lung disease) were interviewed 1:1, using a semi-structured approach. Verbatim (following the exact words) interview transcripts were analysed using IPA steps: 1) case-by-case review, 2) identify emergent themes for each individual, 3) identify master themes across all cases, 4) theme validation. Trustworthiness was enhanced by researcher triangulation, member checking and use of a reflexive diary.

Results

All individuals reported reduced PA throughout the pandemic, and associated negative impact on mental health. Five master themes were identified: (1) fear of COVID-19, (2) influence of government restrictions, (3) top priority or on the backburner,

(4) reinforcing or reducing motivation, (5) personal context is key. Increased provision of virtual support was identified as a means to support PA adherence. Many individuals felt that underrepresented sub-groups of the CRD population (such as those with less prevalent conditions), would benefit from support that is tailored to their specific needs.

Conclusion

Fear of COVID-19 and the prolonged effects of shielding contributed to reduced self-reported PA adherence, in people living with CRD throughout the pandemic. Individualised support addressing physical, mental and social health needs, is required to reverse the negative effects of reduced PA adherence, and improve wellbeing in this population. Healthcare professionals should be aware of the long-term effects the pandemic may have had on PA adherence, in this population, and could seek to address this through increasing uptake to pulmonary rehabilitation (PR). Further research is required to determine an effective practical approach to meet the evolving needs of the CRD population, and consider the complexity of PA adherence during a pandemic.

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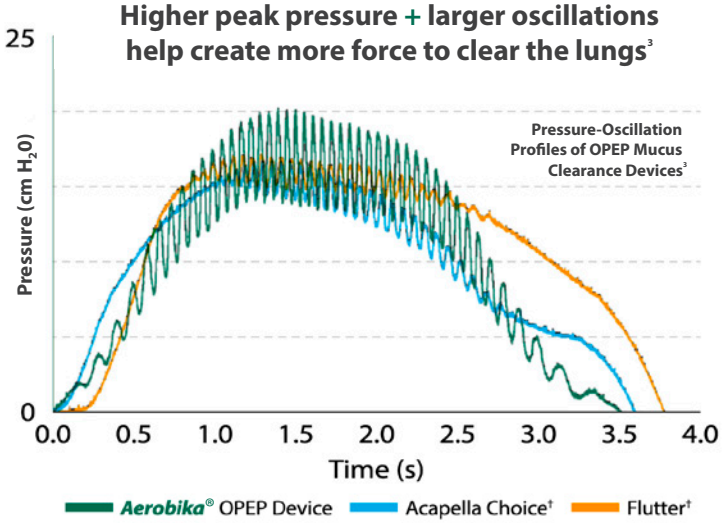

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Virtual physiotherapy for breathing pattern disorder in asthma: Not all that glitters is gold

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Theme | Long-term conditions.

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Abstract

Background

Breathing pattern disorder (BPD), can cause debilitating symptoms of breathlessness, and is being recognised as a significant comorbidity in people with difficult to treat asthma, and poor asthma control. Physiotherapy treatment (breathing retraining) can improve symptoms, function, quality of life and inhaler use. Outcome measures in this condition are still being tested and developed.

Aims and objectives

The primary objective of this project was to collect retrospective patient reported outcome measures, and gather information about how physiotherapy impacts outcomes in this cohort. The secondary objective was to collect general variables and outcomes.

Methodology

A retrospective chart audit was completed. Discharged patients referred to physiotherapy by the asthma team for breathing pattern assessment, over a nine month period ($n = 71$) were included. Statistical analysis carried out on STATA, with support from the trust statistician. Shapiro Wilk testing was used to evaluate normality. Chi squared test was used to analyse relationships between categorical variables. A Mann Whitney U, was used for non-parametric data. A binary logistic regression was used to calculate the odds ratio.

Results

Only two patients had all three (Dyspnoea-12, Nijmegen questionnaire, and Brompton Breathing Pattern Assessment), outcome measures completed pre and post treatment. Completion rate was 42% ($n = 30$). With hypothesis testing, a highly statistically significant correlation was discovered ($p = 0.006$), between a virtual only delivery and treatment non completion. There were no statistically significant associations between treatment non completion, and waiting time or whether the patient was seen in clinic. Patients whose therapy was delivered in a flexible, hybrid mode were 6.8 times more likely to complete treatment, than patients whose therapy was delivered in a virtual only delivery, and three times more likely to complete treatment than a face-to-face only delivery.

Conclusions and implications for practices

Telehealth and virtual consultations are a novel and exciting way to deliver therapy, to as many patients as possible. However, this study highlights that there is a strong correlation between virtual only appointments, and likelihood of dropping out of treatment. A flexible, hybrid mix of virtual and face-to-face appointments, appears to be optimal to improve likelihood of treatment completion.

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SETTLE – uSing wavEforms To identify Laryngeal rEsponses: A protocol description

Stephanie K. Mansell, Rhiannon Parry, Amar Shah, Louise Coase, Francesca Gowing, Charlotte Greenfield, Richard Orrell, Yogesh Bhatt and Swapna Mandal

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Theme | Long-term conditions.

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Abstract

Background

Respiratory muscle weakness commonly develops in people with neuromuscular disease (NMD), which often impairs their cough strength and ability to clear secretions. This can result in recurrent chest infections, hospital admissions and an increase in symptom burden, resulting in impaired quality of life, and ultimately increased risk of mortality. Respiratory physiotherapists use mechanical insufflation:exsufflation (MI:E), or coughassist, with this patient group to improve cough strength. Some patients with NMD, especially those with bulbar dysfunction, can have a laryngeal response to MI:E, rendering the treatment ineffective. Currently, the only way to assess this is with nasal endoscopy whilst simultaneously using MI:E. Some MI:E devices record breath-by-breath waveform data, and store it on a secure data (SD) card. These waveforms may be able to help identify if a patient has had a laryngeal response to MI:E.

Aims and objectives

This study aims to establish if waveform data can effectively identify laryngeal response to MI:E, in the NMD population. This would enable physiotherapists in clinical practice to identify bulbar responses more easily, and alter treatment prescriptions to maximise effectiveness of treatment.

Methodology

Baseline assessments including spirometry, peak cough flow, and sniff nasal inspiratory pressure will be measured. The participant will have their MI:E settings optimised clinically, by a physiotherapist. A range of MI:E settings will then be delivered with a simultaneous nasal endoscopy, through an adapted facemask to visualise a laryngeal

response. The video of the larynx will be compared with the waveforms downloaded from the SD card.

Results

The study has been open to recruitment since January 2022, and aims to publish trial results in June 2024.

Are tracheostomy and laryngectomy cares meeting the NTSP guidelines?

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Theme | Audit.

Correspondence author | Natalie Sherborne. Email: natalie.sherborne1@nhs.net.

Abstract

Background

Tracheostomy and laryngectomy patients were becoming more common on the respiratory support unit (RSU), of a large teaching hospital trust. Several safety concerns were raised regarding the care of these patients. The National Tracheostomy Safety Project have worked to improve the care of these patients, and along with NCEPOD (National Confidential Inquiry into Patient Outcomes and Death (NCEPOD), have set standards of care and developed tools to allow NHS trusts, to improve their care of these patients as they state that '*a patient with a tracheostomy or a laryngectomy is at risk of death or harm, if inappropriate or inadequate care is provided*'.

Aims and objectives

1 To establish whether the RSU are meeting the NTSP guidelines for tracheostomy and laryngectomy care.
2 To highlight any gaps in care and documentation, which may need further education.
3 To improve patient safety.

Methodology

An audit against the 'tube care section' of NCEPOD's 'on the right track' tracheostomy audit, was completed on the RSU on two separate occasions by the specialist physiotherapists working on the unit. Notes, care plans and observations charts were reviewed to gather information. Nursing staff answered a questionnaire regarding their confidence with looking after patients, with a tracheostomy or laryngectomy. Incident reports related to tracheostomy and laryngectomy cares on the RSU were also reviewed, in the three months prior to the audit and the three months following.

Results

The first audit included five patients with tracheostomies or laryngectomies on the ward at the time, and the second included four patients. The first audit scored 26.84% against the NCEPOD audit tool, with documentation being inconsistent. The repeat audit following the implementation of the specific tracheostomy and laryngectomy observation chart scored 75%. Nursing staff reported feeling more confident in their understanding of caring for these patients, and found the observation charts easy-to-use on a follow-up questionnaire. There were three incident reports related to cares prior to the audit, and implementation of the observation chart and increased education, and none in the three months following.

Conclusions and implications for practices

Whilst there are still areas to improve on, and some inconsistencies remained on the repeat audit, there was a significant improvement in the carrying out and documentation of tracheostomy, and laryngectomy cares on the RSU. The main area that still needs development is the checking of the emergency equipment in the patients room, and documentation of this. Further education on tracheostomy and laryngectomy care is planned with study days for nursing staff and physiotherapists, along with a trust wide tracheostomy collaborate looking to audit the cares across the entire hospital, and produce standardised care.

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An exploration of respiratory physiotherapists experiences during the COVID-19 pandemic

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Theme | Exploration of experiences.

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Abstract

Background

The COVID-19 pandemic has had a significant impact on the services and staffing of the National Health Service, and whilst there have been some studies exploring the experiences of healthcare professionals, mainly nursing staff, there has been very little exploration of respiratory physiotherapists experiences, who contributed to the acute care of patients during this time.

Aims and objectives

The objectives of this research were:

1 To explore the changes to the role of the respiratory physiotherapist during the first and second waves, of COVID-19, in the U.K.
2 To explore the personal well-being of respiratory physiotherapists at this time.
3 To discover what respiratory physiotherapists feel the future holds for the profession.

Methodology

A qualitative exploratory study comprising of an online questionnaire, followed by several in-depth interviews was carried out. Reflexive thematic analysis was used to identify the themes in the data.

A total of 94 participants completed the questionnaire, with six follow-up interviews completed, with the questionnaire and interview data combined for analysis.

Results

Thematic analysis identified a total of nine themes and seven subthemes from the dataset. These themes include the changes to the role of the respiratory physiotherapist, such as working patterns, issues around aerosol generating procedures and the

availability of personal protective equipment, the health and well-being of physiotherapists who worked during this time, and also what respiratory physiotherapists hope for the future of the profession.

Conclusions and implications for practices

To the best of the authors knowledge, this was the first study to explore the role of respiratory physiotherapists working in the National Health Service, during the first year of the COVID-19 pandemic, and the results have identified the challenges and experiences those respiratory physiotherapists faced. The results have highlighted topics that could be explored in more depth, to support the profession going forward, such as the longer effects the pandemic has had on the profession, and how the role of the respiratory physiotherapist could look to progress in the future.

Inspiratory muscle training for a child with Guillain-Barré syndrome: A case report

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Theme | Critical care, leadership and innovation.

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Abstract

Introduction

Inspiratory muscle training (IMT) facilitates resistance training for the respiratory muscles, by improving strength, stamina and reducing respiratory muscle fatigue (1). Despite limited evidence for the use of IMT in a paediatric population, the emerging literature shows positive benefits for ventilation weaning and acquired weakness (2, 3).

Case summary

This case report presents a 10 year old child with Guillain-Barré syndrome (GBS), requiring mechanical ventilation. After a period of stabilisation, the patient began to wean from ventilation and begin neurorehabilitation. IMT was commenced to combat the effects of prolonged ventilation and neuromuscular weakness. IMT, using a Powerbreathe KH2, was completed once per day, five days a week, over a seven week period. A maximal inspiratory pressure (MIP) test was completed weekly, and the training load attempted at between 30%–50% of MIP result. The patient performed training in an upright position in bed or in a chair, and did 30 breaths in total (6 sets of 5 breaths). This protocol was guided by the manufacturer's advice and supporting literature (3).

Results

MIP improved from 5.83 to 51.35 (cmH_20) from commencing use of IMT to discharge from hospital. Average flow improved from 0.32 to 2.351 (L/s) and best flow improved from 0.524 to 2.6 (L/s). There were no adverse effects of using IMT.

Discussion

This case summary shows evidence of an improvement in inspiratory muscle strength for a child with GBS, following a seven week period of IMT use. It is acknowledged, that the improvement occurred whilst also receiving other therapies for GBS (pharmacological and non-pharmacological), and therefore the direct impact of IMT on inspiratory muscle strength cannot be concluded. Interestingly, a drop in MIP from 51 to 41cm H_20, was observed following a period of non-use on discharge home. This would

suggest that regular IMT was improving inspiratory muscle strength, and that the period of non-use was disadvantageous.

Conclusions and implications for practices

This case report highlights the potential benefits for using IMT with paediatric patients with muscle weakness, following prolonged mechanical ventilation. Further research is required to determine and guide the role of IMT, in a paediatric population.

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Can ventilation MRI provide insight into the effects of airway clearance techniques in PCD?

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Theme | Long-term conditions.

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Abstract

Background

Airway clearance techniques (ACTs) are essential in the management of primary ciliary dyskinesia (PCD), however the short-term effects of personalised ACTs are unknown. ^{129}Xe ventilation MRI (^{129}Xe MRI) is an imaging method that can directly image the distribution of ventilation within the lung.

Aims and objectives

To assess the short-term effects of a personalised ACT, using ^{129}Xe MRI, on the distribution of ventilation in children with PCD.

Methodology

Clinically stable children with PCD were imaged using ^{129}Xe MRI, immediately pre, post and at four-hours post a single ACT session. ACT sessions were based on the individual's usual regimen, and included: positive expiratory pressure (PEP), oscillatory PEP, positioning, forced expiratory techniques, cough, nebulised hypertonic saline, and salbutamol. From ^{129}Xe MRI, the ventilation defect percentage (VDP) and

ventilation heterogeneity index (VHI) quantify the proportion of unventilated lung, and the degree of ventilation heterogeneity in the ventilated regions respectively. Data are expressed as mean ± standard deviation.

Results

Ten children with PCD were assessed (six male, aged 8–17 years, FEV_1 = 84.4 ± 18.6%, VDP = 9.0 ± 6.8%). Immediately post-ACT and four-hours post-ACT, there was no significant group difference in VDP (Figure 1a). In patients with more severe disease (n = 3, pre-ACT VDP = 17.6 ± 3.0%), VDP worsened immediately post-ACT (VDP = 25.0 ± 2.8%), then returned towards baseline at four-hours post-ACT (VDP = 18.8 ± 2.8%). In those with milder disease (n = 7, pre-ACT VDP = 5.1 ± 3.0%), VDP improved in 5/7 individuals, both immediately post-ACT (VDP = 4.5 ± 3.3%), and at 4-hours (VDP = 4.1 ± 2.9%). Whilst VHI was not significantly different immediately post-ACT, a significant difference was seen at four-hours post-ACT (p = 0.0063) (Figure 1b). Heterogeneous visual changes to the distribution of ventilation were seen in most patients, including defect resolution, improvement, persistence, and emergence of new defects in some cases. In seven patients (three with more severe disease, four with milder disease), new or enlarged wedge-shaped defects were present immediately post-ACT, which resolved (either partially or fully) after four-hours (Figure 2).

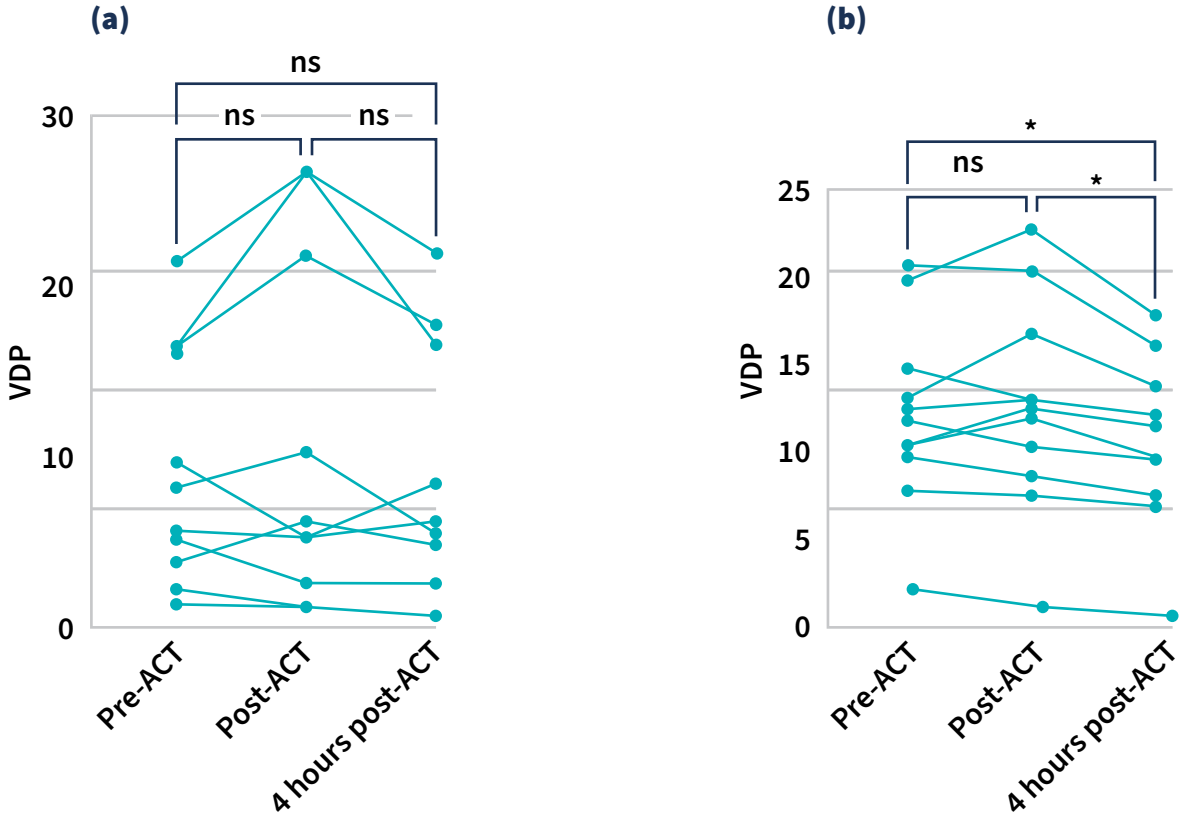

Figure 1a: Ventilation defect percentage (VDP) pre, post and four hours post ACT.

Figure 1b: Ventilation heterogenity index (VHI) pre, post and four hours post ACT.

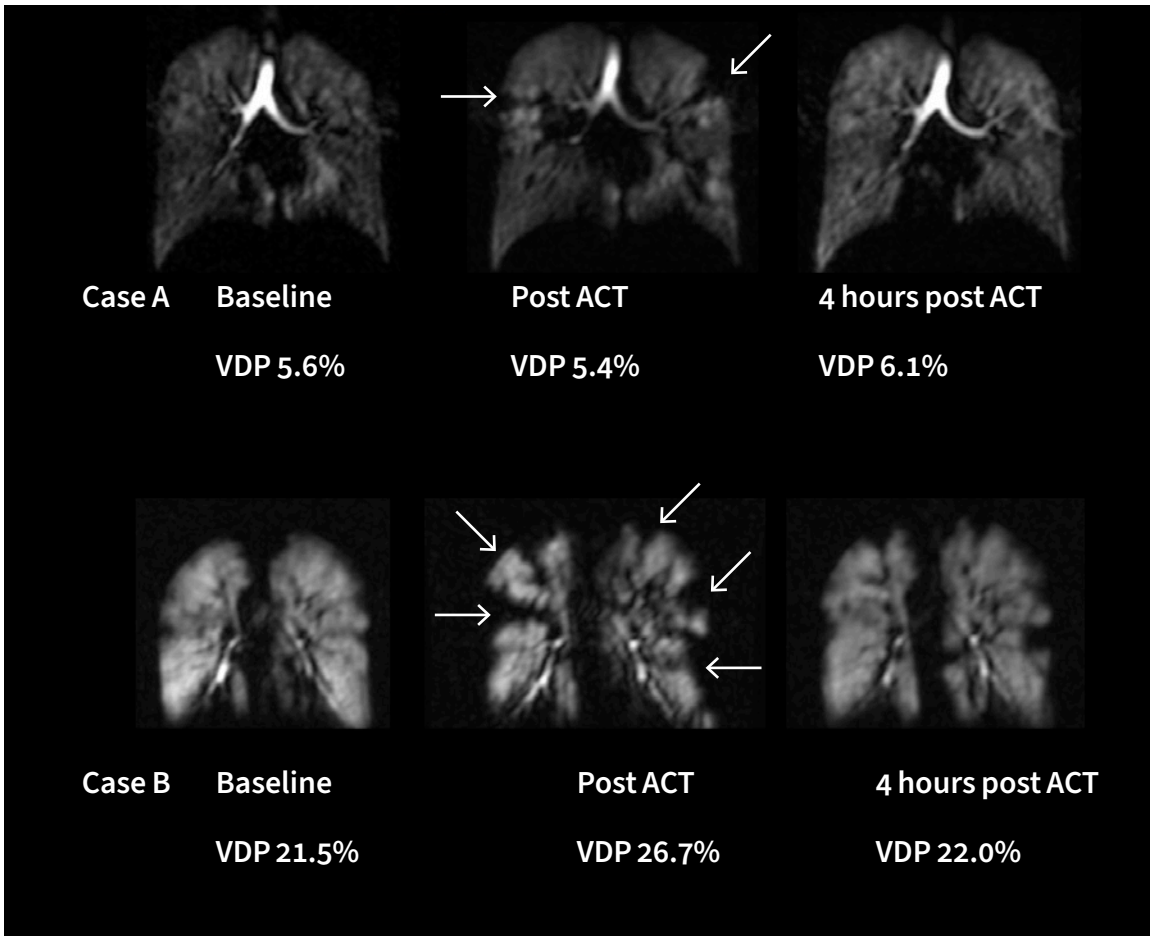

Figure 2: ^{129}Xe MRI images from amild (Case A) and a more severe case (Case B). Arrow indicates emerging defect.

Conclusions and implications for practices

^{129}Xe MRI is a sensitive method for assessing the effects of ACTs in PCD. Personalised ACT regimens have a heterogeneous impact on the distribution of ventilation abnormalities. This data suggests that a single ACT session in some individuals, may mobilise secretions proximally, causing greater ventilation defects to occur distal to the secretions. The location and nature of ventilation defects may provide clinically relevant information to guide ACT recommendations.

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Personalised approach to palliative decannulation in a tracheostomised patient: A case study

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Theme | Palliative care patient management.

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Abstract

Background

There is limited literature exploring the role of palliative decannulation in patients, with a recent tracheostomy and poor prognosis, however, the available evidence suggests decannulation as a palliative measure in carefully selected patients, can decrease dyspnoea, pain and improve patient comfort (1).

Physiotherapists often play a pivotal role in tracheostomy decannulation. This, coupled with patient and family priorities of high quality multidisciplinary team (MDT) communication, symptom management and comfort optimisation during the palliative care pathway (2), means it is essential clinicians work effectively, to establish individualised, shared patient management plans.

Aims and objectives

To review the effect of a personalised approach to management of a tracheostomised patient with poor prognosis.

Description

A patient was admitted to the Enhanced High Care Unit (EHCU), following an out-of-hospital cardiac arrest approximately one month prior. The patient was tracheostomised to aid ventilator weaning in the context of a hypoxic brain injury with consistently low GCS, and high pulmonary secretion load.

Early family and MDT discussions were facilitated on the EHCU to discuss current condition, treatment and establish both patient and family wishes, in relation to ongoing management in the best interests of the patient, being unable to communicate.

Clear verbalisation of patient wishes, in case of severe disability, had been communicated to multiple family members prior to admission.

Numerous family and MDT discussions, explanation of management options, assessment of clinical stability, and airway patency assessment helped inform the decision for palliative tracheostomy decannulation, and a clear escalation plan of 'not for reinsertion of tracheostomy'.

Urgent referral to the Hospital Palliative Care Team (HPCT), chaplaincy team and prescription of anticipatory medication were completed to meet the clinical and spiritual needs of the patient.

The physiotherapist took a lead role in decannulation, including communicating with the family. Daily input from HPCT was provided to ensure patient comfort and family support, until the patient died peacefully later that week.

Evaluation

A personalised approach to palliative decannulation, ensuring effective communication, MDT involvement and timely specialist referral, helped achieve a 'good death' in this tracheostomy patient with a poor prognosis (3).

Conclusions and implications for practice

As knowledgeable clinicians in tracheostomy management, respiratory physiotherapists should proactively facilitate compassionate conversations, with families at the earliest opportunity, to ensure personalised patient care. This case study highlights the key role of physiotherapists in palliative tracheostomy decannulation, and the importance of developing advanced communication skills to optimise management of this patient population.

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The effectiveness of group clinics for children with breathing pattern disorders (BPD): A service evaluation

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Theme | Paediatrics.

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Abstract

Background

BPD is a significant comorbidity in children and young people (CYP). Referrals to physiotherapy for management of BPD have exponentially increased, leading to long wait lists for initial and follow up appointments, impacting patient attendance and engagement.

Aims and objectives

To establish the effectiveness of physiotherapy group clinics on patient outcomes, engagement and clinic time.

Methodology

Eligibility criteria included a diagnosis and understanding of BPD, following an individual physiotherapy assessment, and an ability to breathe nasally.

After school group clinics were developed for four consecutive weeks, across three different age categories (5–8, 9–12 and 13–16 years). Clinics were hybrid, with an option to attend physically (F2F) or virtually. Treatment included education, Buteyko breathing techniques, healthy living advice and signposting to activity and wellbeing services. Following group completion, patients were discharged or offered further individual sessions.

Data was collected from June 2021–June 2022.

Outcome measures:

- Nijmegen questionnaire (NQ) pre and post clinic.
- BPAT (Breathing pattern Assessment Tool) score, during first and final clinic.
- Clinic attendance (virtual or physical).
- Patient satisfaction surveys.
- Physiotherapy intervention time.

Results

- 48/114 (42%) patients who were referred to the clinic, completed the full course. 33/48 attended virtually, 12 physically and three hybrid.
- On completion, two required a further individual session due to their age and difficulties focusing.
- 42/48 (88%) showed BPAT score improvements, with an average reduction of 3.7.
- 2/48 showed no change, 1/48 deteriorated, and 3/48 did not complete their final BPAT score.
- There was minimal difference in breath pattern improvements, when comparing virtual and F2F attendance.
- 28/48 (58%) completed a NQ. 22/28 (79%) showed symptom improvements with an average score reduction of 6. 1/28 demonstrated no change, and 5/28 demonstrated deterioration, notably 3/6 were aged 5–8 years.
- Attention and engagement for this age group during sessions, was noticeably challenging.
- The older the patient, the more significant their improvement in BPAT and NQ.
- 25 patients provided anonymous feedback. 100% reported the group was helpful, with 76% reporting immediate improvements. 60% preferred virtual compared with F2F sessions.
- 48 group sessions were delivered, compared to 192 clinic sessions, if patients were seen individually, totalling 144 saved clinic hours.

Conclusions and implications for practices

- Group sessions significantly reduced clinic time, positively impacting patient access to care, wait times and cost.
- Group clinics were effective at improving patient outcomes with BPD.
- The content and format for the younger group clinic, needs to be reviewed and altered to promote better engagement and improvements.

Cardiac rehabilitation of patients with cardiovascular diseases during COVID-19: A systematic review

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Theme | Rehabilitation and COVID-19.

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Abstract

Background

In 2020, a novel coronavirus infected almost 7.4 million people in China. A decline in the hospitalisation of patients was observed, along with a partial or complete closure of cardiac rehabilitation (CR) centres. There is a need to explore the type of CR delivery and the challenges healthcare teams face. The aim of this study is to identify, critically assess, and evaluate the studies on cardiac rehabilitation in patients with cardiovascular diseases during COVID-19.

Aims and objectives

- To identify, critically assess and evaluate the studies on cardiac rehabilitation in patients with cardiovascular diseases, during COVID-19.
- To learn more about the risk factors, indications, and contraindications for cardiac rehabilitation, in patients with cardiovascular disease.
- To investigate the various types of cardiac rehabilitation delivery, as well as the challenges that patients with cardiovascular diseases and providers face.

Methodology

To find the relevant studies, the following databases were searched: Biomed Central, Cochrane Library, MEDLINE, PUBMED, Science DIRECT, Scirus Wiley, and Online Library, were all searched with different keywords like 'cardiac rehabilitation', 'exercise training', 'telerehabilitation', 'COVID-19', 'cardiovascular disease', and 'COVID-19 pandemic'.

Results

After searching through several databases, a total of three studies were included in this systematic review, according to eligibility criteria. During the screening of articles, two RCTs and one experimental design, without randomisation were found. A study reported that cardiorespiratory fitness improved by 8%, as a reduction in 200 mFWT was observed. Batalik et al. reported significant improvement in cardiorespiratory

fitness (1). However, HRmax and rating of perceived exertion, were not shown to have significant results. A study reported significant improvements within groups for VO_2 peak, and HRR at one and three minutes, except for systolic blood pressure. Batalik et al. performed a one-year follow-up study, and concluded that medium effect size ($d = 0.52$) for telerehabilitation, and low effect size ($d = 0.21$) for centre-based rehabilitation (1).

Conclusions and implications for practices

Home-based cardiac telerehabilitation (HBCT) is an effective approach to improving cardiorespiratory fitness, compared to centre-based cardiac rehabilitation (CBCR). Cardiac telerehabilitation was an effective and feasible alternative to traditional cardiac rehabilitation during COVID-19, and this novel approach should be incorporated into future clinical practice.

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