post-hospitalisation for an AECOPD, is acceptable and feasible.

Methods A mixed method feasibility study was conducted including a parallel, two-group randomised controlled trial (RCT) (control group: usual HaH care; intervention group: usual care plus home-based exercise training) with convergent qualitative components (interviews: patients, family carers, researchers; focus groups: healthcare professionals [HCPs]).

Results 16/132 patients screened were recruited to the RCT with 8 allocated to each group and one withdrawn prior to receiving HaH care (56% were male, mean [SD] age: 74 [9] years, median [IQR] FEV_1: 29 [21, 40] percent predicted, 87% with an eMRC dyspnoea score of 4, 5a or 5b). Four vs eight and four vs seven attended four week and three-month follow-up assessments in the control and intervention groups respectively. There was no evidence of contamination in the control group. 25% of patients allocated to the intervention group were unable to receive the intervention due to Covid-19. The questionnaire-based outcomes were more complete and appeared more acceptable to patients than physical measures, with very poor uptake for physical activity monitoring via accelerometery. Qualitative findings (interviews: five patients, two family carers, four researchers; focus groups: PR and HaH service HCPs) demonstrated that trial and intervention processes were acceptable, clinically beneficial and safe, but did not explain the disparity between questionnaire-based vs physical outcome measure completion rates.

Conclusion The findings suggest an efficacy trial which investigates home-based exercise training integrated within a HaH service following hospitalisation for an AECOPD would be safe and acceptable to patients, family carers, HCPs and researchers alike, and is qualitatively felt to be of clinical benefit. However, additional piloting is required to optimise intervention fidelity and study processes given the low recruitment rates, high drop out of the control group and poor uptake of some physical assessments.

S24 IS A NOVEL DIGITAL BREATHING & ENERGY MANAGEMENT PROGRAMME EFFECTIVE IN REDUCING SYMPTOMS OF LONG COVID?

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Introduction The most common symptoms of 'Long COVID' which is defined as symptoms >12 weeks post COVID infection, are breathlessness and fatigue. Breathing retraining and holistic management for patients suffering with ongoing symptoms of COVID has been recommended to help manage these symptoms.[1] Ensuring quality rest and activity energy management is essential for the management of chronic fatigue.[1,2] The aim of this study is to investigate the effectiveness of a novel digital 6-week breathing & energy group management programme for patients with Long COVID.

Method We conducted a pilot, cohort, observational study using qualitative questionnaires pre and post intervention between Jan -May 2021. The intervention was led by breathing, fatigue specialist physiotherapists and psychological well-being practitioners. Baseline information was gathered with an individual digital assessment. Participants were enrolled to weekly digital group sessions focusing on breathing retraining and establishing a good energy management balance. A follow up re-assessment was completed post intervention.

Results 72 participants aged between 24–81, 45 female,27 male, 57 White British, 7 Black British, 2 Black Asian, 6 Other Ethnicity were enrolled. Baseline data showed 87% (n=63) had a breathing pattern disorder (Breathing Pattern Assessment Tool Score> 4.) 69% (n=50) had signs of hyperventilation syndrome (Nijmegen score > 23). 77% were suffering with severe fatigue (Fatigue Severity Scale (FSS) > 5). Outcome measures used were the Self-Reported Chronic Respiratory Disease Questionnaire (SR -CRDQ), General Anxiety Disorder 7 (GAD7), Patient Health Questionnaire PHQ9 and FSS. 86% (n=62) patients had a clinically significant improvement in at least 1 of the SR-CRDQ domains (breathlessness, emotion, fatigue and mastery).53% (n=38) had a clinically significant reduction in FSS. 51% (n=37) patients had a clinically significant improvement in anxiety or depression.

Conclusion Analysis shows that a digital, novel 6 week breathing and energy management programme was beneficial for patients suffering Long COVID. Continued investigation and further research is required to evaluate the effectiveness of breathing retraining and energy management for patients suffering with Long COVID.

REFERENCES

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S25 CARDIOPULMONARY EXERCISE TESTING TO EVALUATE EXERCISE LIMITATION AND SHORTNESS OF BREATH IN LONG COVID

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Introduction Approximately 10% of COVID survivors experience long-term sequelae, with fatigue and exercise limitation most frequently reported. The physiological drivers of these symptoms remain unclear. Incremental cardiopulmonary exercise testing (CPET) is a routine clinical assessment used to evaluate exercise limitation but its utility in long COVID is unknown.

Methods Consecutive patients with non-hospitalised SARS-CoV2 infection referred for standard-of-care CPET to investigate persistent exercise limitation were identified. Patient demographic and clinical information were extracted, and standard CPET parameters were collected and analysed. Ethical approval was obtained under the UHS REACT COVID observational database (REC-20/HRA/2986).

Results Nine patients were included in this pilot analysis. 55% male, median (mdn) 47 years, 6 to 12 months post SARS-CoV-2 infection. Reported pre-morbid exercise and fitness levels were above average. Patients demonstrated impaired exercise capacity, peak oxygen uptake [VO_2peak] (mdn 23.3ml/kg/min, 81% predicted) and oxygen uptake at anaerobic threshold [AT] (mdn 13.4 ml/kg./min). AT as percentage of VO_2peak was reduced (mdn 45%) suggesting significant deconditioning. Oxygen-pulse (O_2 pulse) percentage predicted was reduced (mdn 80%) suggesting impaired oxygen delivery and/or muscle oxygen utilisation (table 1). None of the patients demonstrated respiratory limitation to exercise. All patients had normal