ICU and Beyond – Establishing a Virtual Post ICU Rehabilitation Class
Supporting life after ICU for patients and family

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Motivation

With a higher proportion of patients now surviving critical illness, there is an increasing focus on survivorship, rather than merely surviving[1].

A quality improvement project developing an ICU Therapy Supported Discharge pathway established that access to community rehabilitation services was a limitation to optimising recovery after ICU[2]. The COVID-19 pandemic further challenged access to vital rehabilitation services for patients.

An MDT outpatient rehabilitation class was identified as an option for improving patient experience and outcomes after an ICU stay.

The proposed benefits included:
- *Continuity of care*
- *Peer support*
- *Timely Access to rehabilitation*

Objectives

1) To test the effectiveness of an ICU rehabilitation class on patient outcomes

2) To establish the patient acceptability and experience of an ICU rehabilitation class

Virtual ICU Rehab Class Design

- *Pre/Post assessment on Attend Anywhere or Telephone.*
- *Virtual class on Zoom – X2 week for 6 weeks.*
- *1 hour class:*
    - *½ hour exercise*
    - *½ hour education*
- *Followed Pulmonary Rehabilitation approach as suggested by 'After-care needs of inpatients recovering from COVID-19' NHS 2020.*
- *Incorporated MDT education to support Post ICU recovery.*

Outcomes

Standardised outcome assessment pre and post class using:
- *The Fatigue Assessment Scale (FAS).*
- *The Generalised Anxiety Disorder -7 Assessment (GAD-7)*
- *The Patient Health Questionnaire – 9 (PHQ-9).*
- *The EQ5D5L Measure of Quality of life.*
- *The 30 Second Sit to Stand (STS) test - a simple physical function score to remotely assess strength and endurance*
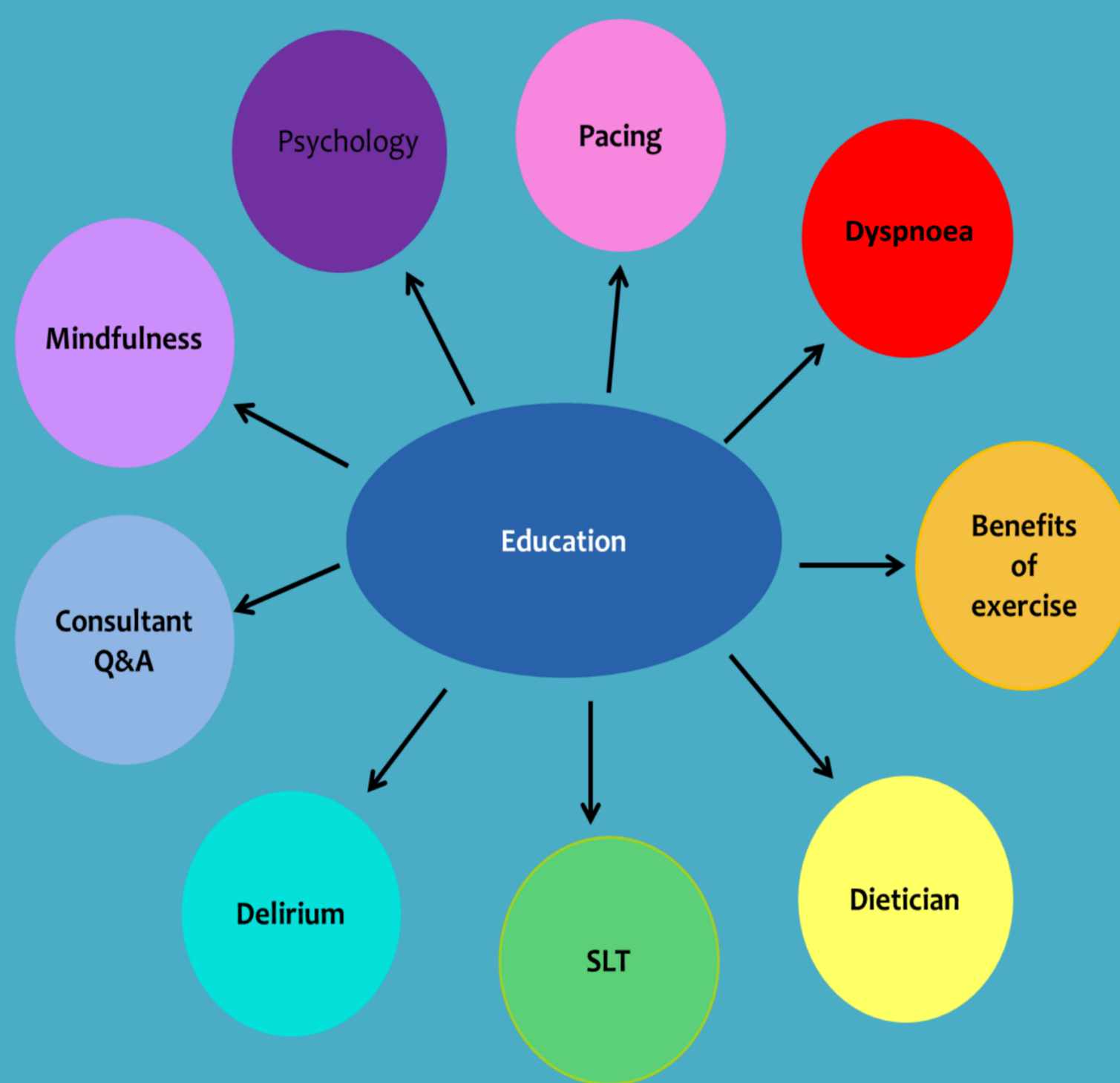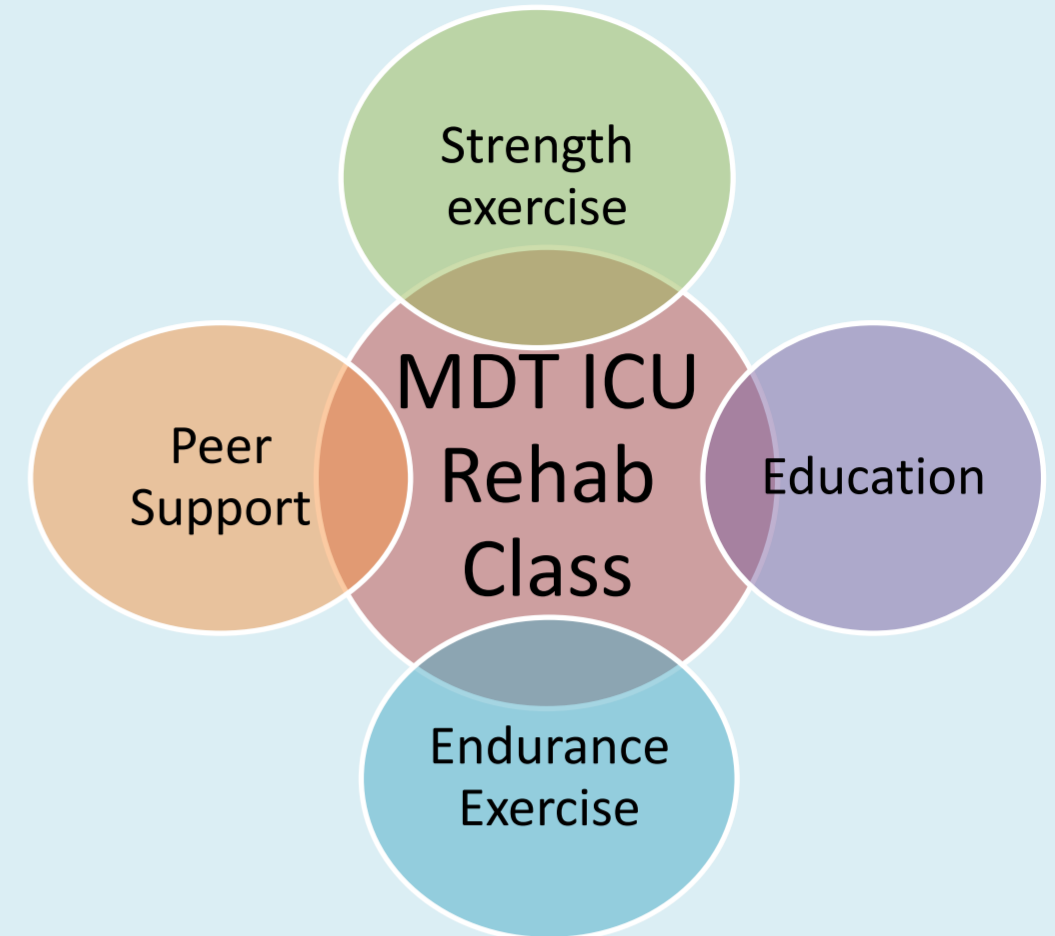- *The Medical Research Council (MRC) dyspnoea scale to assess on-going breathlessness.*

Methods

A test of change methodology was used to pilot a virtual ICU rehabilitation class in 2020 during the Covid 19 pandemic. COVID 19 forced a rethink of how post ICU support was delivered to ensure rehabilitation needs of those leaving ICU continued to be met in a way that complimented existing community services.

Patients who had a prolonged stay (>1week) with extensive rehabilitation needs were identified for pilot class via:
- *Follow up clinic*
- *Current COVID-19 caseload*
- *Patients who received ICU supported discharge in 2020*

9 participants identified and 6 consented to participate and met the inclusion criteria.

MDT ICU Rehab Class: Strength exercise, Education, Endurance Exercise, Peer Support

Education: Psychology, Pacing, Dyspnoea, Benefits of exercise, Dietician, SLT, Delirium, Consultant Q&A, Mindfulness

Results

All participants demonstrated improvements across the outcome measures.

Outcome measure	Pre Class - mean (range)	Post Class - mean (range)	Change
Fatigue Assessment Scale (FAS)	22.3 (16-36)	18.8 (14-26)	-3.5
Generalised Anxiety Disorder 7 Assessment (GAD-7)	4.7 (1-9)	3.2 (0-12)	-0.83
Patient Health Qusetionnaire – 9 (PHQ-9)	6.5 (0-19)	4.3 (0-17)	-2.17
EQ5D-5L index value	0.334 (0.016-0.767)	0.645 (0.314-0.877)	0.312
EQ5D VAS	49 (25-70)	61 (25-75)	12
30 sec Sit To Stand Test	10 (3-19)	15.4 (9-24)	5.4
Medical Research Council Dyspnoea Scale	3.5 (3-5)	2.2 (2-3)	-1.33

Four patients participated in the focus group following the 6 week pilot class. This confirmed the class was well received with resounding positive feedback (see quote bubbles). Themes arising including reflections on the opportunities provided by accessing the class virtually, appreciation of the opportunity to share and make sense of experiences with others in a similar position and an overall feeling of benefit.

"Without the class online I would not have been able to attend"

"It feels more 1:1, it's a lot more personal!"

"Follow up has been absolutely fantastic"
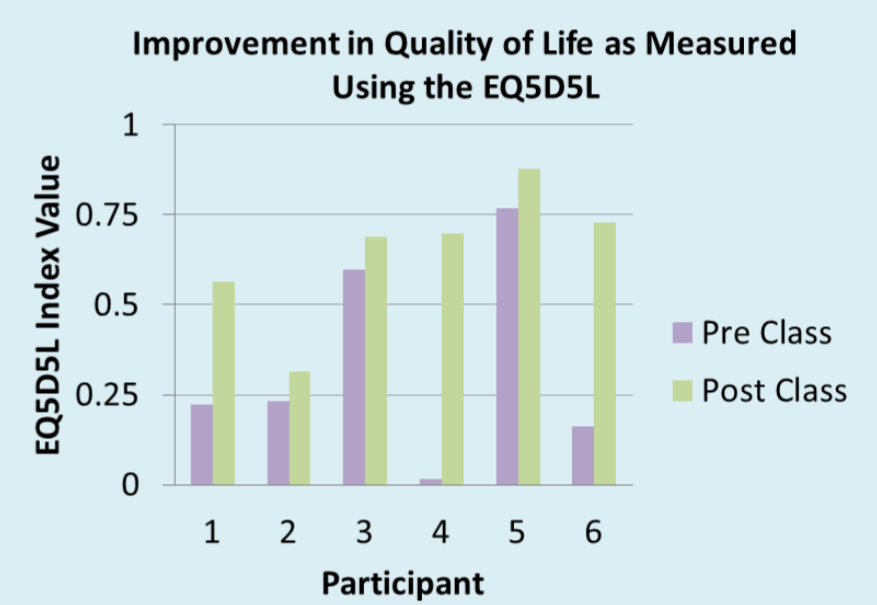
All patients said they *"felt better after the classes"*

"Nice to share experiences with others in similar positions"

Benefits

All participants demonstrated benefits in their EQ5D5L quality of life index which is a summary score of the 5 health dimensions assessed.

Improvement in Quality of Life as Measured Using the EQ5D5L — EQ5D5L Index Value vs Participant (Pre Class / Post Class)

The 30 Sit To Stand chart shows an average improvement of 5.4 stands in 30 seconds. An increase in 5 sit to stands at post assessment is clinically significant in demonstrating improvement.

30 Second Sit to Stand Test — Average Number of Sit to Stands Achieved (Pre / Post)

Did the classes help you feel supported after discharge from ICU? (Yes / No)

Conclusions

Overall this pilot study showed improvement in both physical and mental wellbeing amongst our participants. Whilst a small scale study this has been enormously beneficial in shaping and building a case for future classes.

We now know more about patients' needs at discharge from ICU; improving their understanding of their journey, highlighting post ICU complications such as nutrition and speech, providing a safe space for participants to have peer support and more interaction with health professionals.
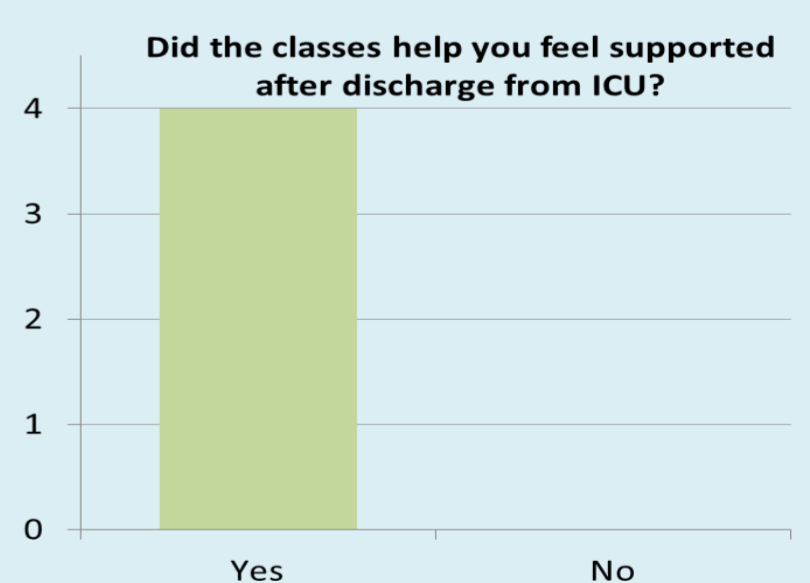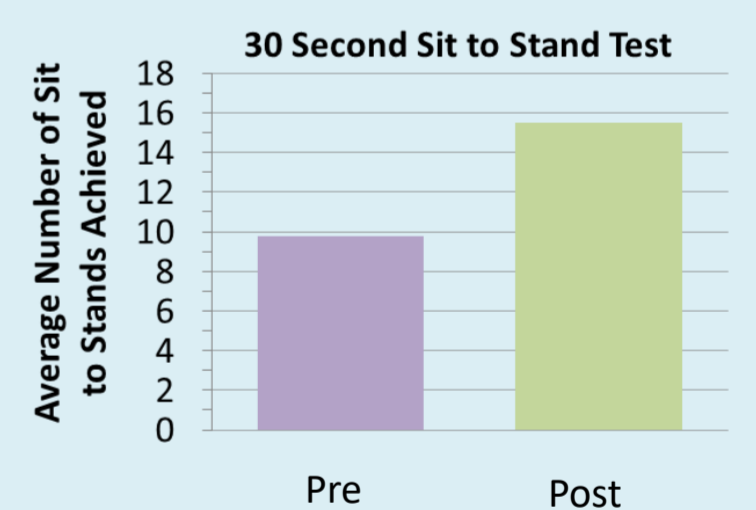
References:
1. Iwashyna T.J. (2010) Survivorship will be the defining challenge of critical care in the 21st Century. AnnInternMed 153 (3), 204-205 (2014).
2. NICE (2019) Rehabilitation after critical illness in adults; Clinical Guideline (CG83)