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Clinician and patient perspectives on the barriers and facilitators to physical rehabilitation in intensive care: a qualitative interview study

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3 **Clinician and patient perspectives on the barriers and facilitators to physical**
4 **rehabilitation in intensive care: a qualitative interview study.**
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Abstract

Objectives

To explore patient, relative/carer and clinician perceptions of barriers to early physical rehabilitation in intensive care units (ICU) within an associated group of hospitals in the United Kingdom (UK) and how they can be overcome.

Design

Qualitative study using semi-structured interviews and thematic framework analysis.

Setting

Four ICUs over three hospital sites in London, UK.

Participants

Former ICU patients or their relatives/carers with personal experience of ICU rehabilitation. ICU clinicians, including doctors, nurses, physiotherapists and occupational therapists, involved in the delivery of physical rehabilitation or decisions over its initiation.

Interventions

Nil

Primary and secondary outcomes measures

Views and experiences on the barriers and facilitators to ICU physical rehabilitation.

Results

Interviews were carried out with 11 former patients, 3 family members and 16 clinicians. The themes generated related to: safety and physiological concerns; patient participation and engagement; clinician experience and knowledge; teamwork; equipment and environment; and risks and benefits of rehabilitation in intensive care. The overarching theme related to how barriers can be overcome by moving away from a multidisciplinary approach and towards an interdisciplinary, patient-centred approach to ICU physical rehabilitation. This involves a change in working model from ICU clinicians having separate

responsibilities to one where all parties have a shared aim of providing physical rehabilitation.

Conclusions

The results have revealed barriers that can be modified to improve rehabilitation delivery in an ICU. Interdisciplinary working could overcome many of these barriers to optimise recovery from critical illness.

Strengths and limitations of this study

- This study explored the perspectives of multiple stakeholders including intensive care clinicians from different professions, with a range of experience. Importantly, the views of former ICU patients and their family members were sought to obtain a full range of perspectives on the barriers to ICU rehabilitation.
- Thematic framework analysis was used which enables a systematic approach to organising data, facilitating in-depth exploration of the range of views within themes and between participant groups.
- Patient and family recall of their experiences may have been impacted by the time from intensive care admission to interview, however interviews took place at the first follow up opportunity to minimise this effect.
- Efforts were made to gain a range of perspectives using purposive sampling; however, fewer family members or carers took part in this study than former ICU patients.

Introduction

The importance of physical rehabilitation of critically ill patients has been recognised because of the prevalence of acute muscle weakness and wasting¹⁻³, and longer-term substantial physical disability measured in this patient group^{2,4,5}. Physical rehabilitation consists of physical activity interventions (typically mobilising in or away from the bed) that are begun once a patient has reached physiological stability⁶⁻⁸. Beginning physical

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3 rehabilitation at an appropriate dose whilst patients are still in an intensive care unit (ICU)
4 can improve physical function whilst in hospital and expedite discharge ⁹, although
5 implementing rehabilitation at a higher dose is not necessarily beneficial ¹⁰. However, when
6 measured, there is concern that the actual amount of formal physical rehabilitation
7 delivered and patient participation in exercise whilst in intensive care are low ¹¹⁻¹³.

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13 Studies have previously measured the barriers to implementing rehabilitation, the majority
14 of which use a quantitative approach ¹⁴. However, a qualitative approach is better-suited to
15 exploring interpersonal relations ¹⁵ and therefore potential barriers relating to team working
16 and patient interactions. Where a qualitative approach has been used, issues of
17 communication and differences in opinion between clinicians ¹⁶⁻²¹ and difficulty in providing
18 rehabilitation in an environment where demands on staff and patient time change quickly
19 have been highlighted ^{19 22 23}. However, the lack of rehabilitation in intensive care continues
20 despite this current understanding of the barriers. Importantly, there is a lack of in-depth
21 knowledge of barriers in a United Kingdom (UK) setting, which includes views of multiple
22 stakeholders such as ICU clinicians from different professions involved in implementing
23 rehabilitation, as well as patients and family members ^{18 24-26}.

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34 The objective of this study therefore, was to explore service user (patients or their
35 relatives/carers) and clinician perceptions of barriers to early physical rehabilitation in ICUs
36 within an associated group of hospitals in the UK and how they can be overcome.

37 38 39 40 41 42 43 **Methods**

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46 A qualitative study using semi-structured interviews was conducted based on the approach
47 recommended by the National Centre for Social Research. This is based upon critical realism
48 and interpretivism using the framework approach to analysis ²⁷. Ethical approval was gained
49 from the London – Bloomsbury Research Ethics Committee (17/LO/0362) and written,
50 informed consent was gained from all participants. This study is reported in line with the
51 consolidated criteria for reporting qualitative research ²⁸ (supplemental file 1).

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58 The study was based at a UK National Health Service (NHS) hospital trust in London, which
59 has four ICUs for adult patients across three hospital sites, each of which has different
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3 referring specialities. Purposive sampling^{29 30} was used to recruit a range of service users
4 (former ICU patients and their family members/carers) and the hospital's ICU clinicians from
5 the different ICU settings, from different professional groups with a range of experience
6 levels. Clinicians were included if they were doctors (senior trainees [registrars/fellows] or
7 consultants), nurses, occupational therapists or physiotherapists with at least two months of
8 ICU experience and who had experience of rehabilitation treatments or deciding when they
9 should be initiated. Clinicians were approached via adverts in meetings, posted in staff areas
10 or via general group or more targeted emails. Former ICU patients and family members
11 were included if they had personal experience of physical rehabilitation whilst in ICU.
12 Participants were excluded if they could not attend an in-person interview, if they felt
13 unable to participate in English, if they were less than 18 years of age or unable to give
14 informed consent. Patients or their relatives/carers were approached via local ICU patient
15 support groups and follow up clinics. Estimates were that 30 participants would be required
16 to gain a sufficient range of perspectives, with sampling ending once apparent data
17 saturation had been reached. Data saturation was defined a priori as when no new themes
18 of barriers and facilitators were evident from interviews, as decided by the study steering
19 group. During data collection, when the interviewer felt no new themes were being
20 discussed, the latest version of the initial thematic framework was shown to the final
21 clinician and patient participant as a sense check to see whether they could identify any
22 additional themes that had been missed. Following this, the initial thematic framework was
23 reviewed by clinical colleagues from all four professional groups included in the study, as
24 well as steering group members who were former ICU patients, to discuss if any obvious
25 themes were missing.

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46 Interviews took place at the hospital site and only included the interviewer and the
47 individual participant. Each participant took part in one semi-structured interview. Before
48 the interview began, participants were asked for demographic data then the interview
49 proceeded using a topic guide (supplemental file 2), designed by the research steering group
50 which included the input of former ICU patients. The interview was piloted with both
51 clinicians and former patients. The format of the interview was a conversation, where
52 wording was not fixed and prompts were used to gain greater depth of understanding of
53 participant views and experiences. Participants were asked to define physical rehabilitation
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3 themselves, however, the study was designed based on rehabilitation consisting of
4 mobilisation treatments ranging from exercises and movement in the bed, to mobilising out
5 of bed and walking⁸. Participants were informed of this if they had difficulty defining
6 rehabilitation or if their definition was markedly different from how the study
7 conceptualised rehabilitation. Each interview was recorded and then transcribed verbatim.
8 Transcripts were not returned to participants for review in line with current thinking about
9 usefulness of this approach³¹.

10
11 All interviews were carried out by one interviewer (HRW) who is a male physiotherapist,
12 working full-time on the research study as part of work towards a doctorate, with training in
13 qualitative research methods. The interviewer had previous clinical experience at several of
14 the ICUs that were settings for this study, including working alongside some of the clinician
15 participants, but not the patients or their relatives/carers. The researcher therefore had
16 previous experiences of barriers and facilitators of rehabilitation in the study setting. These
17 influences were taken into account using a reflexive diary before and after data collection,
18 which was then considered during the analysis process.

19
20 Thematic framework analysis^{32 33} was used to produce themes based on the interview
21 transcript data. This involves drawing up an initial list of themes that summarised all the
22 interview data (supplemental file 2). Data were then arranged in a framework table which
23 structured what each participant had said about each initial theme in an easily accessible
24 form. This facilitated the production of a final set of themes and subthemes and comparison
25 of how these vary between groups of participants. Analysis was facilitated by the use of
26 NVivo 11 software (QSR International) and carried out by the first author (HRW). A second
27 researcher (MJ) reviewed 10% of interview transcripts and confirmed that they matched the
28 initial set of themes. At several stages during the analysis process, the research steering
29 group met to review the data, discuss uncertainties over formation of themes and as a
30 check on the process. Descriptive statistics were used to summarise demographic data using
31 IBM SPSS Statistics. Continuous data were tested for normality using the Shapiro-Wilk test
32 and non-normally distributed data described using median and interquartile range, and
33 normally distributed data described using mean and standard deviation.

Patient and public involvement

Former ICU patients were members of the research steering group. These patient representatives edited the wording of recruitment materials and inputted into the design of the topic guide. They also assisted the interviewer (HRW) to practice interview technique and were involved in reviewing the initial thematic framework, as part of data saturation checks.

Results

Recruited participants included 16 clinicians, from a range of professions, with a range of experience in different settings (Table 1). Eleven former ICU patients and three family members/caregivers participated, all with experience of ICU rehabilitation (Table 2). Initially, 53 potential participants expressed interest in taking part, of whom 30 were recruited before data saturation was achieved. Five declined or were not available for interview, three did not respond further after initial contact, data saturation was achieved before four were recruited and 11 were not recruited as others were chosen instead to gain a greater range of views, as per the purposive sampling strategy. Interviews lasted for a mean 43 minutes (standard deviation \pm 11 minutes).

Table 1: Clinician participant demographics

| | Clinicians (N=16) |
|--|------------------------------|
| Age, mean (\pm SD) | 34 (8.6) |
| Gender: female, n (%) | 12 (75) |
| Profession, n (%) | |
| Doctor | 4 (25) |
| Nurse | 5 (31) |
| Therapist (physiotherapist or occupational therapist) | 7 (44) |
| Seniority, n (%) | |
| Team leader | 9 (56) |
| Senior clinician | 6 (38) |
| Junior clinician | 1 (6) |
| Number of years of ICU experience, median (IQR) | 6 (1-15) |
| Number of years of clinical healthcare experience, mean (\pm SD) | 11 (8) |
| Place of work*, n (%) | |
| Intensive care 1 | 5 (31) |
| Intensive care 2 | 6 (38) |
| Intensive care 3 | 5 (31) |
| Intensive care 4 | 5 (31) |
| Involvement in physical rehabilitation, n (%) | |
| Participating in the decision over whether a patient is stable enough to mobilise. | 16 (100) |
| Leading rehabilitation treatment | 10 (63) |
| Assisting with rehabilitation treatment | 12 (75) |
| SD= standard deviation; IQR=interquartile range. *Some clinicians work on more than one intensive care unit. | |

Table 2: Patient and caregiver participant demographics

| | Former ICU patients and caregivers (N=14) |
|---|---|
| Service user participants: | |
| Patients, n (%) | 11 (79) |
| Caregivers, n (%) | 3 (21) |
| Age, mean (\pm SD) | 65 (10.7) |
| Male, n (%) | 10 (71) |
| Patient ICU length of stay in days* (n=11), mean (\pm SD) | 15 (10.8) |
| Patient stated reason for admission (n=11), n (%) | |
| Aortic dissection | 1 (9) |
| Cardiac arrest | 1 (9) |
| Gastrointestinal | 1 (9) |
| Organ failure | 1 (9) |
| Septic shock | 1 (9) |
| Surgery | 5 (45) |
| Trauma | 1 (9) |
| Site where ICU was experienced, n (%) | |
| Intensive care 1 | 2 (14) |
| Intensive care 2 | 11 (79) |
| Intensive care 3 | 0 (0) |
| Intensive care 4 | 1 (7) |
| Highest level of physical rehabilitation experienced, n (%) | |
| Moving in bed | 2 (14) |
| Sitting in a chair | 6 (43) |
| Walking | 6 (43) |
| SD= standard deviation. *Two participants reported their length of stay as approximate. | |

The study themes and subthemes are described in detail below. The supplementary material illustrates these themes and subthemes with verbatim quotes from participants, with participant numbers (see supplemental file 2 to link quote numbers with data).

1. Safety and physiological concerns

Participant concerns over the safety of rehabilitation were reported as a barrier to rehabilitation. This included the risk of dislodging lines and attachments (such as ventilator tubing and femoral lines (quote 1). However, some participants did not perceive this as a barrier, if careful planning and also organisation of the bed space environment was carried out. For example, avoiding the use of femoral vascular catheters as access for haemofiltration or planning breaks in haemofiltration could enable rehabilitation. Endotracheal tubes or airways that had been difficult to insert, were also cited as barriers,

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3 with the difficulty of titrating sedation for a balance between tube tolerance and patient
4 alertness cited as one explanation.
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8 Clinician participants identified particular patient groups with barriers to rehabilitation
9 because they felt they were at an increased risk or they presented additional logistical
10 challenges, such as those with multiple traumatic injuries (quote 2). They suggested that
11 patients admitted after surgery could have certain surgical precautions which presented
12 logistical issues contacting different teams to gain clarity over safety of rehabilitation.
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14 Despite this, patients in ICU after elective surgery could have received pre-operative
15 education or pre-planned rehabilitation programmes, both facilitating rehabilitation post-
16 operatively.
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23 Physiological instability, such as instances of respiratory distress or cardiovascular instability
24 were reported as preventing rehabilitation treatments.
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28 *“...it’s mainly blood pressure related for me, or their resp[iratory] rate. If I don’t think*
29 *they’re going to tolerate mobilising, and if it’s going to cause more harm than good.”*
30 *(Therapist 2, quote 3)*
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34 Dependence on organ support, such as the amount of respiratory support or vasoactive
35 drugs were also identified as barriers. Clinician opinion ranged from perceiving patients
36 receiving vasoactive drugs as a contraindication to rehabilitation (quote 4), to others who
37 considered rehabilitation possible if a low or weaning dose was used or if the patient was
38 less severely unwell, for example if vasoactive drugs were being used for epidural-induced
39 hypotension. Risk relating to hypotension during rehabilitation was suggested to relate to
40 anxiety from junior staff about managing vasoactive drugs during mobilisation (quote 5).
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42 Participants suggested potential organ support barriers should always be discussed with the
43 ICU doctors and also advocated actively sedating patients less.
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51 Patient participants sometimes reported feeling too unwell to actively participate in
52 rehabilitation. Some patients reported profound feelings of weakness, making their bodies
53 feel ‘like a lead weight’, which came as a surprise when they first tried to get up and was
54 linked with feelings of vulnerability (quotes 6 and 7). These participants did then identify a
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3 time in their recovery where these symptoms subsided to the point where they could then
4 participate.
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7 Additionally, level of alertness, confusion and agitation, cognitive impairments and
8 personality disorders were all cited as barriers by clinicians (quote 8). Some patients and
9 relatives recalled experiences of delirium and hallucinations as profound influences on their
10 recovery in general.
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14 The difference between clinicians' perception of safety and a patient's readiness to begin
15 rehabilitation was expressed as a barrier (quote 9). Some explanations included clinician
16 fear of the unwell patient and the risk of perceived harm which caused anxiety for some
17 (quote 10).
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24 *"...happy to cause no harm, or kind of, and no perceived harm by not mobilising*
25 *someone but actively getting up and causing harm is a, always going to be a*
26 *significant anxiety for staff..." (Nurse 5, quote 11)*
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30 This was linked to clinician need for control over the physiological numbers, potentially
31 leading to a reluctance to reduce that control by moving a patient out of bed (quote 12).
32 One doctor suggested that a paradigm shift was required to address this barrier (quote 13).
33 Another doctor said they modified targets for acceptable changes in physiological
34 observations (such as blood pressure), to reassure other clinicians that mobility was still safe
35 (quote 14).
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45 2. Patient participation and engagement

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47 Clinician participants reported that patients may be reluctant to participate in rehabilitation.
48 Patient participant responses ranged from reporting enthusiastic engagement in
49 rehabilitation, to not wishing to mobilise out of bed. Reasons cited for their reluctance
50 included not wanting to do something perceived as potentially worsening their condition
51 (quote 15). Furthermore, a lack of incentive or motivation to engage was discussed, as well
52 as a feeling of weakness, which some found difficult to accept.
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3 *"...there were times when I simply didn't want to do it... Depression, ... lack of energy,*
4 *lack of spirits really ..."* (Patient 7, quote 16)
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8 Suboptimal communication between patients and clinicians was felt to be a barrier to
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10 rehabilitation. Suggested reasons included the little time spent by clinicians discussing
11
12 rehabilitation, difficulty communicating rehabilitation goals and some sometimes showed a
13
14 lack of empathy. Suggested ways of overcoming these issues included maximising a
15
16 patient's ability to communicate, giving more reassurance, building up trust, showing
17
18 kindness and helping patients to feel safe (quote 17). Patients valued humour from staff and
19
20 felt rapport was aided by staff continuity. Patients and relatives recommended that when a
21
22 patient was reluctant to mobilise, an encouraging and diplomatic approach balanced with
23
24 assertiveness from clinicians to "push" patients (quote 18).

25
26 Participants recommended that strategies to improve patient engagement in rehabilitation
27
28 should always be patient-specific. Other suggestions included promoting sleep at night,
29
30 involving patients in planning a rehabilitation timetable, goal setting and using outcome
31
32 measures to demonstrate progress (quote 19). Furthermore, education for patients and
33
34 relatives at the appropriate time, around the importance of rehabilitation was suggested.

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36 Further facilitators included the use of meaningful activities and identifying key patient
37
38 motivators. The importance of tailoring rehabilitation to include activities meaningful to
39
40 patients (such as functional tasks and personal care activities based on previous interests)
41
42 were identified to facilitate engagement within a context more readily understood by
43
44 patients.

45 *"Looking at therapy in a slightly different way and finding an activity that's*
46 *meaningful to [patients], whether that's personal care or leisure activities, and*
47 *through that encouraging them to... engage in that activity and then helping them to*
48 *see the therapeutic value of that."* (Therapist 4, quote 20)
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53 Recognising key patient motivators such as gaining independence and dignity by being able
54
55 to do more for themselves was also suggested (quote 21). Patients reported being
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57 motivated through their improvement during rehabilitation sessions, almost as a proxy for
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3 improvement from critical illness. Patient qualities of resilience, determination and a
4 positive mental attitude were reported as a facilitator.
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8 The role of family was discussed as both a barrier and facilitator. Some instances were
9 reported where relatives could be reluctant for patient participation in rehabilitation. When
10 this was discussed with patient and relative participants, responses ranged from an
11 understanding of why this happens, to a strong disbelief that this could be the case. The role
12 of family in encouraging patients was discussed, with some highlighting how they were
13 motivated to improve mobility to help their family member feel better (quote 22).
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20 3. *Clinician experience and knowledge*

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22 Clinician participants discussed the experience and knowledge of those carrying out
23 rehabilitation. A lack of experience, confidence and senior support were cited as barriers
24 (quote 23). However, some therapists also proposed those clinicians with more experience
25 could pose a barrier. They suggested some more experienced nurses may perceive
26 rehabilitation as outside of their role or may have spent more time in an environment
27 where rehabilitation was not a priority. Opinions over experience as a facilitator also varied.
28 Some emphasised that a team with the right skill mix (including adequate senior support)
29 was important, with a nurse suggesting having more confident staff freed up time for
30 rehabilitation. However, some therapists reported that more inexperienced nurses could be
31 a facilitator as they have received recent training in rehabilitation. One therapist cited
32 enthusiasm as being more important than experience to facilitate rehabilitation.
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44 A lack of training and knowledge, including about the importance of rehabilitation,
45 organisation and planning of sessions and therapeutic manual handling were suggested as
46 important factors.
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50 *“It doesn’t happen because... we are not aware enough yet how important it is, or*
51 *how much difference it could make, so it’s not embedded in our thinking and in our*
52 *behaviour...” (Doctor 4, quote 24)*
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56 A popular strategy to address these barriers was through education and training for the ICU
57 interdisciplinary team, such as through study days and experiential learning (quote 25).
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3 Additionally, the use of a rehabilitation policy and guidelines to drive implementation and
4 aid less experienced clinicians know when to begin rehabilitation was discussed.
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9 4. Teamwork

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11 Discussion of teamwork covered team culture, clinician roles, rehabilitation definitions and
12 logistics. A lack of a rehabilitation culture leading to some staff having a less proactive
13 attitude to rehabilitation delivery was discussed.
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18 *“But a lot of it’s just to do with the attitude of the individual staff member, how*
19 *proactive they are and how much they believe in mobilisation as a kind of key thing”*
20 *(Nurse 5, quote 26)*
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25 One explanatory factor was a lack of medical leadership. Participants suggested promoting a
26 culture where an interdisciplinary team works together to promote rehabilitation as routine
27 and important, would facilitate implementation. A less hierarchical culture would encourage
28 proactive team planning and problem solving, with medical leadership again emphasised as
29 key (quote 27).
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35 Another key barrier to rehabilitation was differences in opinion between professions over
36 roles and responsibilities (quote 28). Some reported that rehabilitation was perceived as
37 only a therapist’s job (quote 29). Therapists reported that there could be a lack of
38 understanding of their role or their other responsibilities, for example, covering other
39 clinical areas in addition to the ICU. To overcome this, clinicians suggested promoting
40 teamwork where separate responsibilities were acknowledged and there was a willingness
41 to crossover professional roles, with therapists empowering nurses to facilitate
42 rehabilitation (quote 30).
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50 Differences in opinions over roles and responsibilities were impacted upon by variation in
51 how rehabilitation was defined and delivered. This in itself may explain some of the
52 difficulty in promoting a proactive rehabilitation culture. Participants noted that doctors and
53 nurses sometimes limited their definition of rehabilitation to a patient sitting out in a chair
54 (quote 31). Conversely, occupational therapist (OT) participants widened the concept of
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3 rehabilitation to encompass a twenty-four hour interdisciplinary approach utilising
4 functional tasks.
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8 *“...rehabilitation is not, you know, 20 minutes with the physio or the OT every day.*
9 *Really good rehabilitation is a 24 hour approach, and that – part of that is positioning*
10 *a patient in bed. Part of that is ensuring the patient gets the right nutrition as well as*
11 *looking at the actual physical things that they’re doing.” (Therapist 4, quote 32)*
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16 This may increase patient engagement and interdisciplinary involvement, by helping staff to
17 incorporate more rehabilitation activities during the course of their normal duties, for
18 example during personal care activities (quote 33).
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23 Finally, lack of staff and logistical difficulties in implementing rehabilitation were suggested
24 as barriers. Greater investment in staffing and utilisation of healthcare support workers was
25 suggested to address this. Logistical concerns covered the number of staff required and the
26 duration of a rehabilitation session in competition with other unit procedures. Logistical
27 barriers also concerned a difficulty in timing around nurses’ rest breaks and staffing ratios
28 (quote 34). Within the study ICUs, once a patient’s illness severity decreased to a certain
29 level, the nursing staffing ratio fell from one nurse to one patient to one nurse to two
30 patients, coinciding with a potential increase in readiness for rehabilitation. Potential
31 strategies to address these concerns include proactive planning of sessions, for example
32 during morning team briefings. Additionally, a change to working patterns to build in more
33 time for rehabilitation to occur was suggested.
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46 *5. Equipment and environment*

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48 A lack of working specialist rehabilitation equipment was highlighted as a barrier (quote 35).
49 Clinicians advocated greater investment and suggested the whole team to take ownership
50 of ensuring equipment was fixed or to find funding sources for equipment replacement.
51 Environmental concerns firstly covered practical limitations such as space to move
52 rehabilitation equipment around the bedspace. Furthermore, a patient highlighted the
53 nature of the ICU environment itself did not encourage them to move out of bed (quote 36).
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“...you can see some bright lights and monitors, you can hear monitors going off, but you don’t have the, “Crash, bang, wallops!” that you get in a general ward... but it’s a capsule and a bubble, it’s a weird feeling... “People think it’s like being in a spaceship” and I thought, “That’s such a good description” and that’s how it did feel.” (Patient 8, quote 37)

6. Risks and benefits of rehabilitation in intensive care

Opinions over risks and benefits were explored, which closely related to safety, knowledge and attitude towards rehabilitation. Clinician ideas about risks resembled the safety issues from theme one, however, this did not necessarily mean a reluctance to mobilise (quotes 38 and 39). Most patients and relatives reported they had not worried about the risks of mobilising whilst in an ICU (quote 40), although some had experienced things such as dizziness and one reported passing out. Considering benefits, reported physical benefits of rehabilitation focused on the acute impact of improving physical function, including in preparation for recovery on the wards (quote 41). Suggested psychological benefits for the patient included helping mood and wellbeing and restoring a sense of dignity.

“...the important thing is you sense that you’re not just lying there waiting to die. ...so you are... you are... coming back to being a human being that wants to live.” (Patient 7, quote 42)

Finally, several clinicians reported how a benefit of patient rehabilitation was the encouragement and sense of achievement it provided for staff.

The overarching theme for how to overcome barriers to physical ICU rehabilitation related to moving from a multidisciplinary approach where different professions work together but have separate responsibilities; towards a patient-centred, interdisciplinary team approach. This was where all parties have a shared aim of providing physical rehabilitation (quotes 27 and 30). This can facilitate clinicians working together to develop a shared understanding of the definition of rehabilitation, so patients can participate in activities that are more meaningful. Furthermore, an agreement can be developed among the team, about the benefits and risks, the optimum way to deliver rehabilitation and when it is safe to start.

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3 This can then help different professions to collaborate to help to overcome barriers related
4 to team working and to improve the ICU environment.
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10 **Discussion**

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13 This study has provided an in-depth exploration of the views of multi-professional ICU
14 clinicians and was strengthened by including former ICU patients and their relatives, adding
15 to the knowledge of overcoming barriers to ICU physical rehabilitation. Primarily this is
16 suggested to be through a change in approach to team working, from a multidisciplinary to
17 an interdisciplinary and patient-centred approach. This means moving from a
18 multidisciplinary way of working where a team is made up of different professions working
19 on their distinct priorities³⁴⁻³⁶, to an interdisciplinary approach where a team of different
20 professions work together with ICU rehabilitation a priority for all. This therefore
21 emphasises a shift from rehabilitation primarily being the focus of therapy staff, to one
22 where all team members have joint accountability and identify this as a key aspect to their
23 work, contributing in overlapping ways but also in ways relevant to their professional skills
24 and knowledge³⁷⁻³⁸. This change in perspective could facilitate a change in opinion over the
25 definition and delivery of rehabilitation towards an interdisciplinary, 24-hour approach that
26 includes activities meaningful to patients to facilitate engagement. An interdisciplinary
27 working model has previously been used to facilitate more efficient and effective care
28 during critical illness and in general rehabilitation delivery. Reported outcomes have
29 included more coordinated inter-professional working and enhanced delivery of appropriate
30 patient care³⁵⁻³⁹⁻⁴⁰.
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47 It is interesting to see that several of the themes of barriers and facilitators to ICU
48 rehabilitation are similar to previous qualitative studies. This includes themes of safety¹⁹⁻²⁰
49²³⁻²⁴⁻⁴¹, patient engagement²⁵, knowledge and experience¹⁷⁻²² and team work¹⁶⁻¹⁸⁻²¹⁻²³⁻²⁵⁻⁴¹.
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51 Patient reports of experiencing feelings of weakness and vulnerability in this present study
52 have also previously been identified²⁶⁻⁴² where their vulnerability may be explained, at least
53 in part, by patients adjusting to being critically ill whilst having little or no memory of their
54 deterioration into critical illness⁴³. In our study, clinicians expressed differences in opinion
55 over roles and responsibilities towards rehabilitation as well as safety concerns for initiating
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3 treatment. Staff confidence in rehabilitation provision may contribute towards differences
4 in viewpoints and engagement. This may be partially explained through differences in
5 personality traits between those more or less able to make pragmatic concessions to adjust
6 to the limitations of the working environment to ensure reasonable care is delivered ⁴⁴. This
7 would therefore represent an important factor to address with staff when overcoming
8 barriers to rehabilitation.
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15 This study has added to previous knowledge in several ways. Interestingly and perhaps
16 surprisingly, less clinical experience was highlighted as a potential facilitator of
17 rehabilitation. Some therapists reported that more inexperienced nurses have received
18 recent training in rehabilitation and one therapist cited enthusiasm as more important than
19 experience. Additionally, perceptions of the content of rehabilitation were notable. Some
20 viewed rehabilitation as being limited to sitting in a chair. This can contribute to a limited
21 scope of rehabilitation practice ²² and may have contributed to the lack of rehabilitation
22 culture reported by some participants in this study. The occupational therapists emphasised
23 the inclusion of personal care activities as part of ICU rehabilitation delivered at any point in
24 the day by any profession, to facilitate a more positive rehabilitation culture. This is
25 supported by Laerkner, et al. ⁴⁵ who compared the views of nurses and patients in Denmark,
26 and found nurses recommended incorporating familiar activities into rehabilitation and
27 patients emphasised the importance of empathy and compromise from clinicians. Whilst
28 patients in this present study agreed with Laerkner's recommendations of clinician-patient
29 communication, they also emphasised that at times, a more assertive approach from
30 clinicians in encouraging rehabilitation is desirable.
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45 The findings from this study focus us to create a patient-centred interdisciplinary approach
46 to rehabilitation. This involves considering how clinicians communicate with patients and
47 broadening the definition of rehabilitation to include functional tasks that are meaningful to
48 patients. Furthermore, broadening delivery of rehabilitation to a 24-hour holistic approach
49 that includes family members, with a focus on prioritising patient-reported motivators of
50 independence and dignity and to progress back towards normality. Facilitating this change
51 in a multifaceted ICU environment would benefit from using implementation and
52 improvement science methodology, where co-design by ICU clinicians from different
53 professions, as well as service users can be employed. This change in practise should be
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3 evaluated not only in terms of whether it improves rehabilitation delivery without impacting
4 patient safety, but also in terms of how these changes influence other ICU procedures and
5 working practices ⁴⁶.
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9 Limitations of this study include the potential for poor recall from patient or relative/carer
10 participants as the time from ICU admission to interview was not recorded. However, as
11 participants were usually recruited at their first ICU follow up appointment, this was unlikely
12 to be an extended time. Furthermore, language limitations of some participants sometimes
13 made it difficult to discern the exact point they were making during analysis, therefore
14 although this demonstrates diversity within the sample, some finer detail may have been
15 lost. The method of approach may have meant that more patients actively engaged in the
16 issues being evaluated were recruited. Those patients not attending follow up appointments
17 may have had different opinions. Finally, pragmatic constrictions meant few family
18 members were recruited and more patients who had experienced one of the ICU sites were
19 involved.
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22 In conclusion, this exploration of a range of clinician and patient perspective suggested a
23 patient-centred, interdisciplinary approach to implementing ICU physical rehabilitation.
24 These findings constitute a starting point for optimising rehabilitation delivery through
25 improvement and implementation science.
26
27

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29
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33 Rehabilitation in Critically Ill Patients 2018 (abstract available on page 61 of an online
34 conference book, [https://kuleuvencongres.be/icurecovery18/documents/conference-book-
35 icurecovery.pdf](https://kuleuvencongres.be/icurecovery18/documents/conference-book-icurecovery.pdf)), Physiotherapy UK conference 2018⁴⁹ and the North West London Research
36 Symposium for Health Professions 2018.
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38

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15
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28 **Author contributions**

29
30 All authors made substantial contributions to the conception and design of this work. HRW
31 carried out recruitment of participants, data collection and had main responsibility for
32 carrying out analysis. MJ, CN and CMA assisted in checking development of themes and all
33 authors advised on interpretation of data. HRW drafted this report and all authors revised it
34 critically for important content and approved the final published version. All authors are
35 accountable for the accuracy and integrity of the work.
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Consolidated criteria for reporting qualitative research checklist

Adapted from: TONG, A., SAINSBURY, P. & CRAIG, J. 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*, 19, 349-57.

| Topic | Item no. | Guide questions/ descriptions | Reported on page no. |
|--|----------|--|----------------------|
| Domain 1: Research team and reflexivity | | | |
| Personal Characteristics | | | |
| Interviewer/facilitator | 1 | Which author/s conducted the interview or focus group? | 6 |
| Credentials | 2 | What were the researcher's credentials? E.g. PhD, MD | 6 |
| Occupation | 3 | What was their occupation at the time of the study? | 6 |
| Gender | 4 | Was the researcher male or female? | 6 |
| Experience and training | 5 | What experience or training did the researcher have? | 6 |
| Relationship with participants | | | |
| Relationship established | 6 | Was a relationship established prior to study commencement? | 6 |
| Participant knowledge of the interviewer | 7 | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research | 6 |
| Interviewer characteristics | 8 | What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic | 6 |
| Domain 2: study design | | | |
| Theoretical framework | | | |
| Methodological orientation and Theory | 9 | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis | 4 |
| Participant selection | | | |
| Sampling | 10 | How were participants selected? e.g. purposive, convenience, consecutive, snowball | 5 |
| Method of approach | 11 | How were participants approached? e.g. face-to-face, telephone, mail, email | 5 |
| Sample size | 12 | How many participants were in the study? | 7 |
| Non-participation | 13 | How many people refused to participate or dropped out? Reasons? | 7 |
| Setting | | | |
| Setting of data collection | 14 | Where was the data collected? e.g. home, clinic, workplace | 5 |
| Presence of non-participants | 15 | Was anyone else present besides the participants and researchers? | 5 |
| Description of sample | 16 | What are the important characteristics of the sample? e.g. demographic data, date | 8-9 |
| Data collection | | | |

| | | | |
|--|----|---|-------------------------------|
| Interview guide | 17 | Were questions, prompts, guides provided by the authors? Was it pilot tested? | 5 |
| Repeat interviews | 18 | Were repeat interviews carried out? If yes, how many? | 5 |
| Audio/visual recording | 19 | Did the research use audio or visual recording to collect the data? | 6 |
| Field notes | 20 | Were field notes made during and/or after the interview or focus group? | 6 |
| Duration | 21 | What was the duration of the interviews or focus group? | 7 |
| Data saturation | 22 | Was data saturation discussed? | 5 |
| Transcripts returned | 23 | Were transcripts returned to participants for comment and/or correction? | 6 |
| Domain 3: analysis and findings | | | |
| Data analysis | | | |
| Number of data coders | 24 | How many data coders coded the data? | 6 |
| Description of the coding tree | 25 | Did authors provide a description of the coding tree? | Supplementary material |
| Derivation of themes | 26 | Were themes identified in advance or derived from the data? | 6 |
| Software | 27 | What software, if applicable, was used to manage the data? | 6 |
| Participant checking | 28 | Did participants provide feedback on the findings? | 5-6 |
| Reporting | | | |
| Quotations presented | 29 | Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. participant number | 10-16, supplementary material |
| Data and findings consistent | 30 | Was there consistency between the data presented and the findings? | 10-16, supplementary material |
| Clarity of major themes | 31 | Were major themes clearly presented in the findings? | 10-16, supplementary material |
| Clarity of minor themes | 32 | Is there a description of diverse cases or discussion of minor themes? | 10-16 |

Supplemental file 2

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7 1. Patient / relative / carer topic guide.
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13 2. Initial thematic framework
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19 3. Table with summary of themes, sub-categories and verbatim quotes with participant numbers
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Interview topic guide: Patient representative

Introduction:

- We value your opinions/what you think about these questions; there's not necessarily a right or wrong answer; it's not a test.

Examples of general probes that may be used

- Tell me more about that.
- Why do you think that?
- Have you got any examples?

If unable to answer open question:

- Some people have said this ... [e.g. a known barrier from the literature if not already mentioned – see below for specific examples] ...what do you think?

If participant unable to define early mobilisation:

- We are defining early mobilisation as something the patient does with 'their own muscle strength and control' including activities such as:
 - Moving in bed
 - Exercises
 - Sitting on the edge of the bed,
 - Standing
 - Marching on the spot,
 - Transferring from bed to chair
 - Walking...

...all whilst patients are on intensive care.

Interview questions

General questions:

1. Please tell me about your experience on the ICU.

2. Please tell me about physiotherapy and mobilisation (moving around and getting up and out of bed) on the ICU.
 - a. What you would think of as early mobilisation?
 - b. What early mobilisation did you do? How often did you do it?
 - c. How was it decided that it was the right time for you to start mobilising on the ICU?

3. Do you think that early mobilisation was carried out enough?

Focused questions:

4. When you were asked if you wanted to mobilise, did you have any concerns over risks or problems that might occur?
Potential question-specific prompts: not being well enough; fall; lines and drains/breathing tube falling out.

5. Was there anything that stopped or delayed you from mobilising on the ICU?

Potential question-specific prompts: Feeling too unwell; lines and tubes; not enough staff.

6. What kind of things stopped mobilisation from happening more often on the ICU you were on?

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Potential question-specific prompts: Not a priority; team did not work together; team did not have enough teaching.

7. Why do you think the staff on you ICU wanted you to mobilise and what do you think the benefits were?

Example of potential question-specific prompts: Physical benefits; leave ICU sooner, prevent long-term complications.

8. In your experience, what things helped you to mobilise on the ICU?

Potential question-specific prompts: Different professions working together; feeling well.

9. What kind of things do you think could be improved or changed to help mobilisation to happen more often on your ICU and to overcome some of the problems you mentioned earlier?

Potential question-specific prompts: Better team communication; staff getting more teaching.

10. This question will explore other areas that previous interviews have brought up as important: e.g. other people have mentioned this... what do you think?

11. Is there anything else you'd like to say about what stops early mobilisation on the ICU and what could make it happen more often?

Initial thematic framework.

BARRIERS

1. Perceived risk of mobilising certain patients [SAFETY/RISK]

- 1.1 Airway and attachments
- 1.2 Patient instability
- 1.3 Patient type
- 1.4 Patient cognitive state
- 1.5 Patient medical status
- 1.6 Clinicians' perception of readiness to mobilise
- 1.7 Other

2 Patient's or their family member's reluctance for mobilisation

- 2.1 Clinician opinion of patient's or their family member's reluctance for mobilisation
- 2.2 Patients not feeling ready or motivated for mobilisation
- 2.3 Poor communication from clinicians
- 2.4 Aspects of the ICU environment not promoting mobilisation to patients
- 2.5 Other

3 Team working and unit culture/staff experience/ resources

- 3.1 Culture/Lesser priority
- 3.2 Roles and responsibilities
- 3.3 Lack of leadership
- 3.4 Staff experience
- 3.5 Lack of knowledge
- 3.6 Lack of resources
- 3.7 Logistics/ Other interventions
- 3.8 Nurse environment e.g. HDU/toilet
- 3.9 Other

FACILITATORS

4 Practical changes to how mobilisation was carried out.

- 4.1 Patient and family engagement
- 4.2 Mob treatment specific/functional rehabilitation
- 4.3 Use of protocols to facilitate clinical implementation of mobilisation
- 4.4 Patient opinion on how clinicians should communicate with them.
- 4.5 Specific patient motivators

1 4.6 Equipment/environment
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3 4.7 Other changes/optimal practice
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7 **5. Improvements in team working and culture/clinician specific**

8 5.1 Leadership

9 5.2 Team Communication

10 5.3 Experienced staff

11 5.4 Improved staffing/resources

12 5.5 Other team working

13 5.6 Prioritise

14 5.7 Education

15 5.8 Other culture change
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21 **6. Patient characteristics that made it easier to mobilise**

22 6.1 Pre-morbid/general characteristics status

23 6.2 Acute/admission-related status

24 6.3 Other
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28 **7. Risks, benefits and other**

29 7.1 Risks

30 7.2 Benefits

31 7.3 Other/irrelevant
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| Table: Summary of themes and sub-categories | | | |
|--|---|---------------------|--|
| Themes | Sub-categories | Quote number | Participant quote |
| 1. Safety and physiological concerns | 1.1 Airway, lines and attachments | 1 | <i>"I can't think who, they said an intensive care patient looks like little spiders in a web, and I agree with it. Like literally they have got tubes and attachments out everywhere." (Therapist 1)</i> |
| | 1.2 Particular patient groups | 2 | <i>"...the types of patients we have have multiple and complex injuries, they're not straightforward patients to mobilise anyway..." (Therapist 3)</i> |
| | 1.3 Physiological instability or dependence on organ support | 3 | <i>"...it's mainly blood pressure related for me, or their resp[iratory] rate. If I don't think they're going to tolerate mobilising, and if it's going to cause more harm than good." (Therapist 2)</i> |
| | | 4 | <i>"So anybody who's on an inotrope vasopressor is, as far as I'm concerned, not safe to be mobilised... they're more likely to have a postural hypertension that would result in injury to them." (Doctor 2)</i> |
| | | 5 | <i>"...whilst in itself [vasoactive drugs are] often not a reason to prevent ongoing rehab especially in junior staff it's a significant source of anxiety of doubling or trebling the dose of a medicine to keep your blood pressure up, without some form of kind of very clear guidance and encouragement that this is okay and it will return to normal following [rehabilitation] treatment." (Nurse 5)</i> |
| | 1.4 Patient's ability to actively participate | 6 | <i>"And after that incident I think that was the first time I actually cried, because it hit me that "Yes, the nurses are right, I am not able to just get up and move like I would if I had been healthy," you know, so that was very traumatic for me..." (Patient 11).</i> |
| | | 7 | <i>"I think I would have felt very vulnerable anyhow, [be]cause suddenly you are just weak as a baby." (Patient 7)</i> |
| | | 8 | <i>"Their cognitive state is a massive thing as well. How alert are they if they've only just been woken up from sedation or if they've had a neurological event or, you know, whatever reason, that could affect their cognition." (Therapist 6)</i> |
| | 1.5 Clinician perception of readiness to begin rehabilitation | 9 | <i>"...the perception, [clinicians] might think that, because this patient is dependent on a particular type of organ support, this patient is not suitable for mobilisation. So these boundaries and barriers needs to be broken." (Doctor 3)</i> |
| | | 10 | <i>"I think it's probably the fear of the unwell patient, you know, we, they're in ITU therefore they must be the most unwell people in the hospital. And I think it's that kind of mentality and the fact we attach them to fifteen hundred things..." (Therapist 7)</i> |

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| | | 11 | <i>"...happy to cause no harm, or kind of, and no perceived harm by not mobilising someone but actively getting up and causing harm is a, always going to be a significant anxiety for staff..." (Nurse 5)</i> |
| | | 12 | <i>"We love keeping the numbers normal, we love the sense of security that we maintain as normal physiology as we can, so that is why, a junior nurse would be more worried if she gets any change in the patient's state after mobilisation..." (Doctor 1)</i> |
| | | 13 | <i>"...intensive care doctors and nurses may also be quite, well, I shouldn't say "quite" but there is a part in us that is controlling the situation and so, you know, trying to mobilise the patient may also be a bit of a paradigm shift in our own mind of, you know, this complete control over the situation and over this patient." (Doctor 4)</i> |
| | | 14 | <i>"...so we kind of reset our expectations about normality and that is doing some sort of exercise when they ambulate because it is – it is to a critically ill patient it is an exercise, that we may see some events happen and as long as it is the range of acceptance, we can just modify our targets, and continue to mobilise." (Doctor 1)</i> |
| 2. Patient participation and engagement | 2.1 Patient reluctance to participate in rehabilitation | 15 | <i>"...well I'm in ICU... you're having intensive care, don't rock the boat by making things worse by trying to get out of bed." (Patient 8)</i> |
| | | 16 | <i>"...there were times when I simply didn't want to do it... Depression, ... lack of energy, lack of spirits really ..." (Patient 7)</i> |
| | 2.2 Communication between patients and clinicians | 17 | <i>"I would say to any nurse or any staff working in ICU... keep up that reassurance with patients because it's quite a scary experience..." (Patient 8)</i> |
| | | 18 | <i>"[The consultant] pushed me beyond what I mentally thought was physically possible. I didn't believe that I could do that and of course, perhaps it's the nature of my personality, but I responded to that. Others may not have responded to that, I can't say." (Patient 3)</i> |
| | 2.3 Patient engagement in planning rehabilitation | 19 | <i>"So, alongside that, we've also made like goal setting sheets that can go up by the patient's bed, so then when they sit up, when they sit upright in bed, they can see them. I draw a smiley face when they've completed one..." (Therapist 2)</i> |
| 2.4 Including activities meaningful to patients | 20 | <i>"Looking at therapy in a slightly different way and finding an activity that's meaningful to [patients], whether that's personal care or leisure activities, and through that encouraging them to... engage in that activity and then helping them to see the therapeutic value of that." (Therapist 4)</i> | |
| 2.5 Identify key patient motivators | 21 | <i>"...if they can see what's in it for them, that they're gaining in dignity and all of that, they might cooperate more." (Relative 2)</i> | |

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| | 2.6 The role of family | 22 | <i>"I remember the first time I took a few steps, the nurse said to me, "Well we'll do it with your husband," so my husband stood on one side and said, "We'll go for a walk with your husband," ... So it was most amazing feeling ever, you know? So everything, kind of in my head everything shut down; the nurse went away, the ward went away, it was just me and my husband going for a walk." (Patient 11)</i> |
| 3. Clinician experience and knowledge | 3.1 Amount of experience and support | 23 | <i>"I've had instances where it's mostly been junior people and it's terrifying. But for someone then to have a senior position helping you, that's so much better." (Nurse 2)</i> |
| | 3.2 Lack of training, knowledge and skills | 24 | <i>"It doesn't happen because... we are not aware enough yet how important it is, or how much difference it could make, so it's not embedded in our thinking and in our behaviour well..." (Doctor 4)</i> |
| | 3.3 Interdisciplinary team education and training | 25 | <i>"The education as well is important because you need to get people to understand what they're doing and to value it, so that they do it with passion and with skill." (Doctor 1)</i> |
| 4. Teamwork | 4.1 Team culture and attitudes | 26 | <i>"But a lot of it's just to do with the attitude of the individual staff member, how proactive they are and how much they believe in mobilisation as a kind of key thing" (Nurse 5)</i> |
| | 4.2 Perception of roles and responsibilities | 27 | <i>"...I think the consultant's role is very important and it doesn't just include saying, "Mobilise the patient". It includes making sure that mobilisation happens and making sure that the team are, like every single member of the team is comfortable and understands the decision, and the risks related to it and understands that I am there to back them up if something happens." (Doctor 1)</i> |
| | | 28 | <i>"I've found that it's taken a long time for me to be accepted and for them to actually accept my opinion might be right..." (Therapist 2)</i> |
| | | 29 | <i>"I always felt like it was, it was very much seen it was the physio job to do anything related to moving the patient so even getting them out of bed." (Therapist 7)</i> |
| | | 30 | <i>"...good teamwork is really helpful, and actually a really good symbiotic relationship between the nursing staff and the therapy staff is really key." (Therapist 4)</i> |
| | 4.3 Definition and delivery of rehabilitation | 31 | <i>"...mobilisation for me in ITU is hoisting somebody into a chair." (Nurse 4)</i> |
| 32 | | <i>"...rehabilitation is not, you know, 20 minutes with the physio or the OT every day. Really good rehabilitation is a 24 hour approach, and that – part of that is positioning a patient in bed. Part of that is ensuring the patient gets the right nutrition as well as looking at the actual physical things that they're doing." (Therapist 4)</i> | |
| 33 | | <i>"...a different mentality within intensive care and to think, well actually, you know, we need to begin the rehab process all together from day one, and if a patient can be encouraged to do something they should be given the time and the opportunity to do that." (Therapist 4)</i> | |

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| | 4.4 Staffing and logistics | 34 | <i>"...you start breaks at 9.30, 10.00. You finish the breaks about 12.00,1.00, so then it's not until the afternoon that people are free to help." (Nurse 2)</i> |
| 5. Equipment and environment | 5.1 Rehabilitation equipment | 35 | <i>"...equipment wise. You know, it's the age old problem isn't it, more of it, better ways to fix it, more money, so we've got the equipment, you know, got backup hoists." (Therapist 7)</i> |
| | 5.2 ICU environment | 36 | <i>"there's just something about the environment which makes you think that you need to stay in the bed and that you shouldn't be moving around... whereas on a general ward, you don't want to be in the bed, you want to get out." (Patient 8)</i> |
| | | 37 | <i>"...you can see some bright lights and monitors, you can hear monitors going off, but you don't have the, "Crash, bang, wallops!" that you get in a general ward... but it's a capsule and a bubble, it's a weird feeling... "People think it's like being in a spaceship" and I thought, "That's such a good description" and that's how it did feel." (Patient 8)</i> |
| 6. Risks and benefits of rehabilitation on intensive care | 6.1 Clinician perception of risks | 38 | <i>"Falls, removal of lines and tubes and then causing bleeding, vasovagal episodes, it's actually a risky thing to mobilise an ITU patient, anything can go wrong..." (Nurse 3)</i> |
| | | 39 | <i>"I like mobilising patients. The more attachments the better... Because I like the challenge!" (Therapist 2)</i> |
| | 6.2 Patient perception of risks | 40 | <i>"I never felt scared, I felt that the physiotherapist that was orchestrating the movement was sort of holding on to me to begin with and I never felt I was going to fall down..." (Patient 1)</i> |
| | 6.3 Physical benefits | 41 | <i>"It might help their movement and I feel the more they mobilise the more their muscles are good. The more you make them sit out of the bed and stand they can stand on their feet better." (Nurse 1)</i> |
| | 6.4 Psychological benefits | 42 | <i>"...the important thing is you sense that you're not just lying there waiting to die. ...so you are... you are... coming back to being a human being that wants to live." (Patient 7)</i> |

BMJ Open

Clinician and patient perspectives on the barriers and facilitators to physical rehabilitation in intensive care: a qualitative interview study

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3 **Clinician and patient perspectives on the barriers and facilitators to physical**
4 **rehabilitation in intensive care: a qualitative interview study.**
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Abstract

Objectives

To explore patient, relative/carer and clinician perceptions of barriers to early physical rehabilitation in intensive care units (ICU) within an associated group of hospitals in the United Kingdom (UK) and how they can be overcome.

Design

Qualitative study using semi-structured interviews and thematic framework analysis.

Setting

Four ICUs over three hospital sites in London, UK.

Participants

Former ICU patients or their relatives/carers with personal experience of ICU rehabilitation. ICU clinicians, including doctors, nurses, physiotherapists and occupational therapists, involved in the delivery of physical rehabilitation or decisions over its initiation.

Interventions

Nil

Primary and secondary outcomes measures

Views and experiences on the barriers and facilitators to ICU physical rehabilitation.

Results

Interviews were carried out with 11 former patients, 3 family members and 16 clinicians. The themes generated related to: safety and physiological concerns; patient participation and engagement; clinician experience and knowledge; teamwork; equipment and environment; and risks and benefits of rehabilitation in intensive care. The overarching theme for overcoming barriers was a change in working model from ICU clinicians having separate responsibilities (a multidisciplinary approach) to one where all parties have a

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3 shared aim of providing patient-centred ICU physical rehabilitation (an interdisciplinary
4 approach).
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7 Conclusions

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10 The results have revealed barriers that can be modified to improve rehabilitation delivery in
11 an ICU. Interdisciplinary working could overcome many of these barriers to optimise
12 recovery from critical illness.
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18 **Strengths and limitations of this study**

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- This study explored a range of perspectives on the barriers to ICU rehabilitation (including clinicians and services users), thus eliciting in depth information to reveal a breadth of experiences of barriers and facilitators.
 - Thematic framework analysis was used which enables a systematic approach to organising data, facilitating in-depth exploration of the range of views within themes and between participant groups.
 - Patient and family recall of their experiences may have been impacted by the time from intensive care admission to interview, however interviews took place at the first follow up opportunity to minimise this effect.
 - Efforts were made to gain a range of perspectives using purposive sampling; however, fewer family members or carers took part in this study than former ICU patients.

48 **Introduction**

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50 The importance of physical rehabilitation of critically ill patients has been recognised
51 because of the prevalence of acute muscle weakness and wasting [1-3], and longer-term
52 substantial physical disability measured in this patient group [2 4 5]. Physical rehabilitation
53 consists of physical activity interventions (typically mobilising in or away from the bed) that
54 are begun once a patient has reached physiological stability [6-8]. Beginning physical
55 rehabilitation at an appropriate dose whilst patients are still in an intensive care unit (ICU)
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3 can improve physical function whilst in hospital and expedite discharge [9], although
4 implementing rehabilitation at a higher dose is not necessarily beneficial [10]. However,
5 when measured, there is concern that the actual amount of formal physical rehabilitation
6 delivered and patient participation in exercise whilst in intensive care are low [11-17].
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11 Studies have previously measured the barriers to implementing rehabilitation, the majority
12 of which use a quantitative approach [18]. However, a qualitative approach is better-suited
13 to exploring interpersonal relations [19] and therefore potential barriers relating to team
14 working and patient interactions. Where a qualitative approach has been used, issues of
15 communication and differences in opinion between clinicians [20-25] and difficulty in
16 providing rehabilitation in an environment where demands on staff and patient time change
17 quickly have been highlighted [23 26 27]. However, the lack of rehabilitation in intensive
18 care continues despite this current understanding of the barriers. Importantly, there is a
19 lack of in-depth knowledge of barriers in a United Kingdom (UK) setting, which includes
20 views of multiple stakeholders such as ICU clinicians from different professions involved in
21 implementing rehabilitation, as well as patients and family members [22 28-30].
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32 The objective of this study therefore, was to explore service user (patients or their
33 relatives/carers) and clinician perceptions of barriers to early physical rehabilitation in ICUs
34 within an associated group of hospitals in the UK and how they can be overcome.
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41 **Methods**

42 *Research design*

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44 A qualitative study using semi-structured interviews was conducted based on the approach
45 recommended by the National Centre for Social Research. This is based upon critical realism
46 and interpretivism using the framework approach to analysis [31]. Ethical approval was
47 gained from the London – Bloomsbury Research Ethics Committee (17/LO/0362) and
48 written, informed consent was gained from all participants. This study is reported in line
49 with the consolidated criteria for reporting qualitative research [32] (supplemental file 1).
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3 subject and methods experience (HRW, CN, CMA, ACG) and two patient representatives
4 who were former ICU patients approached through a national patient support group.
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7 *Setting and participants*

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10 The study was based at a UK National Health Service (NHS) hospital trust in London, which
11 has four ICUs for adult patients across three hospital sites, each of which has different
12 referring specialities. Purposive sampling [33 34] was used to recruit a range of service users
13 (former ICU patients and their family members/carers) and the hospital's ICU clinicians from
14 the different ICU settings, from different professional groups with a range of experience
15 levels.
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21 *Eligibility criteria and recruitment strategies*

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24 Clinicians were included if they were doctors (senior trainees [registrars/fellows] or
25 consultants), nurses, occupational therapists or physiotherapists with at least two months of
26 ICU experience and who had experience of rehabilitation treatments or deciding when they
27 should be initiated. Clinicians were approached via adverts in meetings, posted in staff areas
28 or via general group or more targeted emails. Former ICU patients and family members
29 were included if they had any personal experience of physical rehabilitation whilst in ICU.
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Data saturation

Estimates were that 30 participants would be required to gain a sufficient range of
perspectives, with sampling ending once apparent data saturation had been reached. Data
saturation was defined a priori as when no new themes of barriers and facilitators were
evident from interviews, as decided by the research steering group. During data collection,
when the interviewer felt no new themes were being discussed, the latest version of the
initial thematic framework was shown to the final clinician and patient participant as a
sense check to see whether they could identify any additional themes that had been missed.
Following this, the initial thematic framework was reviewed by clinical colleagues from all

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3 four professional groups included in the study, as well as the research steering group
4 members who were former ICU patients, to discuss if any obvious themes were missing.
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7 *Topic guide development*

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10 A semi-structured interview topic guide was developed (supplemental file 2), designed by
11 the research steering group (which included the input of former ICU patients) and was
12 formatted based on typical qualitative interview procedures [35-38]. It consisted of 11 main
13 open questions that were designed to address different aspects of the research objective
14 (such as barriers and risk), some of which were derived from previous studies[20 27 39]. The
15 interview was piloted with both clinicians and former patients to ensure questions were
16 clear and fit for purpose. No modifications were required to the topic guide in response to
17 testing.
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26 *Interview procedures*

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28 Interviews took place at the hospital site in person and only included the interviewer and
29 the individual participant. Each participant took part in one semi-structured interview.
30 Before the interview began, participants were asked for demographic data then the
31 interview proceeded. The format of the interview was a conversation, where wording was
32 not fixed and prompts were used to gain greater depth of understanding of participant
33 views and experiences[35]. Participants were asked to define physical rehabilitation
34 themselves, however, the study was designed based on rehabilitation consisting of
35 mobilisation treatments ranging from exercises and movement in the bed, to mobilising out
36 of bed and walking [8]. Participants were informed of this if they had difficulty defining
37 rehabilitation or if their definition was markedly different from how the study
38 conceptualised rehabilitation. Each interview was recorded and then transcribed verbatim.
39 Transcripts were not returned to participants for review in line with current thinking about
40 usefulness of this approach [40].
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53 *Reflexivity*

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55 All interviews were carried out by one interviewer (HRW) who is a male physiotherapist,
56 working full-time on the research study as part of work towards a doctorate, with training in
57 qualitative research methods. The interviewer had previous clinical experience at several of
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3 the ICUs that were settings for this study, including working alongside some of the clinician
4 participants, but not the patients or their relatives/carers. The researcher therefore had
5 previous experiences of barriers and facilitators of rehabilitation in the study setting. These
6 influences were taken into account using a reflexive diary before and after data collection,
7 which was then considered during the analysis process.
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13 *Data analysis*

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16 Thematic framework analysis [41 42] was used to produce themes based on the interview
17 transcript data. This involves drawing up an initial list of themes that summarised all the
18 interview data (supplemental file 2). Data were then arranged in a framework table which
19 structured what each participant had said about each initial theme in an easily accessible
20 form. This facilitated the production of a final set of themes and subthemes and comparison
21 of how these vary between groups of participants. Analysis was facilitated by the use of
22 NVivo 11 software (QSR International) and carried out by the first author (HRW). A second
23 researcher (MJ) reviewed 10% of interview transcripts and confirmed that they matched the
24 initial set of themes. At several stages during the analysis process, the research steering
25 group met to review the data, discuss uncertainties over formation of themes and as a
26 check on the process. Descriptive statistics were used to summarise demographic data using
27 IBM SPSS Statistics 25. Continuous data were tested for normality using the Shapiro-Wilk
28 test and non-normally distributed data described using median and interquartile range, and
29 normally distributed data described using mean and standard deviation.
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45 *Patient and public involvement*

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47 Former ICU patients were members of the research steering group. These patient
48 representatives edited the wording of recruitment materials and inputted into the design of
49 the topic guide. They also assisted the interviewer (HRW) to practice interview technique
50 and were involved in reviewing the initial thematic framework, as part of data saturation
51 checks. These patient representatives did not participate or contribute data to the study
52 itself.
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Results

Recruited participants included 16 clinicians, from a range of professions, with a range of experience in different settings (Table 1). Eleven former ICU patients and three family members/caregivers participated (Table 2), including substantial patient experience of ICU rehabilitation (mean patient participant length of ICU stay: 15 days, standard deviation \pm 10.8 days). Initially, 53 potential participants expressed interest in taking part, of whom 30 were recruited before data saturation was achieved. Five declined or were not available for interview, three did not respond further after initial contact, data saturation was achieved before four were recruited and 11 were not recruited as others were chosen instead to gain a greater range of views, as per the purposive sampling strategy. Interviews lasted for a mean 43 minutes (standard deviation \pm 11 minutes).

Table 1: Clinician participant demographics

| | Clinicians (N=16) |
|--|------------------------------|
| Age, mean (\pm SD) | 34 (8.6) |
| Gender: female, n (%) | 12 (75) |
| Profession, n (%) | |
| Doctor | 4 (25) |
| Nurse | 5 (31) |
| Therapist (physiotherapist or occupational therapist) | 7 (44) |
| Seniority, n (%) | |
| Team leader | 9 (56) |
| Senior clinician | 6 (38) |
| Junior clinician | 1 (6) |
| Number of years of ICU experience, median (IQR) | 6 (1-15) |
| Number of years of clinical healthcare experience, mean (\pm SD) | 11 (8) |
| Place of work*, n (%) | |
| Intensive care 1 | 5 (31) |
| Intensive care 2 | 6 (38) |
| Intensive care 3 | 5 (31) |
| Intensive care 4 | 5 (31) |
| Involvement in physical rehabilitation, n (%) | |
| Participating in the decision over whether a patient is stable enough to mobilise. | 16 (100) |
| Leading rehabilitation treatment | 10 (63) |
| Assisting with rehabilitation treatment | 12 (75) |
| SD= standard deviation; IQR=interquartile range. *Some clinicians work on more than one intensive care unit. | |

Table 2: Patient and caregiver participant demographics

| | Former ICU patients and caregivers (N=14) |
|--|---|
| Service user participants: | |
| Patients, n (%) | 11 (79) |
| Caregivers, n (%) | 3 (21) |
| Age, mean (\pm SD) | 65 (10.7) |
| Male, n (%) | 10 (71) |
| Patient ICU length of stay in days* (n=11), mean (\pm SD) | 15 (10.8) |
| Patient stated reason for admission (n=11), n (%) | |
| Aortic dissection | 1 (9) |
| Cardiac arrest | 1 (9) |
| Gastrointestinal | 1 (9) |
| Organ failure | 1 (9) |
| Septic shock | 1 (9) |
| Surgery | 5 (45) |
| Trauma | 1 (9) |
| Site where ICU was experienced, n (%) | |
| Intensive care 1 | 2 (14) |
| Intensive care 2 | 11 (79) |
| Intensive care 3 | 0 (0) |
| Intensive care 4 | 1 (7) |
| Highest level of physical rehabilitation experienced, n (%) | |
| Moving in bed | 2 (14) |
| Sitting in a chair | 6 (43) |
| Walking | 6 (43) |

SD= standard deviation. *Two participants reported their length of stay as approximate.

The study themes and subthemes are described in detail below. The supplementary material illustrates these themes and subthemes with verbatim quotes from participants, with participant numbers (see supplemental file 2 to link quote numbers with data).

1. Safety and physiological concerns

Clinician and patient participant concerns over the safety of rehabilitation were reported as a barrier to rehabilitation. This included the risk of dislodging lines and attachments (such as ventilator tubing and femoral lines (quote 1). However, some participants, who were mostly clinicians, did not perceive this as a barrier, if careful planning and also organisation of the bed space environment was carried out. For example, avoiding the use of femoral vascular catheters as access for haemofiltration or planning breaks in haemofiltration could enable rehabilitation. Endotracheal tubes or airways that had been difficult to insert, were also

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3 cited as barriers, with the difficulty of titrating sedation for a balance between tube
4 tolerance and patient alertness cited as one explanation by a clinician.
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8 Clinician participants identified particular patient groups with barriers to rehabilitation
9 because they felt they were at an increased risk or they presented additional logistical
10 challenges, such as those with multiple traumatic injuries (quote 2). They suggested that
11 patients admitted after surgery could have certain surgical precautions which presented
12 logistical issues contacting different teams to gain clarity over safety of rehabilitation.
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14 Despite this, patients in ICU after elective surgery could have received pre-operative
15 education or pre-planned rehabilitation programmes, both facilitating rehabilitation post-
16 operatively.
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23 Physiological instability, such as instances of respiratory distress or cardiovascular instability
24 were reported as preventing rehabilitation treatments by participants who were mostly
25 clinicians.
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30 *“...it’s mainly blood pressure related for me, or their resp[iratory] rate. If I don’t think*
31 *they’re going to tolerate mobilising, and if it’s going to cause more harm than good.”*
32 *(Therapist 2, quote 3)*
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36 Dependence on organ support, such as the amount of respiratory support or vasoactive
37 drugs were also identified as barriers. Clinician opinion ranged from perceiving patients
38 receiving vasoactive drugs as a contraindication to rehabilitation (quote 4), to others who
39 considered rehabilitation possible if a low or weaning dose was used or if the patient was
40 less severely unwell, for example if vasoactive drugs were being used for epidural-induced
41 hypotension. Risk relating to hypotension during rehabilitation was suggested by a clinician
42 to relate to anxiety from junior staff about managing vasoactive drugs during mobilisation
43 (quote 5). Some clinician participants suggested potential organ support barriers should be
44 discussed with the ICU doctors and also advocated actively sedating patients less.
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49 Patient participants sometimes reported feeling too unwell to actively participate in
50 rehabilitation. Some patients reported profound feelings of weakness, making their bodies
51 feel ‘like a lead weight’, which came as a surprise when they first tried to get up and was
52 linked with feelings of vulnerability (quotes 6 and 7). These participants did then identify a
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3 time in their recovery where these symptoms subsided to the point where they could then
4 participate.
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7 Additionally, level of alertness, confusion and agitation, cognitive impairments and
8 personality disorders were all cited as barriers by clinicians (quote 8). Some patients and
9 relatives recalled experiences of delirium and hallucinations as profound influences on their
10 recovery in general.
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15 The difference between clinicians' perception of safety and a patient's readiness to begin
16 rehabilitation was expressed as a barrier by clinician participants (quote 9). Some
17 explanations included clinician fear of the unwell patient and the risk of perceived harm
18 which caused anxiety for some (quote 10).
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24 *"...happy to cause no harm, or kind of, and no perceived harm by not mobilising*
25 *someone but actively getting up and causing harm is a, always going to be a*
26 *significant anxiety for staff..." (Nurse 5, quote 11)*
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30 This was linked to clinician need for control over the physiological numbers, potentially
31 leading to a reluctance to reduce that control by moving a patient out of bed (quote 12).
32 One doctor suggested that a paradigm shift was required to address this barrier (quote 13).
33 Another doctor said they modified targets for acceptable changes in physiological
34 observations (such as blood pressure), to reassure other clinicians that mobility was still safe
35 (quote 14).
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45 2. Patient participation and engagement

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47 Clinician participants reported experience of patients who may be reluctant to participate in
48 rehabilitation. When asked about this theme, patient participant responses ranged from
49 reporting enthusiastic engagement in rehabilitation, to not wishing to mobilise out of bed.
50 Reasons cited for their reluctance included not wanting to do something perceived as
51 potentially worsening their condition (quote 15). Furthermore, a lack of incentive or
52 motivation to engage was discussed, as well as a feeling of weakness, which some found
53 difficult to accept.
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3 *"...there were times when I simply didn't want to do it... Depression, ... lack of energy,*
4 *lack of spirits really ..."* (Patient 7, quote 16)
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8 Suboptimal communication between patients and clinicians was felt to be a barrier to
9 rehabilitation by some patient and clinician participants. Suggested reasons included the
10 little time spent by clinicians discussing rehabilitation, difficulty communicating
11 rehabilitation goals and some sometimes showed a lack of empathy. Suggested ways of
12 overcoming these issues included maximising a patient's ability to communicate, giving
13 more reassurance, building up trust, showing kindness and helping patients to feel safe
14 (quote 17). Patients valued humour from staff and felt rapport was aided by staff continuity.
15 Patients and relatives recommended that when a patient was reluctant to mobilise, an
16 encouraging and diplomatic approach balanced with assertiveness from clinicians to "push"
17 patients (quote 18).
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27 Some patient participants recommended that strategies to improve patient engagement in
28 rehabilitation should always be patient-specific. Other suggestions, mostly from clinicians,
29 included promoting sleep at night, involving patients in planning a rehabilitation timetable,
30 goal setting and using outcome measures to demonstrate progress (quote 19). Furthermore,
31 education for patients and relatives at the appropriate time, around the importance of
32 rehabilitation was suggested.
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39 Further facilitators suggested by patients and clinicians included the use of meaningful
40 activities and identifying key patient motivators. The importance of tailoring rehabilitation
41 to include activities meaningful to patients (such as functional tasks and personal care
42 activities based on previous interests) were identified to facilitate engagement within a
43 context more readily understood by patients.
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48 *"Looking at therapy in a slightly different way and finding an activity that's*
49 *meaningful to [patients], whether that's personal care or leisure activities, and*
50 *through that encouraging them to... engage in that activity and then helping them to*
51 *see the therapeutic value of that."* (Therapist 4, quote 20)
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57 Recognising key patient motivators such as gaining independence and dignity by being able
58 to do more for themselves was also suggested (quote 21). Patients reported being
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3 motivated through their improvement during rehabilitation sessions, almost as a proxy for
4 improvement from critical illness. Patient qualities of resilience, determination and a
5 positive mental attitude were reported as a facilitator by patients themselves.
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10 The role of family was discussed as both a barrier and facilitator. Instances were reported by
11 some clinician participants where relatives could be reluctant for patient participation in
12 rehabilitation. When this was discussed with patient and relative participants, responses
13 ranged from an understanding of why this happens, to a strong disbelief that this could be
14 the case. The role of family in encouraging patients was discussed, with some highlighting
15 how they were motivated to improve mobility to help their family member feel better
16 (quote 22).
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23 *3. Clinician experience and knowledge*

24 Clinician participants discussed the experience and knowledge of those carrying out
25 rehabilitation. A lack of experience, confidence and senior support were cited as barriers
26 (quote 23). However, some therapists also proposed those clinicians with more experience
27 could pose a barrier. They suggested some more experienced nurses may perceive
28 rehabilitation as outside of their role or may have spent more time in an environment
29 where rehabilitation was not a priority. Opinions over experience as a facilitator also varied.
30 Some emphasised that a team with the right skill mix (including adequate senior support)
31 was important, with a nurse suggesting having more confident staff freed up time for
32 rehabilitation. However, some therapists reported that more inexperienced nurses could be
33 a facilitator as they have received recent training in rehabilitation. One therapist cited
34 enthusiasm as being more important than experience to facilitate rehabilitation.
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47 A lack of training and knowledge, including about the importance of rehabilitation,
48 organisation and planning of sessions and therapeutic manual handling were suggested as
49 important factors by clinicians.
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53 *“It doesn’t happen because... we are not aware enough yet how important it is, or*
54 *how much difference it could make, so it’s not embedded in our thinking and in our*
55 *behaviour...” (Doctor 4, quote 24)*
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3 A popular strategy suggested by clinicians to address these barriers was through education
4 and training for the ICU interdisciplinary team, such as through study days and experiential
5 learning (quote 25). Additionally, the use of a rehabilitation policy and guidelines to drive
6 implementation and aid less experienced clinicians know when to begin rehabilitation was
7 discussed.
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14 4. Teamwork

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16 Discussion of teamwork covered team culture, clinician roles, rehabilitation definitions and
17 logistics. A lack of a rehabilitation culture leading to some staff having a less proactive
18 attitude to rehabilitation delivery was discussed.
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24 *“But a lot of it’s just to do with the attitude of the individual staff member, how*
25 *proactive they are and how much they believe in mobilisation as a kind of key thing”*
26 *(Nurse 5, quote 26)*
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30 One explanatory factor was a lack of medical leadership. Participants (mostly clinicians)
31 suggested promoting a culture where an interdisciplinary team works together to promote
32 rehabilitation as routine and important, would facilitate implementation. A less hierarchical
33 culture would encourage proactive team planning and problem solving, with medical
34 leadership again emphasised as key (quote 27).
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40 Another key barrier to rehabilitation discussed by clinicians, was differences in opinion
41 between professions over roles and responsibilities (quote 28). Some reported that
42 rehabilitation was perceived as only a therapist’s job (quote 29). Therapists reported that
43 there could be a lack of understanding of their role or their other responsibilities, for
44 example, covering other clinical areas in addition to the ICU. To overcome this, clinicians
45 suggested promoting teamwork where separate responsibilities were acknowledged and
46 there was a willingness to crossover professional roles, with therapists empowering nurses
47 to facilitate rehabilitation (quote 30).
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56 Differences in opinions over roles and responsibilities were impacted upon by variation in
57 how rehabilitation was defined and delivered. This in itself may explain some of the
58 difficulty in promoting a proactive rehabilitation culture. Clinicians sometimes limited their
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3 definition of rehabilitation to a patient sitting out in a chair (quote 31). Conversely,
4 occupational therapist (OT) participants widened the concept of rehabilitation to
5 encompass a twenty-four hour interdisciplinary approach utilising functional tasks.
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10 *“...rehabilitation is not, you know, 20 minutes with the physio or the OT every day.*
11 *Really good rehabilitation is a 24 hour approach, and that – part of that is positioning*
12 *a patient in bed. Part of that is ensuring the patient gets the right nutrition as well as*
13 *looking at the actual physical things that they’re doing.” (Therapist 4, quote 32)*
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18 This may increase patient engagement and interdisciplinary involvement, by helping staff to
19 incorporate more rehabilitation activities during the course of their normal duties, for
20 example during personal care activities (quote 33).
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25 Finally, lack of staff and logistical difficulties in implementing rehabilitation were suggested
26 as barriers by clinicians and patients. Greater investment in staffing and utilisation of
27 healthcare support workers was suggested to address this. Logistical concerns covered the
28 number of staff required and the duration of a rehabilitation session in competition with
29 other unit procedures. Logistical barriers also concerned a difficulty in timing around nurses’
30 rest breaks and staffing ratios (quote 34). Within the study ICUs, once a patient’s illness
31 severity decreased to a certain level, the nursing staffing ratio fell from one nurse to one
32 patient to one nurse to two patients, coinciding with a potential increase in readiness for
33 rehabilitation. Potential strategies to address these concerns include proactive planning of
34 sessions, for example during morning team briefings. Additionally, a change to working
35 patterns to build in more time for rehabilitation to occur was suggested.
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48 *5. Equipment and environment*

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50 A lack of working specialist rehabilitation equipment was highlighted as a barrier by clinician
51 participants (quote 35). Clinicians advocated greater investment and suggested the whole
52 team to take ownership of ensuring equipment was fixed or to find funding sources for
53 equipment replacement. Environmental concerns raised by patients and clinicians firstly
54 covered practical limitations such as space to move rehabilitation equipment around the
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3 bedspace. Furthermore, a patient highlighted the nature of the ICU environment itself did
4 not encourage them to move out of bed (quote 36).

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7 *“...you can see some bright lights and monitors, you can hear monitors going off, but you*
8 *don’t have the, “Crash, bang, wallops!” that you get in a general ward... but it’s a*
9 *capsule and a bubble, it’s a weird feeling... “People think it’s like being in a spaceship”*
10 *and I thought, “That’s such a good description” and that’s how it did feel.” (Patient 8,*
11 *quote 37)*

12 13 14 15 16 17 18 19 20 6. Risks and benefits of rehabilitation in intensive care

21
22 Opinions over risks and benefits were explored, which closely related to safety, knowledge
23 and attitude towards rehabilitation. Clinician ideas about risks resembled the safety issues
24 from theme one, however, this did not necessarily mean a reluctance to mobilise (quotes 38
25 and 39). Most patients and relatives reported they had not worried about the risks of
26 mobilising whilst in an ICU (quote 40), although some had experienced things such as
27 dizziness and one reported passing out. Considering benefits reported by clinicians and
28 patients, physical benefits of rehabilitation focused on the acute impact of improving
29 physical function, including in preparation for recovery on the wards (quote 41). Suggested
30 psychological benefits for the patient included helping mood and wellbeing and restoring a
31 sense of dignity.

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41 *“...the important thing is you sense that you’re not just lying there waiting to die. ...so*
42 *you are... you are... coming back to being a human being that wants to live.” (Patient*
43 *7, quote 42)*

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48 Finally, several clinicians reported how a benefit of patient rehabilitation was the
49 encouragement and sense of achievement it provided for staff.

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52 The overarching theme for how to overcome barriers to physical ICU rehabilitation related
53 to moving from a multidisciplinary approach where different professions work together but
54 have separate responsibilities; towards a patient-centred, interdisciplinary team approach.
55 This was where all parties have a shared aim of providing physical rehabilitation (quotes 27
56 and 30). This can facilitate clinicians working together to develop a shared understanding of
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3 the definition of rehabilitation, so patients can participate in activities that are more
4 meaningful. Furthermore, an agreement can be developed among the team, about the
5 benefits and risks, the optimum way to deliver rehabilitation and when it is safe to start.
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7 This can then help different professions to collaborate to help to overcome barriers related
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9 to team working and to improve the ICU environment.
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16 **Discussion**

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18 This study has provided an in-depth exploration of the views of multi-professional ICU
19 clinicians and was strengthened by including former ICU patients and their relatives, adding
20 to the knowledge of overcoming barriers to ICU physical rehabilitation. Primarily this is
21 suggested to be through a change in approach to team working, from a multidisciplinary to
22 an interdisciplinary and patient-centred approach. This means moving from a
23 multidisciplinary way of working where a team is made up of different professions working
24 on their distinct priorities [43-45], to an interdisciplinary approach where a team of different
25 professions work together with ICU rehabilitation a priority for all. This therefore
26 emphasises a shift from rehabilitation primarily being the focus of therapy staff, to one
27 where all team members have joint accountability and identify this as a key aspect to their
28 work, contributing in overlapping ways but also in ways relevant to their professional skills
29 and knowledge [46 47]. This change in perspective could facilitate a change in opinion over
30 the definition and delivery of rehabilitation towards an interdisciplinary, 24-hour approach
31 that includes activities meaningful to patients to facilitate engagement. An interdisciplinary
32 working model has previously been used to facilitate more efficient and effective care
33 during critical illness and in general rehabilitation delivery. Reported outcomes have
34 included more coordinated inter-professional working and enhanced delivery of appropriate
35 patient care [44 48 49].
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52 It is interesting to see that several of the themes of barriers and facilitators to ICU
53 rehabilitation are similar to previous qualitative studies. This includes themes of safety [23
54 24 27 28 50], patient engagement [29], knowledge and experience [21-26] and team work
55 [20 22-25 27-29 50]. Patient reports of experiencing feelings of weakness and vulnerability
56 in this present study have also previously been identified [30 51] where their vulnerability
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3 may be explained, at least in part, by patients adjusting to being critically ill whilst having
4 little or no memory of their deterioration into critical illness [52]. In our study, clinicians
5 expressed differences in opinion over roles and responsibilities towards rehabilitation as
6 well as safety concerns for initiating treatment. Staff confidence in rehabilitation provision
7 may contribute towards differences in viewpoints and engagement, particularly towards
8 opinions on readiness of a patient to begin rehabilitation. This may be partially explained
9 through differences in personality traits between those more or less able to make pragmatic
10 concessions to adjust to the limitations of the working environment to ensure reasonable
11 care is delivered and to tolerate greater variability in acceptable target physiological
12 observations[53]. This would therefore represent an important factor to address with staff
13 when overcoming barriers to rehabilitation, for example, to achieve the paradigm shift
14 suggested by some participants to enable clinicians to address anxiety in relation to control
15 over physiological parameters.
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18 This study has added to previous knowledge in several ways. Interestingly and perhaps
19 surprisingly, less clinical experience was highlighted as a potential facilitator of
20 rehabilitation. Some therapists reported that more inexperienced nurses have received
21 recent training in rehabilitation and one therapist cited enthusiasm as more important than
22 experience. Additionally, perceptions of the content of rehabilitation were notable. Some
23 viewed rehabilitation as being limited to sitting in a chair. This can contribute to a limited
24 scope of rehabilitation practice [26] and may have contributed to the lack of rehabilitation
25 culture reported by some participants in this study. The occupational therapists emphasised
26 the inclusion of personal care activities as part of ICU rehabilitation delivered at any point in
27 the day by any profession, to facilitate a more positive rehabilitation culture. This is
28 supported by Laerkner, et al. [54] who compared the views of nurses and patients in
29 Denmark, and found nurses recommended incorporating familiar activities into
30 rehabilitation and patients emphasised the importance of empathy and compromise from
31 clinicians. Whilst patients in this present study agreed with Laerkner's recommendations of
32 clinician-patient communication, they also emphasised that at times, a more assertive
33 approach from clinicians in encouraging rehabilitation is desirable.
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57 The findings from this study focus us to create a patient-centred interdisciplinary approach
58 to rehabilitation. This involves considering how clinicians communicate with patients and
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3 broadening the definition of rehabilitation to include functional tasks that are meaningful to
4 patients. Furthermore, broadening delivery of rehabilitation to a 24-hour holistic approach
5 that includes family members[55-57], with a focus on prioritising patient-reported
6 motivators of independence and dignity and to progress back towards normality. Facilitating
7 this change in a multifaceted ICU environment would benefit from using implementation
8 and improvement science methodology, where co-design by ICU clinicians from different
9 professions, as well as service users can be employed. This change in practise should be
10 evaluated not only in terms of whether it improves rehabilitation delivery without impacting
11 patient safety, but also in terms of how these changes influence other ICU procedures and
12 working practices [58].
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22 Limitations of this study include the potential for poor recall from patient or relative/carer
23 participants as the time from ICU admission to interview was not recorded[52 59]. However,
24 as participants were usually recruited at their first ICU follow up appointment, this was
25 unlikely to be an extended time. Furthermore, language limitations of some participants
26 sometimes made it difficult to discern the exact point they were making during analysis,
27 therefore although this demonstrates diversity within the sample, some finer detail may
28 have been lost. The method of approach may have meant that more patients actively
29 engaged in the issues being evaluated were recruited. Those patients not attending follow
30 up appointments may have had different opinions. Pragmatic restrictions meant few family
31 members were recruited and more patients who had experienced one of the ICU sites were
32 involved. Finally, the application of these findings to other areas should consider that
33 participants were included from sites in one city.
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45 In conclusion, this exploration of a range of clinician and patient perspective suggested a
46 patient-centred, interdisciplinary approach to implementing ICU physical rehabilitation.
47 These findings constitute a starting point for optimising rehabilitation delivery through
48 improvement and implementation science.
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4 North West London Research Symposium for Health Professions 2018.
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24 **Competing interests statement**

25
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39 **Author contributions**

40
41 HRW, SJB, CMA and ACG contributed to the conception and planning of this work. HRW, CN,
42 MJ, SJB, CMA and ACG contributed substantially to the design of this work. HRW carried out
43 recruitment of participants with assistance from SJB. HRW also completed data collection
44 and CN, MJ, SJB, CMA and ACG advised on the conduct of the study. HRW had main
45 responsibility for carrying out analysis; MJ, CN and CMA assisted in checking development of
46 themes and HRW, CN, MJ, SJB, CMA and ACG advised on interpretation of data. HRW
47 drafted this report, and all authors revised it critically for important content and approved
48 the final published version. All authors are accountable for the accuracy and integrity of the
49 work.
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58 **Ethics approval**

This study involves human participants and was approved by the London – Bloomsbury Research Ethics Committee (17/LO/0362). Participants gave informed consent to participate in the study before taking part.

Data availability statement

No data are available.

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Consolidated criteria for reporting qualitative research checklist

Adapted from: TONG, A., SAINSBURY, P. & CRAIG, J. 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*, 19, 349-57.

| Topic | Item no. | Guide questions/ descriptions | Reported on page no. |
|--|----------|--|----------------------|
| Domain 1: Research team and reflexivity | | | |
| Personal Characteristics | | | |
| Interviewer/facilitator | 1 | Which author/s conducted the interview or focus group? | 6 |
| Credentials | 2 | What were the researcher's credentials? E.g. PhD, MD | 6 |
| Occupation | 3 | What was their occupation at the time of the study? | 6-7 |
| Gender | 4 | Was the researcher male or female? | 6 |
| Experience and training | 5 | What experience or training did the researcher have? | 6-7 |
| Relationship with participants | | | |
| Relationship established | 6 | Was a relationship established prior to study commencement? | 6-7 |
| Participant knowledge of the interviewer | 7 | What did the participants know about the researcher? e.g. personal goals, reasons for doing the research | 6-7 |
| Interviewer characteristics | 8 | What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic | 6-7 |
| Domain 2: study design | | | |
| Theoretical framework | | | |
| Methodological orientation and Theory | 9 | What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis | 4 |
| Participant selection | | | |
| Sampling | 10 | How were participants selected? e.g. purposive, convenience, consecutive, snowball | 5 |
| Method of approach | 11 | How were participants approached? e.g. face-to-face, telephone, mail, email | 5 |
| Sample size | 12 | How many participants were in the study? | 8 |
| Non-participation | 13 | How many people refused to participate or dropped out? Reasons? | 8 |
| Setting | | | |
| Setting of data collection | 14 | Where was the data collected? e.g. home, clinic, workplace | 6 |
| Presence of non-participants | 15 | Was anyone else present besides the participants and researchers? | 6 |
| Description of sample | 16 | What are the important characteristics of the sample? e.g. demographic data, date | 9-10 |
| Data collection | | | |

| | | | | |
|----|--|----|---|-------------------------------|
| 1 | Interview guide | 17 | Were questions, prompts, guides provided by the authors? Was it pilot tested? | 6 |
| 2 | | | | |
| 3 | Repeat interviews | 18 | Were repeat interviews carried out? If yes, how many? | 6 |
| 4 | | | | |
| 5 | Audio/visual recording | 19 | Did the research use audio or visual recording to collect the data? | 6 |
| 6 | | | | |
| 7 | Field notes | 20 | Were field notes made during and/or after the interview or focus group? | 7 |
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| 9 | Duration | 21 | What was the duration of the interviews or focus group? | 8 |
| 10 | | | | |
| 11 | Data saturation | 22 | Was data saturation discussed? | 5-6 |
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| 13 | Transcripts returned | 23 | Were transcripts returned to participants for comment and/or correction? | 6 |
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| 15 | Domain 3: analysis and findings | | | |
| 16 | Data analysis | | | |
| 17 | Number of data coders | 24 | How many data coders coded the data? | 7 |
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| 19 | Description of the coding tree | 25 | Did authors provide a description of the coding tree? | Supplementary material |
| 20 | | | | |
| 21 | Derivation of themes | 26 | Were themes identified in advance or derived from the data? | 7 |
| 22 | | | | |
| 23 | Software | 27 | What software, if applicable, was used to manage the data? | 7 |
| 24 | | | | |
| 25 | Participant checking | 28 | Did participants provide feedback on the findings? | 5-6 |
| 26 | | | | |
| 27 | Reporting | | | |
| 28 | Quotations presented | 29 | Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. participant number | 11-17, supplementary material |
| 29 | | | | |
| 30 | Data and findings consistent | 30 | Was there consistency between the data presented and the findings? | 10-18, supplementary material |
| 31 | | | | |
| 32 | Clarity of major themes | 31 | Were major themes clearly presented in the findings? | 10-18, supplementary material |
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| 34 | Clarity of minor themes | 32 | Is there a description of diverse cases or discussion of minor themes? | 10-18 |
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Supplemental file 2

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7 1. Patient / relative / carer topic guide.
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13 2. Initial thematic framework
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19 3. Table with summary of themes, sub-categories and verbatim quotes with participant numbers
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Interview topic guide: Patient representative

Introduction:

- We value your opinions/what you think about these questions; there's not necessarily a right or wrong answer; it's not a test.

Examples of general probes that may be used

- Tell me more about that.
- Why do you think that?
- Have you got any examples?

If unable to answer open question:

- Some people have said this ... [e.g. a known barrier from the literature if not already mentioned – see below for specific examples] ...what do you think?

If participant unable to define early mobilisation:

- We are defining early mobilisation as something the patient does with 'their own muscle strength and control' including activities such as:
 - Moving in bed
 - Exercises
 - Sitting on the edge of the bed,
 - Standing
 - Marching on the spot,
 - Transferring from bed to chair
 - Walking...

...all whilst patients are on intensive care.

Interview questions

General questions:

1. Please tell me about your experience on the ICU.

2. Please tell me about physiotherapy and mobilisation (moving around and getting up and out of bed) on the ICU.
 - a. What you would think of as early mobilisation?
 - b. What early mobilisation did you do? How often did you do it?
 - c. How was it decided that it was the right time for you to start mobilising on the ICU?

3. Do you think that early mobilisation was carried out enough?

Focused questions:

4. When you were asked if you wanted to mobilise, did you have any concerns over risks or problems that might occur?
Potential question-specific prompts: not being well enough; fall; lines and drains/breathing tube falling out.

5. Was there anything that stopped or delayed you from mobilising on the ICU?

Potential question-specific prompts: Feeling too unwell; lines and tubes; not enough staff.

6. What kind of things stopped mobilisation from happening more often on the ICU you were on?

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Potential question-specific prompts: Not a priority; team did not work together; team did not have enough teaching.

7. Why do you think the staff on you ICU wanted you to mobilise and what do you think the benefits were?

Example of potential question-specific prompts: Physical benefits; leave ICU sooner, prevent long-term complications.

8. In your experience, what things helped you to mobilise on the ICU?

Potential question-specific prompts: Different professions working together; feeling well.

9. What kind of things do you think could be improved or changed to help mobilisation to happen more often on your ICU and to overcome some of the problems you mentioned earlier?

Potential question-specific prompts: Better team communication; staff getting more teaching.

10. This question will explore other areas that previous interviews have brought up as important: e.g. other people have mentioned this... what do you think?

11. Is there anything else you'd like to say about what stops early mobilisation on the ICU and what could make it happen more often?

Initial thematic framework.

BARRIERS

1. Perceived risk of mobilising certain patients [SAFETY/RISK]

- 1.1 Airway and attachments
- 1.2 Patient instability
- 1.3 Patient type
- 1.4 Patient cognitive state
- 1.5 Patient medical status
- 1.6 Clinicians' perception of readiness to mobilise
- 1.7 Other

2 Patient's or their family member's reluctance for mobilisation

- 2.1 Clinician opinion of patient's or their family member's reluctance for mobilisation
- 2.2 Patients not feeling ready or motivated for mobilisation
- 2.3 Poor communication from clinicians
- 2.4 Aspects of the ICU environment not promoting mobilisation to patients
- 2.5 Other

3 Team working and unit culture/staff experience/ resources

- 3.1 Culture/Lesser priority
- 3.2 Roles and responsibilities
- 3.3 Lack of leadership
- 3.4 Staff experience
- 3.5 Lack of knowledge
- 3.6 Lack of resources
- 3.7 Logistics/ Other interventions
- 3.8 Nurse environment e.g. HDU/toilet
- 3.9 Other

FACILITATORS

4 Practical changes to how mobilisation was carried out.

- 4.1 Patient and family engagement
- 4.2 Mob treatment specific/functional rehabilitation
- 4.3 Use of protocols to facilitate clinical implementation of mobilisation
- 4.4 Patient opinion on how clinicians should communicate with them.
- 4.5 Specific patient motivators

1 4.6 Equipment/environment
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3 4.7 Other changes/optimal practice
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7 **5. Improvements in team working and culture/clinician specific**

8 5.1 Leadership

9 5.2 Team Communication

10 5.3 Experienced staff

11 5.4 Improved staffing/resources

12 5.5 Other team working

13 5.6 Prioritise

14 5.7 Education

15 5.8 Other culture change
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21 **6. Patient characteristics that made it easier to mobilise**

22 6.1 Pre-morbid/general characteristics status

23 6.2 Acute/admission-related status

24 6.3 Other
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28 **7. Risks, benefits and other**

29 7.1 Risks

30 7.2 Benefits

31 7.3 Other/irrelevant
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| Table: Summary of themes and sub-categories | | | |
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| Themes | Sub-categories | Quote number | Participant quote |
| 1. Safety and physiological concerns | 1.1 Airway, lines and attachments | 1 | <i>"I can't think who, they said an intensive care patient looks like little spiders in a web, and I agree with it. Like literally they have got tubes and attachments out everywhere." (Therapist 1)</i> |
| | 1.2 Particular patient groups | 2 | <i>"...the types of patients we have have multiple and complex injuries, they're not straightforward patients to mobilise anyway..." (Therapist 3)</i> |
| | 1.3 Physiological instability or dependence on organ support | 3 | <i>"...it's mainly blood pressure related for me, or their resp[iratory] rate. If I don't think they're going to tolerate mobilising, and if it's going to cause more harm than good." (Therapist 2)</i> |
| | | 4 | <i>"So anybody who's on an inotrope vasopressor is, as far as I'm concerned, not safe to be mobilised... they're more likely to have a postural hypertension that would result in injury to them." (Doctor 2)</i> |
| | | 5 | <i>"...whilst in itself [vasoactive drugs are] often not a reason to prevent ongoing rehab especially in junior staff it's a significant source of anxiety of doubling or trebling the dose of a medicine to keep your blood pressure up, without some form of kind of very clear guidance and encouragement that this is okay and it will return to normal following [rehabilitation] treatment." (Nurse 5)</i> |
| | 1.4 Patient's ability to actively participate | 6 | <i>"And after that incident I think that was the first time I actually cried, because it hit me that "Yes, the nurses are right, I am not able to just get up and move like I would if I had been healthy," you know, so that was very traumatic for me..." (Patient 11).</i> |
| | | 7 | <i>"I think I would have felt very vulnerable anyhow, [be]cause suddenly you are just weak as a baby." (Patient 7)</i> |
| | | 8 | <i>"Their cognitive state is a massive thing as well. How alert are they if they've only just been woken up from sedation or if they've had a neurological event or, you know, whatever reason, that could affect their cognition." (Therapist 6)</i> |
| | 1.5 Clinician perception of readiness to begin rehabilitation | 9 | <i>"...the perception, [clinicians] might think that, because this patient is dependent on a particular type of organ support, this patient is not suitable for mobilisation. So these boundaries and barriers needs to be broken." (Doctor 3)</i> |
| | | 10 | <i>"I think it's probably the fear of the unwell patient, you know, we, they're in ITU therefore they must be the most unwell people in the hospital. And I think it's that kind of mentality and the fact we attach them to fifteen hundred things..." (Therapist 7)</i> |

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| | | 11 | <i>"...happy to cause no harm, or kind of, and no perceived harm by not mobilising someone but actively getting up and causing harm is a, always going to be a significant anxiety for staff..." (Nurse 5)</i> |
| | | 12 | <i>"We love keeping the numbers normal, we love the sense of security that we maintain as normal physiology as we can, so that is why, a junior nurse would be more worried if she gets any change in the patient's state after mobilisation..." (Doctor 1)</i> |
| | | 13 | <i>"...intensive care doctors and nurses may also be quite, well, I shouldn't say "quite" but there is a part in us that is controlling the situation and so, you know, trying to mobilise the patient may also be a bit of a paradigm shift in our own mind of, you know, this complete control over the situation and over this patient." (Doctor 4)</i> |
| | | 14 | <i>"...so we kind of reset our expectations about normality and that is doing some sort of exercise when they ambulate because it is – it is to a critically ill patient it is an exercise, that we may see some events happen and as long as it is the range of acceptance, we can just modify our targets, and continue to mobilise." (Doctor 1)</i> |
| 2. Patient participation and engagement | 2.1 Patient reluctance to participate in rehabilitation | 15 | <i>"...well I'm in ICU... you're having intensive care, don't rock the boat by making things worse by trying to get out of bed." (Patient 8)</i> |
| | | 16 | <i>"...there were times when I simply didn't want to do it... Depression, ... lack of energy, lack of spirits really ..." (Patient 7)</i> |
| | 2.2 Communication between patients and clinicians | 17 | <i>"I would say to any nurse or any staff working in ICU... keep up that reassurance with patients because it's quite a scary experience..." (Patient 8)</i> |
| | | 18 | <i>"[The consultant] pushed me beyond what I mentally thought was physically possible. I didn't believe that I could do that and of course, perhaps it's the nature of my personality, but I responded to that. Others may not have responded to that, I can't say." (Patient 3)</i> |
| | 2.3 Patient engagement in planning rehabilitation | 19 | <i>"So, alongside that, we've also made like goal setting sheets that can go up by the patient's bed, so then when they sit up, when they sit upright in bed, they can see them. I draw a smiley face when they've completed one..." (Therapist 2)</i> |
| 2.4 Including activities meaningful to patients | 20 | <i>"Looking at therapy in a slightly different way and finding an activity that's meaningful to [patients], whether that's personal care or leisure activities, and through that encouraging them to... engage in that activity and then helping them to see the therapeutic value of that." (Therapist 4)</i> | |
| 2.5 Identify key patient motivators | 21 | <i>"...if they can see what's in it for them, that they're gaining in dignity and all of that, they might cooperate more." (Relative 2)</i> | |

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| | 2.6 The role of family | 22 | <i>"I remember the first time I took a few steps, the nurse said to me, "Well we'll do it with your husband," so my husband stood on one side and said, "We'll go for a walk with your husband," ... So it was most amazing feeling ever, you know? So everything, kind of in my head everything shut down; the nurse went away, the ward went away, it was just me and my husband going for a walk." (Patient 11)</i> |
| 3. Clinician experience and knowledge | 3.1 Amount of experience and support | 23 | <i>"I've had instances where it's mostly been junior people and it's terrifying. But for someone then to have a senior position helping you, that's so much better." (Nurse 2)</i> |
| | 3.2 Lack of training, knowledge and skills | 24 | <i>"It doesn't happen because... we are not aware enough yet how important it is, or how much difference it could make, so it's not embedded in our thinking and in our behaviour well..." (Doctor 4)</i> |
| | 3.3 Interdisciplinary team education and training | 25 | <i>"The education as well is important because you need to get people to understand what they're doing and to value it, so that they do it with passion and with skill." (Doctor 1)</i> |
| 4. Teamwork | 4.1 Team culture and attitudes | 26 | <i>"But a lot of it's just to do with the attitude of the individual staff member, how proactive they are and how much they believe in mobilisation as a kind of key thing" (Nurse 5)</i> |
| | | 27 | <i>"...I think the consultant's role is very important and it doesn't just include saying, "Mobilise the patient". It includes making sure that mobilisation happens and making sure that the team are, like every single member of the team is comfortable and understands the decision, and the risks related to it and understands that I am there to back them up if something happens." (Doctor 1)</i> |
| | 4.2 Perception of roles and responsibilities | 28 | <i>"I've found that it's taken a long time for me to be accepted and for them to actually accept my opinion might be right..." (Therapist 2)</i> |
| | | 29 | <i>"I always felt like it was, it was very much seen it was the physio job to do anything related to moving the patient so even getting them out of bed." (Therapist 7)</i> |
| | | 30 | <i>"...good teamwork is really helpful, and actually a really good symbiotic relationship between the nursing staff and the therapy staff is really key." (Therapist 4)</i> |
| | 4.3 Definition and delivery of rehabilitation | 31 | <i>"...mobilisation for me in ITU is hoisting somebody into a chair." (Nurse 4)</i> |
| 32 | | <i>"...rehabilitation is not, you know, 20 minutes with the physio or the OT every day. Really good rehabilitation is a 24 hour approach, and that – part of that is positioning a patient in bed. Part of that is ensuring the patient gets the right nutrition as well as looking at the actual physical things that they're doing." (Therapist 4)</i> | |
| 33 | | <i>"...a different mentality within intensive care and to think, well actually, you know, we need to begin the rehab process all together from day one, and if a patient can be encouraged to do something they should be given the time and the opportunity to do that." (Therapist 4)</i> | |

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| | 4.4 Staffing and logistics | 34 | <i>"...you start breaks at 9.30, 10.00. You finish the breaks about 12.00,1.00, so then it's not until the afternoon that people are free to help." (Nurse 2)</i> |
| 5. Equipment and environment | 5.1 Rehabilitation equipment | 35 | <i>"...equipment wise. You know, it's the age old problem isn't it, more of it, better ways to fix it, more money, so we've got the equipment, you know, got backup hoists." (Therapist 7)</i> |
| | 5.2 ICU environment | 36 | <i>"there's just something about the environment which makes you think that you need to stay in the bed and that you shouldn't be moving around... whereas on a general ward, you don't want to be in the bed, you want to get out." (Patient 8)</i> |
| | | 37 | <i>"...you can see some bright lights and monitors, you can hear monitors going off, but you don't have the, "Crash, bang, wallops!" that you get in a general ward... but it's a capsule and a bubble, it's a weird feeling... "People think it's like being in a spaceship" and I thought, "That's such a good description" and that's how it did feel." (Patient 8)</i> |
| 6. Risks and benefits of rehabilitation on intensive care | 6.1 Clinician perception of risks | 38 | <i>"Falls, removal of lines and tubes and then causing bleeding, vasovagal episodes, it's actually a risky thing to mobilise an ITU patient, anything can go wrong..." (Nurse 3)</i> |
| | | 39 | <i>"I like mobilising patients. The more attachments the better... Because I like the challenge!" (Therapist 2)</i> |
| | 6.2 Patient perception of risks | 40 | <i>"I never felt scared, I felt that the physiotherapist that was orchestrating the movement was sort of holding on to me to begin with and I never felt I was going to fall down..." (Patient 1)</i> |
| | 6.3 Physical benefits | 41 | <i>"It might help their movement and I feel the more they mobilise the more their muscles are good. The more you make them sit out of the bed and stand they can stand on their feet better." (Nurse 1)</i> |
| | 6.4 Psychological benefits | 42 | <i>"...the important thing is you sense that you're not just lying there waiting to die. ...so you are... you are... coming back to being a human being that wants to live." (Patient 7)</i> |