

RISING NEED OF PHYSICAL REHABILITATION IN ICU

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ABSTRACT

This mini-review discusses the importance of physical rehabilitation in Intensive Care Units (ICUs) to mitigate physical, mental, and psychological problems among critically ill patients. Early and customised physical activities that encourage patient movement from in-bed activities to walking are highlighted. A systematic review of 60 trials (n = 5352) showed that physical rehabilitation improves physical function and reduces ICU stay duration compared to conventional treatment. Despite its benefits, physical therapy is underutilised due to perceived safety issues. Recommendations for effective physical rehabilitation include interprofessional collaboration, addressing specific hurdles, and utilising mobility equipment. Patients should be assessed daily for rehabilitation eligibility, and a proactive culture for mobilisation should be promoted. While physical therapy is generally safe, it requires balancing risks and benefits, especially for patients with extended ICU stays. Structured exercise routines and patient engagement are crucial during the ICU stay, and regular evaluation of mobilisation and physical activity outcomes is essential at ICU discharge and follow-up. The overall goal is to enhance patient recovery and independence, emphasising the need for early physical rehabilitation interventions.

Keywords: Physical rehabilitation; ICU mobility; Interprofessional collaboration; Patient engagement; Safety standards

INTRODUCTION

Guidelines advocate physical rehabilitation in intensive care units (ICUs) to lower the risk of physical, mental, and psychological problems. (1). This incorporates early, customised activities that encourage the physical movement of patients. Patients with critical illnesses gradually shift from in-bed activities to sitting, transferring to the chair beside the bed, and walking based on their stamina and tolerance, as measured by the ICU mobility scale. (2) A systematic review of 60 trials (n = 5352) found that physical rehabilitation improves physical function and reduces the duration of ICU stays relative to conventional treatment (3). Despite its numerous advantages, Physical therapy is underutilized in clinical practice due to its safety issues (4). We provide practical recommendations for promoting good physical rehabilitation in ICUs across all levels of care to prevent complications.

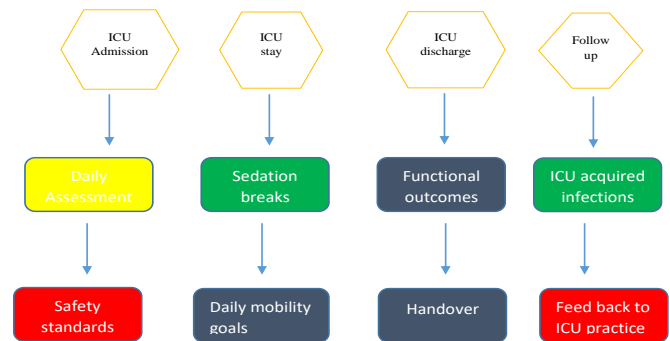
General recommendations

Physical rehabilitation necessitates a high level of collaboration. Successful implementation involves ongoing interprofessional interaction and cooperation, which may be improved through interprofessional rounds, defined protocols, and shared mobilisation goals (5) (6). Interprofessional mobility teams should encourage a culture of sharing information and experience among ICU specialists who prioritise physical rehabilitation. Quality enhancement programs are proposed to create a proactive culture for mobilisation. Addressing some specific hurdles to physical rehabilitation, such as excessive sedation or inadequate equipment, is also crucial (7). Mobility equipment for ventilated patients involves custom frames and backrests for sitting in balance on bed edges. Tilt tables, cycling, and robotic equipment can enhance therapy options, improve patient movement, and prevent staff injuries (8).

Recommendations at the time of ICU admission

Individuals at risk of ICU-acquired weakness should not have their physical rehabilitation delayed (9). After ICU admission, individuals

should be assessed daily for eligibility to begin rehabilitation. A uniform strategy is needed, such as removing default bedrest instructions and automatically referring patients to physiotherapy (10). The physical rehabilitation capability of patients is determined based on recognised safety standards, including low, moderate, and high risk for respiratory, cardiovascular, neurological, and other parameters (11). Physical rehabilitation is usually harmless and effective (12). Nevertheless, two new randomised controlled studies found a rise in complications (13).



● General recommendations ● Identify and analyze hurdles. ● Teamwork and mobility culture ● shared knowledge and skills

Figure 1 Shows the Recommendations for successful physical rehabilitation throughout the continuum of care.

The observed occurrences were largely transitory, like cardiorespiratory variations that occurred infrequently (<1% of 696 events) and resulted in little patient injury (0.1% of all individuals) (14). A meta-analysis found no difference between physical rehabilitation and conventional care in terms of adverse events (RR

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1.09, 95% confidence interval (CI) 0.69–1.74] or mortality [RR 0.98, 95% CI 0.87–1.12] (15). Immobility has been linked to adverse health outcomes.

Clinicians should weigh the risks and advantages of immobility and mobilisation when making treatment choices. Patients with extended ICU stays who are stable are likely to gain the most significant benefits from physical therapy (16). Individuals with more severe illnesses are more prone to experience ICU-acquired complications (17). Research suggests that critically sick and weak patients might benefit from attaining increased mobility levels upon ICU discharge. However, younger patients, trauma, or middle-aged individuals may benefit more from prompt intervention (within 72 hours) (18).

Recommendations during the ICU stay

Higher degrees of mobilisation necessitate patient engagement. Physical therapy is most successful when combined with soothing breaks. (19). Integrating sedation breaks and physical therapy requires interprofessional interaction among physicians, nurses, and physical and occupational therapists. Their experience might benefit individuals with complicated rehabilitation needs during certain rounds to address problems and define treatment goals. Patients realise the significance of physical rehabilitation but often report fatigue as an essential barrier to physical therapy. Effective communication and continuity in care can increase patient trust and involvement. (20). Structured exercise routines that consider personal care, visits from relatives, individual requirements, and relaxation may help minimise fatigue. The appropriate frequency, intensity, and duration for physical rehabilitation remain unknown. The current recommendations include a gradual progression of functional workouts performed at least five days each week. (21). Clinicians track load and rest to provide adequate recovery between mobilisation sessions.

Recommendations for ICU discharge

To enhance mobilisation performance, regularly record and analyse both the level of mobilisation (e.g., employing the ICU mobility scale) and physical activity results. They play a crucial role in clinical handover, facilitating continued physical therapy and preventing delays in recovery. Physical function evaluations could indicate ICU complications and the requirement for continuing therapy following discharge. (22).

Recommendations for follow-up

Critical illnesses have far-reaching consequences outside the ICU setting. Providing concise records, communication, and assistance during transfers to the wards and beyond can improve patient recovery by aligning goals with continuing rehabilitation. Follow-up clinics after hospitalisation can assist in identifying and treating ICU-acquired problems, thereby benefiting ICU caregivers. Receiving feedback from patients may boost staff morale and help professionals improve medical care. Understanding ICU-acquired complications highlights the importance of early therapies, such as physical rehabilitation. (23).

Take home message

Physical rehabilitation decreases ICU complications, promotes independence in daily life, and decreases stay at the hospital. (3) Physical rehabilitation is underutilised in clinical settings. ICU physicians should prioritise increasing recovery through physical therapy rather than only focusing on survival. To promote physical rehabilitation, it is essential to identify appropriate individuals with defined safety standards, coordinate protocols based on evidence across professions, provide targeted sedation breaks, and regularly assess mobilisation efficiency and functional improvements at ICU discharge. Lastly, patient input should be considered during clinical practice to enhance ICU medical care.

Conclusion:

Physical rehabilitation in ICUs significantly reduces complications, enhances daily life independence, and shortens hospital stays. Despite its proven benefits, it remains underutilised in clinical practice. To improve recovery outcomes, ICU physicians should prioritise physical therapy alongside survival. This involves identifying suitable patients with clear safety standards, coordinating evidence-based protocols across professions, integrating sedation breaks, and consistently evaluating mobilisation efficiency and functional improvements. Incorporating patient feedback into clinical practice is essential for advancing ICU medical care and optimising rehabilitation strategies.

DECLARATIONS

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned.

Consent for publication

Approved

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CONFLICT OF INTEREST

The authors declared the absence of a conflict of interest.

AUTHOR CONTRIBUTION

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Conception of Study, Development of Research Methodology Design, Study Design, Review of manuscript, final approval of manuscript.

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Manuscript drafting.

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Coordination of collaborative efforts.

WAEEL GHALY ELMASRY

Study Design, Review of Literature.

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