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ORIGINAL RESEARCH

Exploring Early Mobilization Practices in Adult Intensive Care Units in Jordan: A Cross-Sectional Survey

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Background: Prolonged immobilization in critically ill patients in the intensive care unit (ICU) is associated with adverse health outcomes, such as ICU-acquired weakness (ICU-AW), pressure ulcers, and decreased cardiopulmonary function. Early mobilization has been shown to be an important intervention to mitigate these effects; however, there is limited information regarding its implementation in ICUs in Jordan. This study aimed to explore early mobilization practices in adult ICUs in Jordan and identify common strategies employed by healthcare professionals.

Methods: An observational, cross-sectional survey was conducted among healthcare professionals working in various ICUs across Jordan. A structured online questionnaire collected data on participants' demographics, patient selection criteria for early mobilization, and early mobilization practices. Descriptive and inferential statistics (Kruskal–Wallis, Mann–Whitney, Chi–square, and Fisher's exact tests) were used, with significance at $p < 0.05$.

Results: A total of 200 surveys were completed, primarily from physiotherapists (34.5%) and nurses (21%). The most common early mobilization strategies reported were positioning (19.3%), active mobilization (14.4%), and passive mobilization (13.1%). The majority of respondents combined early mobilization with secretion drainage activities. Respiratory stability was the most frequently cited criterion for determining patient eligibility. A significant proportion of respondents (36%) reported the absence of standardized protocols for early mobilization in their ICUs.

Conclusion: Early mobilization is recognized among healthcare professionals in Jordan as an essential practice in ICUs, but there are variations in its implementation and a lack of standardized protocols. These findings highlight the need for clear guidelines and training initiatives to support consistent practice. Future research should investigate barriers to early mobilization, particularly in high-risk populations, to improve outcomes in critically ill patients.

Keywords: early mobilization, exercise, healthcare professionals, intensive care unit

Introduction

Critical illness, which has been defined as "a state of ill health with vital organ dysfunction, a high risk of imminent death if care is not provided, and the potential for reversibility", is associated with an increased risk of mortality and morbidity.[1,2] It is associated with prolonged periods of immobilization, which may further deteriorate the already abnormal physiological state present in critically ill patients, such as multi-organ dysfunction, impaired gas exchange, and hemodynamic instability.[3] The intensive care unit (ICU) is where many people with critical illness receive healthcare, including individuals with conditions such as sepsis, acute respiratory distress syndrome, severe trauma, major surgeries, cardiac arrest, and multi-organ failure. It is

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estimated that more than 5 million patients are admitted the ICUs in the United States annually.[4] Prolonged bed rest has been linked with deleterious systemic changes, such as changes in the cardiovascular, respiratory, integumentary, neurologic, gastrointestinal, and hematologic systems.[5,6] Patients who spend prolonged periods of bed rest, such as those who suffer from neuromuscular weakness and those who are dependent on mechanical ventilators, may develop intensive care unit-acquired weakness (ICU-AW).[6] Even short periods (6 days to several weeks) of bed rest can be deleterious and affect every organ system in the body.[3,7,8] ICU-AW can affect as many as 40% of survivors from critical care.[9] It is characterized by symmetrical, generalized muscle weakness affecting limbs and respiratory muscles which cannot be attributed to causes other than critical illness.[10] The pathophysiology is not yet fully understood but involves complex structural and functional changes in both muscle fibers and neurons.[11] ICU-AW is associated with higher rates of extubation failure, longer lengths of stay in both the ICU and hospital, and increased healthcare utilization.[12,13] Owing to these poor outcomes, there has been a significant focus on early mobilization to prevent or reduce the severity of ICU-acquired weakness.[14]

Patient mobilization is a priority in the ICU setting and should be initiated as soon as possible. Early mobilization is defined as the intensification and early application (within the first 2--5 days of critical illness) of the physical therapy that is administered to critically ill patients.[15] It includes active mobilization, passive mobilization, a combination of them, and mobility.[16] Early mobilization is safe and feasible and improves a wide range of cognitive and physical outcomes in critically ill patients during recovery periods.[17–20] The evidence suggests that early mobilization is beneficial for improving muscle strength, decreasing ICU and hospital lengths of stay, and decreasing mechanical ventilation days and delirium.[16,21] Furthermore, early mobilization contributes to enhancing the quality of life of critically ill patients. Thus, early mobilization is considered a fundamental intervention for ICU patients and is provided by healthcare professionals, including physiotherapists, occupational therapists, nurses, respiratory therapists, and intensive care physicians.[22,23]

International recommendations, such as those from the European Respiratory Society and European Society of Intensive Care Medicine, strongly recommend early mobilization as a standard component of ICU care to improve patient outcomes.[24–26] However, the extent to which these evidence-based practices are implemented in Jordan remains unclear, highlighting the need for context-specific research to inform local clinical and policy decisions. The implementation of early mobilization may be affected by patient and institutional challenges, such as excessive sedation, medical instability, limited staffing, safety concerns, insufficient guidelines, and insufficient equipment.[27] In Jordan, healthcare professionals may deal with such challenges, which affects optimal healthcare delivery.[22] Al-Nassan et al suggested that insufficient staffing, inadequate training, and limited understanding of the role of physical therapy for ICU patients are among the barriers to ICU practices in Jordan.[28] To date, information on the interventions provided in ICU settings, such as early mobilization, in Jordan is scarce.[29] The absence of context-specific data may hinder the development of appropriate clinical protocols, potentially impacting patient outcomes and the overall quality of ICU care in Jordan. As such, an exploratory study will offer valuable insights into current practices related to early mobilization in ICUs in Jordan. By identifying gaps in knowledge and practice, the findings can guide future research, inform clinical guidelines, and support educational initiatives aimed at improving outcomes in critical care settings. Therefore, the current study aimed to explore early mobilization practices and strategies utilized by healthcare professionals in adult ICUs in Jordan.

Materials and Methods

Study Design

The current study was an observational, cross-sectional analysis of healthcare professionals working in ICUs in Jordan. Ethical approval to conduct this study was obtained from the Institutional Research Board (IRB) at the Hashemite University (IRB Number: 21/5/2022/2023). All participants provided informed consent prior to participation in the study.

Participants and Data Collection

Healthcare professionals working in an ICU setting in Jordan for at least 1 year were eligible to participate in the current study. This included intensive care physicians, physiotherapists, occupational therapists, nurses, respiratory therapists, cardiologists, general physicians, physical medicine and rehabilitation physicians, clinical pharmacists, and

anesthesiologists. Convenience sampling, carried out by the first author [AW] and a research assistant, was used to recruit participants. Healthcare professionals across all healthcare sectors in Jordan (ie, public, military, and private) encompassing specialties globally acknowledged for providing ICU interventions were recruited for the study. An official email, which included information about the study and the researchers, was sent to hospitals, clinics, and organizations to invite them to participate in the study. In addition, advertisements on social networks of relevant organizations and societies (eg, Facebook) were used to recruit potential participants. Further, contact details of healthcare professionals were obtained through professional networks and hospital directories. Those who were interested in participating in the study were provided with a link to an open online survey created via Google Forms. Potential participants were invited to complete the online survey, which took 10–15 minutes to complete. It consisted of a total of 4 pages and included information pertaining to 1) a description of the study, the researcher, and ethical approval; 2) the consent form; 3) demographic questions (6 items); and 4) items related to early mobilization practices (13 items). Potential participants were asked to provide their informed consent if they wished to participate in the study by selecting the following statement: I consent to participate in the research project, and the following has been explained to me: the research may not be of direct benefit to me; my participation is completely voluntary; my right to withdraw from the study at any time without any implications to me. The survey collected participants' information, including age, sex, profession, years of experience in the ICU, the ICU at which the participant works (eg, surgical ICU), and the highest academic degree.

The 13-item early mobilization practice survey, presented on a single page, was originally developed and used by Barros-Poblete et al to investigate early mobilization practices in Latin America.[22] The survey was reviewed by two leading experts in respirology and physiotherapy. Permission was obtained from the authors to use the English version of the survey, with minor modifications such as the addition of an item on baseline assessment, along with adjustments to wording and punctuation (Supplementary material 1). As healthcare education in Jordan is primarily conducted in English, the instrument was deemed appropriate for the target respondents without the need for formal translation or pilot testing. The items of the survey covered the following domains: clinical practice in each unit, patient selection criteria for early mobilization, outcomes, and subsequent follow-up. The answers for these domains were mandatory to increase the completeness of the data. The survey items were not randomized or adaptive, and the respondents were able to review and change their answers. Incentives were not offered to the participants. Data were collected from October 2023 to March 2024. Cookies were not used to assign a unique user identifier to participants, but data were screened for duplicate entries from the same user after the data were collected by examining response patterns, and demographic information to ensure each participant's data was unique and valid.

The checklist for reporting results of internet e-survey (CHERRIES) recommendations was followed to prepare, conduct and extract data from online surveys[30] (Supplementary material 2). The participants' responses were stored and managed in Microsoft Excel with all the data protected and kept strictly confidential, and each participant had an encrypted unique identifying number. Only the principal investigator and the research assistant had access to the collected information.

Statistical Analysis

Sample size calculation was performed via Cochran's methodology for cross-sectional surveys.[31] The calculation assumed a 95% confidence level ($Z = 1.96$), a highly conservative anticipated proportion of 50% ($p = 0.5$) to account for maximum variability in estimates, and a margin of error of ±7 percentage points (0.07) to ensure robust results. On the basis of these parameters, the minimum required sample size was calculated to be 196 respondents. Recruitment was concluded once participants from various healthcare sectors in Jordan and from all globally recognized specialties providing ICU interventions were included, and no additional participants were available. Descriptive statistics are reported as frequencies and proportions for categorical variables and means and standard deviations for continuous normally distributed variables. SPSS software (version 21) (IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp) was used for statistical analysis. The Kruskal–Wallis test, Mann–Whitney test, chi–square test and Fisher's exact test were used to report the differences in the examined variables. Alpha was set at 0.05.

Results

Demographics

We collected a total of 200 surveys from public, private, and military hospitals across the three regions (North, Middle, and South) of Jordan. The completion rate was 97% (200 out of 206 who accessed the survey link), and only the completed surveys were analysed. Most participants were males (62%), with an average age (SD) of 35 (7.5) years. No duplicate entries from the same participant were noted. Most respondents were from the public health sector (68.5%). The primary professionals who responded to the survey were physiotherapists (34.5%), followed by nurses (21%), respiratory therapists (20.5%), intensive care physicians (9%), and occupational therapists (8%).

The results revealed that the most common type of ICU was the combined medical ICU and CCU, with 70 respondents (35%). This was followed by the combination of the surgical ICU, medical ICU, and cardiac care unit (CCU), reported by 41 respondents (20.5%). Surgical ICUs alone had 40 respondents (20%), and a combination of medical and surgical ICUs was reported by 39 respondents (19.5%) (Table 1). The findings revealed a wide range in the number of beds in the surveyed health sectors, varying from a minimum of 3 to a maximum of 120 beds. The average number of beds was 18.2, with a standard deviation of 15.8.

Table 1 Participants' Characteristics

Characteristic		**Count (Percent) or Mean (SD)**
Age		35.1 (7.5)
Gender	Male	124 (62%)
	Female	76 (38%)
Profession	Physiotherapists	69 (34.5%)
	Nurses	42 (21%)
	Respiratory therapists	41 (20.5%)
	Intensive care physicians	18 (9%)
	Occupational therapists	16 (8%)
	Others	14 (7%)
	Cardiologists	8 (4%)
	Physical Medicine and Rehabilitation Physician	2 (1%)
	Clinical pharmacist	1 (0.5%)
	General physician	1 (0.5%)
	Anaesthesia resident	2 (1%)
Highest educational level	Diploma	24 (12%)
	Bachelor	144 (72%)
	Masters	24 (12%)
	Doctorate	8 (4%)
ICU type in which the participants work	Medical ICU	10 (5%)
	Surgical ICU	40 (20%)
	Medical and Surgical ICU	39 (19.5%)
	Medical ICU and CCU	70 (35%)
	Surgical ICU, Medical ICU, and CCU	41 (20.5%)
Working sector	Public	137 (68.5%)
	Military	29 (14.5%)
	Private	34 (17%)
Years of experience		8.3 (7.04)

Evaluation at Baseline

Regarding the baseline assessments conducted before initiating early mobilization in ICU patients, the most frequently mentioned outcome was "medical history" reported by 131 participants (12% of the responses), followed by "strength of lower extremities", reported by 103 respondents (9.4%), and complications related to "cognitive function and level of consciousness", as reported by 96 respondents (8.8%) (Table 2).

Interventions in the ICU

The results revealed that positioning was the most frequently used intervention in ICU settings, accounting for 19.3% of the reported practices, followed by passive mobilization (14.4%) and active mobilization (13.1%) (Table 3).

With respect to the positioning techniques used in the ICU, the most frequently used methods were positioning in bed (28.6%), sitting on the edge of the bed (21.1%), and standing up by the patients (13.3%) (Table 4). The most common patients involved in positional changes to an upright position were those on non-invasive mechanical ventilation (32.5%) and tracheostomized patients without mechanical ventilation (31.6%) (Table 5).

Interventions focused on respiratory care, such as respiratory muscle training and airway clearance techniques, were also prevalent, each accounting for approximately 13% of the reported practices (Table 3). We conducted chi-square tests along with post hoc pairwise comparisons via Bonferroni correction to adjust for multiple testing to compare the frequency of early mobilization interventions across various working sectors. Physiotherapists (n = 69) are significantly more frequently involved

Table 2 Baseline Evaluation Outcomes Before Initiating Early Mobilization

Outcome	Count (Percent)*
Medical history	131 (12%)
Strength of lower extremities	103 (9.4%)
Cognitive function and level of consciousness	96 (8.8%)
Strength of upper extremities	80 (7.3%)
Strength of inspiratory muscles	80 (7.3%)
Medications	77 (7%)
Pulmonary function	76 (7%)
Time on mechanical ventilation	69 (6.3%)
Presence of any contraindications.	59 (5.4%)
Field tests (6-minute walk test, shuttle walk test, endurance shuttle walk test)	58 (5.3%)
Dyspnea	53 (4.8%)
Fatigue	46 (4.2%)
Motivation and goals and Patients' expectations	39 (3.6%)
Functionality in activities of daily life	38 (3.5%)
Quality of life	37 (3.4%)
Depression	17 (1.6%)
Resistance on the bicycle	8 (0.7%)
Anxiety	6 (0.6%)
Delirium	5 (0.5%)

Notes: *Count represents the total number of participant responses that included the outcome, while percent denotes the proportion of that count relative to the total number of responses, expressed as a percentage.

Table 3 ICU Physiotherapeutic Interventions

Intervention	Count (Percent)
Positioning	156 (19.3%)
Passive mobilization	116 (14.4%)
Active mobilization	106 (13.1%)
Respiratory muscle training	105 (13.0%)
Manual and instrumental techniques for mucus secretion drainage	104 (12.9%)
Upper-limb muscle strength training (elastic bands, dumbbells, etc.)	79 (9.8%)
Functional activities (for example transfers, transfers, etc.)	54 (6.7%)
Resisted mobilization with manual resistance by the healthcare professional	33 (4.1%)
Passive or mechanically assisted mobilization	25 (3.1%)
Active mobilization mechanically resisted (for example, elastic band or bicycle)	20 (2.5%)
Neuromuscular electrical stimulation	10 (1.2%)

Table 4 Positional Changes Used in the ICU

Positioning and Changes of Position	Count (Percent)
Positioning in bed (supine, decubitus, turns, prone)	179 (28.6%)
Sitting on the edge of the bed	132 (21.1%)
Standing up by the patients	102 (16.3%)
Walking around the room or through the unit	91 (14.5%)
Sitting in an armchair	70 (11.2%)
Standing up assisted with a tilt table	39 (6.2%)
Marching stationary	13 (2.1%)

Table 5 Patients Involved in Upright Positioning

Patients	Count (Percent)
Patients with non-invasive mechanical ventilation	109 (32.5%)
Tracheostomized patients without mechanical ventilation	106 (31.6%)
Patients with endotracheal intubation without ventilation	39 (11.6%)
Tracheostomized patients with ventilation	36 (10.7%)
Patients with endotracheal intubation with mechanical ventilation	31 (9.3%)
Patients during dialysis	14 (4.2%)

in mobilization than are ICU physicians (n = 18) ($p = 0.004$) and nurses (n = 42) ($p = 0.002$). Furthermore, respiratory therapists (n = 41) significantly engage more frequently in interventions related to early mobilization than do nurses (n = 42) ($p = 0.03$). Significant differences in the implementation of early mobilization were observed when pairs of working sectors were compared. Early mobilization was implemented more frequently in public hospitals (n = 137) than in private hospitals (n = 34) ($p < 0.05$). In contrast, military hospitals (n = 29) utilized early mobilization less frequently than both public and private hospitals did ($p < 0.001$ and $p < 0.05$, respectively).

Professionals' Participation in the Rehabilitation Plan in the ICU

With respect to the professionals involved in ICU interventions, the participants indicated that respiratory therapists and physiotherapists are the healthcare professionals most involved in rehabilitation plans in the ICU, followed by nurses, pulmonologists, and intensivists. Professionals such as occupational therapists, dietitians/nutritionists, social workers, and psychologists had lower participation rates (Figure 1).

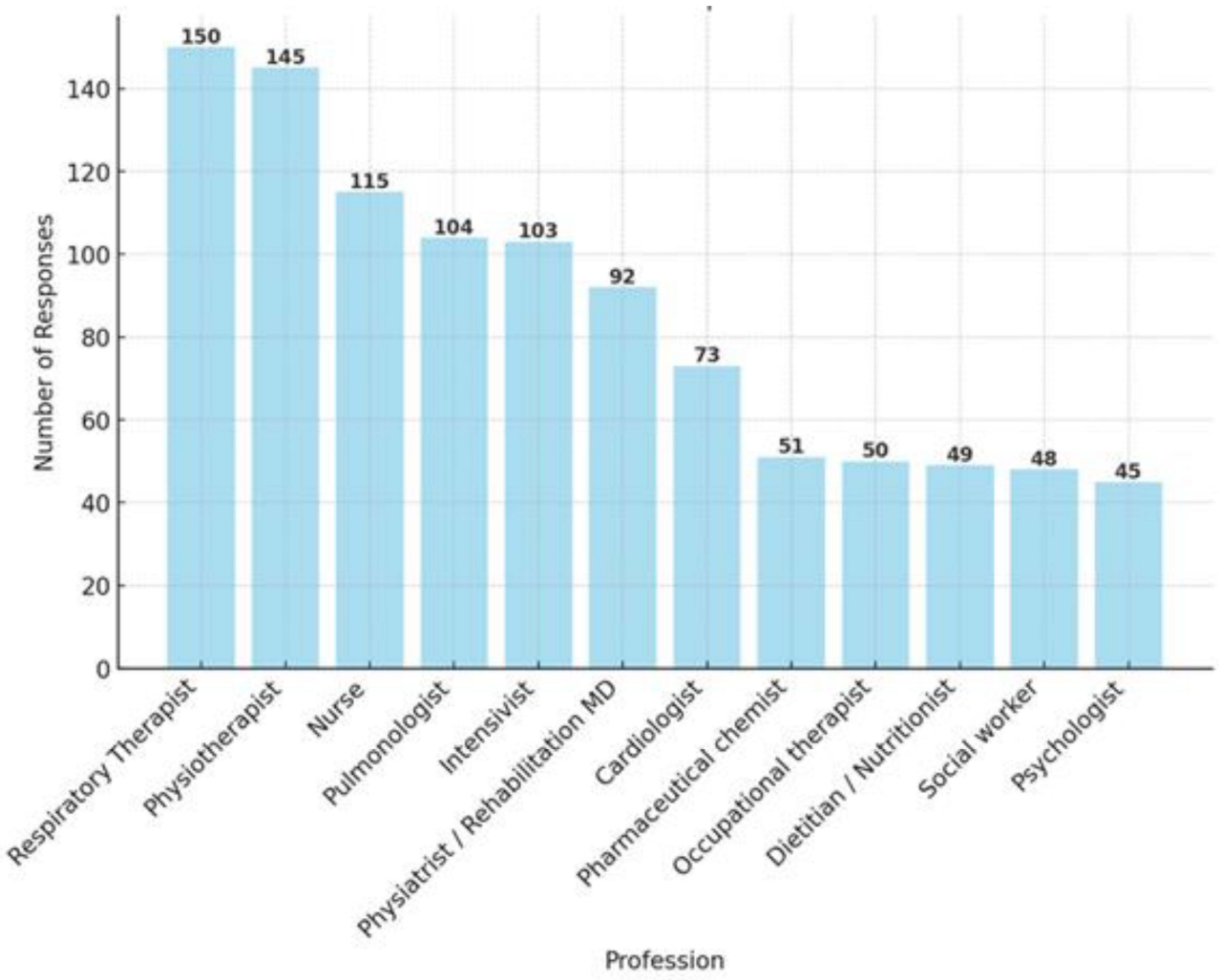

Figure 1 Professionals participating in the rehabilitation plan for patients in the ICU.

Practices

Approximately 72% of the respondents reported that they perform early mobilization interventions alongside secretion drainage activities, whereas 28% indicated that they carry out early mobilization interventions separate from secretion drainage activities.

Regarding the time spent on early mobilization activities, approximately one-third of our sample participants indicated that they spend 11–15 minutes per patient on a normal workday. Approximately 23% stated that the time is undetermined and depends on the patient's requirements. Other notable time allocations include 0 −10 minutes (19%) and 21–30 minutes (12.5%). There was a significant difference in the time allocated to early mobilization across various sectors ($p < 0.05$). Professionals in the military health sector ($n = 29$) spent more time (20 minutes or more) on early mobilization than those in the public sector did ($n = 137$) ($p < 0.05$). In contrast, professionals in the public sector dedicated 11–15 minutes to early mobilization, which was less than the time spent by those in other sectors. The correlation analysis between the number of beds and the time spent on early mobilization revealed a very weak negative correlation ($r = -0.071$).

A large percentage of respondents (42.5%) reported that early mobilization is initiated on the basis of specific patient conditions. Approximately 36% of the respondents indicated that there is no established protocol to initiate early mobilization and that the decision is made individually by each professional. A smaller portion (20.5%) stated that their unit has a protocol in place, which is strictly followed.

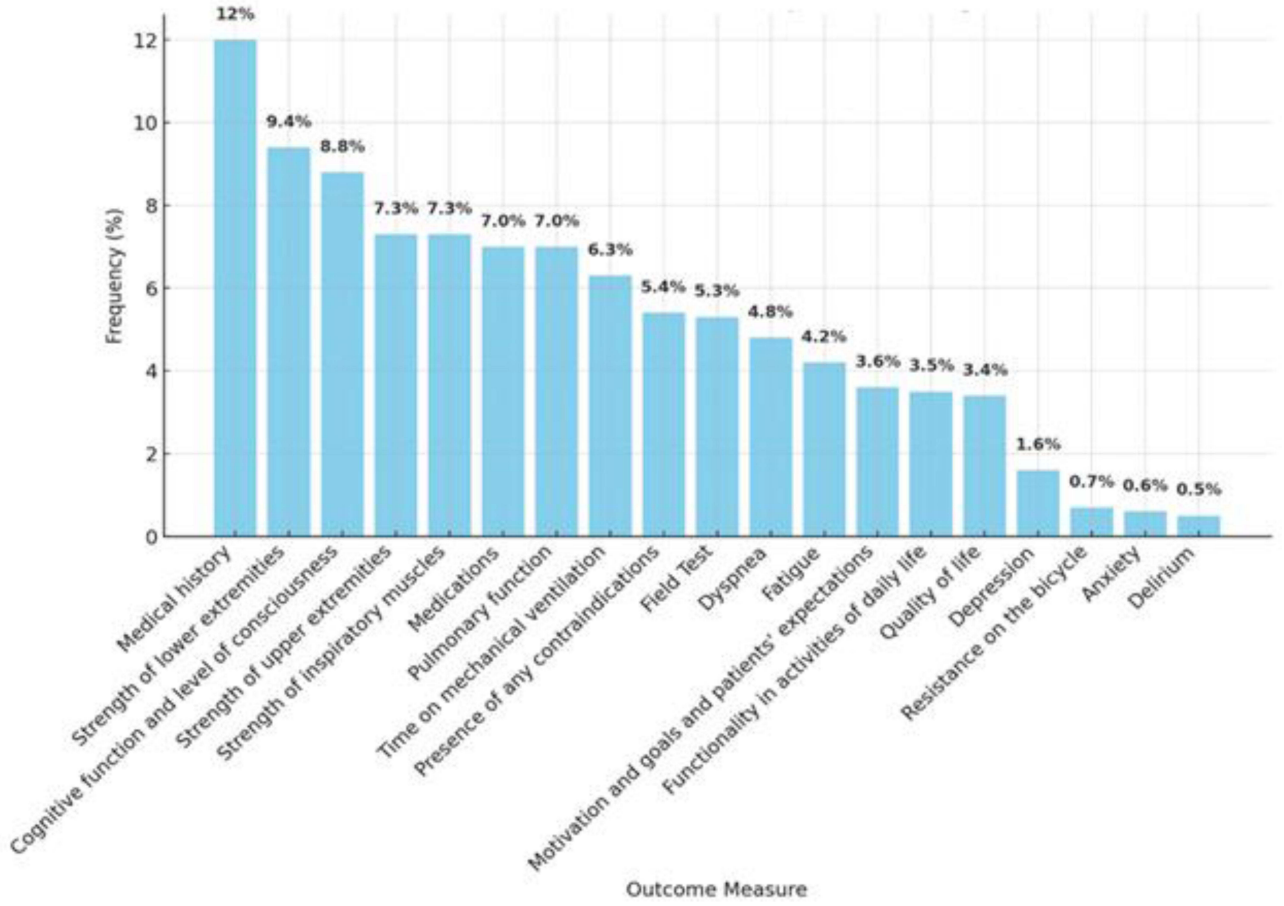

Figure 2 Outcomes used by professionals in the intensive care unit to assess patients' response to early mobilization.

Regarding the criteria used to determine stability and favourable conditions for early mobilization in the ICU, the most frequently cited criterion was respiratory stability, reported by 31.3% of the respondents. This was followed by neurological stability (27.7%) and hemodynamic stability (25.1%). Additionally, 13.3% of the respondents emphasized that appropriate exams (eg, diagnosis-specific exams) are crucial for initiating early mobilization.

The patient groups most frequently not involved in rehabilitation interventions in the ICU were those with metabolic diseases (12.1%), followed by patients with respiratory diseases (10.6%), cardiovascular diseases (10.5%), and abdominal postsurgical patients (10.3%).

Outcomes to Assess the Patient's Response to Early Mobilization

According to the respondents, the most important outcomes for evaluating a patient's response to early mobilization in the ICU included several key factors. Quality of life was highlighted by 9.5% of the respondents, followed by length of stay in the ICU (9.2%) and strength of the lower extremities (8.9%). Cognitive function and level of consciousness were also important, as noted by 8.8% of the respondents. Other significant outcomes included the strength of the upper extremities and inspiratory muscles (8.2% each), pulmonary function (7.5%), fatigue (7.1%), time on mechanical ventilation (7%), and dyspnea (6.8%) (Figure 2).

Discussion

This study explored early mobilization practices for critically ill adults in intensive care units across various types of hospitals in Jordan. The main finding of the study was that positioning, passive mobilization, and active mobilization are the most common rehabilitation strategies being implemented. The findings of the current study suggest that early

mobilization is a frequent practice in Jordanian ICUs, in accordance with the considerable body of evidence supporting its benefits.[32] Furthermore, these findings indicate that healthcare professionals in Jordan recognize the importance of early mobilization in combating the adverse effects of prolonged bed rest, such as muscle weakness and systemic complications.

With respect to healthcare professionals leading early mobilization interventions in the ICU, the participants in the study identified physical therapists as the primary contributors to rehabilitation plans, followed by nurses. These results are consistent with findings of a Canadian study, which also highlighted physiotherapists and nurses as the key professionals involved in early mobilization efforts within the ICU.[33] In fact, physiotherapists seem to mobilize their critically ill patients to a greater level than do nurses, suggesting the distinct roles and capabilities of physiotherapists in advancing early mobilization in critical care settings.[34]

Positioning the most frequently used early mobilization strategy in Jordanian ICU settings as suggested by our sample of participants. It has been demonstrated to prevent pressure injuries, reduce respiratory complications, increase lung volume, improve oxygenation, maintain proper body alignment, and facilitate secretion clearance.[35–38] Positioning in bed (including prone positioning) was reported by our participants as the most frequently used positioning strategy. Prone positioning has been demonstrated to reduce mortality.[39] It decreases the risk of atelectasis in dependent lung regions, enhances chest wall compliance, and improves air distribution within the lungs, thereby reducing intrapulmonary shunting.[38] Recently, guidelines on positioning and early mobilization in critically ill patients were published by Schaller et al.[25] The authors argued that the optimal dosage of mobilization and positioning, such as frequency and duration, for specific patient groups to achieve the best outcomes has not yet been clearly determined. Future research should focus on identifying patient-specific protocols for positioning and mobilization, considering individual clinical conditions.

Many of our participants reported engaging in both early mobilization and secretion drainage, but a significant proportion of them performed these interventions separately. This variance in practice may reflect differences in institutional protocols or individual clinical judgments, indicating a need for standardized pathways/protocols to ensure consistent and effective mobilization strategies. Interestingly, approximately one-third of our sample indicated that there are no established protocols in place to initiate early mobilization. Studies from other countries have reported similar findings of a low percentage of ICU units that implement protocols for initiating early mobilization.[22,27] The absence of established protocols for early mobilization may lead healthcare professionals to depend on individual patient assessments, potentially delaying mobilization beyond the recommended 24–72 hours after critical illness.[40,41] Although there is no consensus on a standardized protocol, evidence indicates that implementing a standardized mobilization protocol with a multidisciplinary approach, supported by strong leadership, while fostering a culture of quality improvement, can enhance patient outcomes, reduce ICU and hospital length of stays, and lower the occurrence of delirium.[20,23,42]

Our results revealed discrepancies in the implementation of early mobilization across different health sectors. For example, military hospitals use early mobilization less frequently than both public and private hospitals do. However, the duration of each early mobilization session in military hospitals was longer than that in the other sectors. A systematic review by Menges et al echoed this variability, revealing significant differences in the time allocated to early mobilization across various studies.[43] While some studies aligned with the time frames reported in our study,[44] other studies allocated longer intervals.[45,46] As our findings suggest, the time spent on early mobilization is not fixed and is largely dependent on the specific needs and conditions of each patient. Previous research has shown that although many physical therapists in Jordan have significant overall experience, a substantial proportion lack specific ICU experience, and only a small minority (4%) have received specialized postgraduate ICU training.[28] Public hospitals in Jordan have relatively higher ICU physical therapy staffing, yet barriers such as insufficient staff, inadequate training, and limited understanding of the physical therapist's role persist across sectors.[28] These factors likely contribute to observed variations in practice and underscore the importance of targeted policy, staffing strategies, and professional development initiatives to support consistent and effective early mobilization in ICU settings. Further investigation into the underlying reasons for these variations—such as resource allocation and patient demographics—is needed to better understand how organizational structures and priorities influence early mobilization practices. Additionally, exploring the impact of these differences on patient outcomes could provide valuable insights for standardizing and optimizing early mobilization protocols across all health sectors.

Our sample of participants suggested that those with metabolic diseases are the most frequently excluded patient groups from rehabilitation interventions in the ICU. This finding necessitates further investigation and calls for action, considering that an estimated 28% to 36% of ICU admissions involve individuals with obesity.[47,48] Metabolic syndrome and obesity are not contraindications for early mobilization; however, they present challenges for healthcare professionals in implementing this practice. The multidisciplinary team should explore strategies to reduce immobility in this group of patients.[49–51] Furthermore, identifying barriers to mobilization, determining the required staff, assessing the environmental context and resources, ensuring the presence of the necessary equipment and instruments for airway management in case of emergencies, and always having a contingency plan in place are strongly recommended before delivering early mobilization for individuals with obesity.[51,52]

The current study was the first to explore early mobilization practices in ICU settings among healthcare professionals in Jordan. The use of a structured and expert-reviewed questionnaire enhanced the content validity of the data collected. Additionally, the inclusion of participants from various hospital sectors (public, private, and military) across different regions of Jordan improves the representativeness of the findings.

Nonetheless, the study has several limitations. It utilized online surveys, which have limitations, including the potential for respondent bias.[53] This study employed convenience sampling, which may introduce selection bias by overrepresenting healthcare professionals who were more accessible or motivated to participate, potentially restricting the generalizability of our findings. We included various types of ICUs and rehabilitation strategies, which might differ on the basis of the patient population (eg, cardiac, oncological), the ventilatory support being used (eg, invasive or non-invasive), and the use of pharmacological or medical treatments (eg, dialysis). Our survey gathered data on the implementation of each strategy but did not track how many times each strategy was performed daily. Finally, we acknowledge that smaller sample sizes in some subgroups may affect the statistical power of certain comparisons and increase the risk of type I or II errors. Future studies with larger, more balanced samples are recommended to explore early mobilization practices in greater depth, as well as the barriers and enablers to their implementation.

Conclusions

This study highlighted the importance of early mobilization practices among healthcare professionals in Jordanian ICUs as a crucial intervention for critically ill patients. The findings demonstrate that early mobilization techniques are widely utilized, and there is a notable absence of standardized protocols guiding these practices. This inconsistency in implementation may hinder the potential benefits of early mobilization, emphasizing the need for established guidelines tailored to specific Jordanian healthcare settings. The findings underscore the importance of investing in staff training and developing institutional policies that support consistent and evidence-based early mobilization practices, ultimately contributing to improved patient outcomes in critical care.

Abbreviations

CCU, cardiac care unit; ICU, intensive care unit; ICU-AW, intensive care unit-acquired weakness; IRB, institutional research board; SD, standard deviation.

Data Sharing Statement

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

Ethics Approval and Informed Consent

Ethical approval to conduct this study was obtained from the Institutional Research Board (IRB) at Hashemite University (IRB Number: 21/5/2022/2023). All participants provided informed consent prior to participation in the study.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors report no conflicts of interest in this work.

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