Original article

Multiprofessional perceptions and barriers to early mobilization in intensive care: a study at a university hospital

Percepções multiprofissionais e barreiras à mobilização precoce na terapia intensiva: um estudo em um hospital universitário

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ABSTRACT | INTRODUCTION: Hospitalization often causes mobility difficulties and hinders daily activities. Progressive mobilization of patients in intensive care units (ICUs) is safe and linked to better clinical and functional outcomes. **OBJECTIVE:** To assess the perception of a multidisciplinary team in the ICUs of a university hospital regarding early mobilization (EM). **METHODS:** A prospective observational study was conducted using data collected from professionals and students in the ICU of Clementino Fraga Filho University Hospital at the Federal University of Rio de Janeiro between June and December 2019. Data on EM perception were collected using a questionnaire. Descriptive statistics and Fisher's exact tests were used to analyze the differences between the professional categories. **RESULTS:** In comparison to physiotherapists (88%), a smaller percentage of physicians (37.5%) and nurses (50%) reported that patients on mechanical ventilation (MV) are mobilized within 48 hours (P<0.05). Additionally, a smaller percentage of physicians and nurses reported that their workload was sufficient to mobilize patients at least once a day (62.5% vs. 62.5% vs. 96%; P<0.05). Physiotherapists reported more frequently than physicians that "patients undergoing procedures" were a barrier (57.7% vs. 18.7%; P<0.05). Conversely, regarding mechanical ventilation (MV), physicians identified this barrier more frequently (43.7% vs. 7.7%; P<0.05). There was overall agreement on the benefits of EM (>80%), with the main perceived barriers being the availability of professionals (58%), the clinical condition of patients (55%), and patients undergoing procedures (45%). **CONCLUSION:** In a university hospital without an established EM protocol, the multidisciplinary team showed satisfactory knowledge and perceptions of EM. However, creating institutional protocols and guidelines is essential to engage multidisciplinary teams in implementing EM and overcoming barriers.

KEYWORDS: Physical Therapy Modalities. Exercise Therapy. Intensive Care. Rehabilitation. Patient Care Team.

RESUMO | INTRODUÇÃO: A hospitalização frequentemente causa dificuldades de mobilidade e compromete as atividades da vida diária. A mobilização progressiva de pacientes em unidades de terapia intensiva (UTI) é segura e está associada a melhores resultados clínicos e funcionais. **OBJETIVO:** Avaliar a percepção da equipe multiprofissional das UTIs de um hospital universitário quanto à mobilização precoce (MP). **MÉTODOS:** Foi realizado um estudo prospectivo e observacional com dados coletados de profissionais e estudantes da UTI do Hospital Universitário Clementino Fraga Filho da Universidade Federal do Rio de Janeiro entre junho e dezembro de 2019. Os dados sobre a percepção da MP foram coletados por meio de questionário. A estatística descritiva e o teste exato de Fisher foram utilizados para analisar as diferenças entre categorias profissionais. **RESULTADOS:** Em comparação aos fisioterapeutas (88%), um percentual menor de médicos (37,5%) e enfermeiros (50%) relataram que os pacientes em ventilação mecânica (VM) são mobilizados em 48 horas (P<0,05). Além disso, um percentual menor de médicos e enfermeiros reportaram que a sua carga de trabalho era suficiente para mobilizar os pacientes pelo menos uma vez por dia (62,5% vs. 62,5% vs. 96%; P<0,05). Os fisioterapeutas relataram, com maior frequência que os médicos, que "pacientes em procedimentos" eram uma barreira (57,7% vs. 18,7%; P<0,05). Já em relação à ventilação mecânica (VM), os médicos identificaram essa barreira com maior frequência (43,7% vs. 7,7%; P<0,05). Houve concordância geral sobre os benefícios da MP (>80%), sendo as principais barreiras percebidas a indisponibilidade de profissionais (58%), a condição clínica (55%) e pacientes submetidos a procedimentos (45%). **CONCLUSÃO:** Em um hospital universitário sem protocolo de MP estabelecido, a equipe multidisciplinar apresenta percepção satisfatória sobre a MP. Contudo, a criação de protocolos e diretrizes institucionais é essencial para engajar a equipe na implementação da MP e na superação de barreiras.

PALAVRAS-CHAVE: Modalidades de Fisioterapia. Terapia por Exercício. Terapia Intensiva. Reabilitação. Equipe Multiprofissional.

Submitted Oct. 26th, 2023, Accepted July 31st, 2024,
Published Aug. 20th, 2024
J. Physiother. Res., Salvador, 2024;14:e5448
http://dx.doi.org/10.17267/2238-2704rpf.2024.e5448 | ISSN: 2238-2704
Assigned editors: Janaína Ferreira, Cristiane Dias

How to cite this article: Mendes FS, Menezes SLS, Orsini M, Guimarães FS. Multiprofessional perceptions and barriers to early mobilization in intensive care: a study at a university hospital. J Physiother Res. 2024;14:e5448. http://dx.doi.org/10.17267/2238-2704rpf.2024.e5448

1. Introduction

Hospitalization often leads to mobility difficulties and challenges in performing daily activities for individuals, even when treating their illness shows promising results.[1] The development of generalized weakness in critically ill patients is a common complication that significantly affects patients admitted to the intensive care unit (ICU).[2] Many of these patients experience long-lasting physical disabilities even after being discharged from the hospital, with approximately half of them unable to return to their regular work routines due to factors like fatigue, weakness and compromised functional abilities.[1] In addition to the underlying clinical condition, several factors contribute to weakness, including systemic inflammation, certain medications, prolonged mechanical ventilation and extended periods of immobility.[2]

Historically, critically ill patients have not been considered suitable for early mobilization (EM) because of concerns about potential complications or their dependence on life-supporting equipment. However, recent evidence contradicts these beliefs and has shown that EM for ICU patients is safe and feasible.[3] Early mobilization encompasses a range of therapeutic activities, such as in-bed physical exercises, postural transfers, sitting at the bedside, standing and walking.[4] Evidence suggests that progressively mobilizing patients in the ICU, beginning within 48 hours of hospitalization and continuing throughout their stay, is safe and associated with a low incidence of adverse events. It also has significant benefits for functional capacity, reduces the duration of mechanical ventilation, and shortens hospital stays.[5] Thus, patient mobilization is crucial for successfully transitioning from the hospital to the patient's home.[6]

Despite its potential benefits, EM protocols are not yet widely implemented in the ICU setting.[7] Effective implementation of EM depends on the patient's clinical and functional status and the healthcare environment's structural and cultural aspects.[8] Therefore, identifying modifiable factors is the first step toward enhancing hospital care.[9] In this context, understanding the barriers the professionals perceive when implementing practice changes is essential for improving healthcare quality.[1] According to the conceptual framework of Cabana et al. (1999), for clinical practice principles to impact patient outcomes, they must first pass through healthcare professionals' knowledge, attitudes and behaviors. The barriers to early mobilization can be associated with the patient, the healthcare facility's structure, or the ICU's culture, including issues related to processes, coordination, and the absence of straightforward task and responsibility distribution.[8]

While studies in other countries have aimed to identify these barriers at local and national levels, it was in a local context that research brought these issues to the forefront.[10] Given the many benefits associated with early mobilization, it is essential to understand why scientific evidence is not consistently integrated into clinical practice and what multidisciplinary barriers exist. Thus, this study aimed to assess the knowledge of multidisciplinary team professionals regarding early mobilization and identify the perceived barriers to its implementation in the intensive care units of a university hospital.

2. Methods

This prospective observational study was conducted at the general and cardiac intensive care units of Hospital Universitário Clementino Fraga Filho - HUCFF (Clementino Fraga Filho University Hospital) within the Universidade Federal do Rio de Janeiro - UFRJ (Federal University of Rio de Janeiro).

This project was approved by the Research Ethics Committee of Clementino Fraga Filho University Hospital and the Faculty of Medicine of the Federal University of Rio de Janeiro (CAAE 24406819.0.0000.5257). At the time of this research, there was no established early mobilization protocol in the units, and physiotherapists were available round the clock.

The study included individuals of both genders, aged 18 years and above, who were professionals or undergraduates working within the intensive care units at HUCFF. At the time of data collection, 81 professionals from different categories (Medicine, Nursing, Nursing Technicians, Physiotherapy) and 16 Physical Therapy undergraduate students were working in general and cardiac ICUs (total = 97). All students had undergone the undergraduate discipline "Critical Care Physiotherapy" and were under the supervision of qualified preceptors. Individuals who did not have a minimum of 2 months of direct experience working with ICU patients in the respective sectors were excluded. Participants who agreed to participate in the study completed a questionnaire comprising sixteen (16) questions related to early mobilization (PM). This questionnaire collected personal information, including their training background and duration of experience in intensive care. It also assessed their knowledge about early mobilization and their perceived barriers. The questionnaire's introduction included the following definition of early mobilization: "Early mobilization includes progressive therapeutic activities initiated within 48 hours of a patient's hospital admission, such as in-bed motor exercises, postural transfers, sitting at the bedside, standing, and walking."[4]

The questionnaire addressed professionals' perceptions and knowledge of early mobilization and the primary barriers documented in the literature. Responses were graded using a Likert scale with five levels: "totally agree, agree, neutral, disagree and totally disagree," or "extremely important, very important, somewhat important, not very important and unimportant." The final question on the questionnaire was related to the barriers perceived by the professionals. This question presented a non-hierarchical list of potential barriers that they considered to have the greatest impact on not implementing early mobilization. Participants could select multiple alternatives and add barriers not listed in the questionnaire under the "others" option.

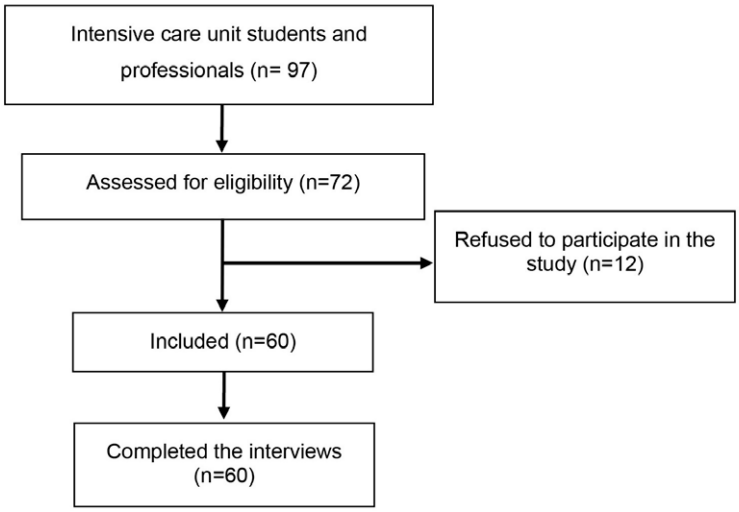
The questionnaire was administered within professionals' specific work sectors (general and cardiac ICU) to simplify completion and data collection. Participants were given printed questionnaires with instructions on completing them on the spot. This approach allowed the researcher to address any questions or concerns regarding interpretation and to provide necessary guidance. It also ensured that participants did not discuss the questionnaire or their responses with others in the work sector.

Descriptive statistics were used to outline participants' profiles. Likert scale responses were presented in terms of absolute frequency and proportions, aimed at assessing the level of agreement and degree of importance ascribed by individuals to various questions. Data were recorded and analyzed using Microsoft Excel. Responses scoring 4 and 5 on the Likert scale were considered to indicate agreement, except for question 12 on the perceived risk of early mobilization for patients, where scores of 1 and 2 were treated as positive. Fisher's exact test was conducted to determine if there were significant differences in responses between professional categories using the SPSS statistical package (SPSS version 11.0, for Windows; SPSS; Chicago, IL). Differences were considered statistically significant at $P<0.05$.

3. Results

Ninety-seven ICU professionals, including 14 nurses, 20 physicians, 16 physical therapists, 31 nurse technicians, and 16 physical therapy undergraduate students, were working in the general or cardiac ICU at the time of data collection. Among these, seventy-two people were screened for the study. The final sample was made up of 60 individuals working or studying healthcare (Figure 1). Among them, 40 (66.66%) were affiliated with the general intensive care unit (ICU), whereas 20 (33.33%) were associated with the cardiac ICU.

Figure 1. Flowchart of the study participants



Source: the authors (2024).

The distribution of professional categories was as follows: 10 (16.66%) were Nursing Technicians, 8 (13.33%) were Registered Nurses, 26 (43.3%) were undergraduate physiotherapy students or physiotherapists, and 16 (26.66%) were medical professionals. Detailed characteristics of the participants in each professional category are shown in Table 1.

Table 1. Sample Characteristics

	Physical Therapists (n=26)	Physicians (n=16)	Nurses (n=8)	Nursing Technician (n=10)	TOTAL (n=60)
Time since course completion, years, n (%)					
>10	1 (4)	6 (37.5)	7 (87.5)	8 (80)	22 (36.6)
>5	0 (0)	1 (6.2)	0 (0)	0 (0)	1 (1.6)
3-5	2 (8)	0 (0)	1 (12.5)	0 (0)	3 (5)
1-3	5 (19)	7 (43.7)	0 (0)	1 (10)	13 (21.6)
< 1	3 (12)	1 (6.2)	0 (0)	1 (10)	5 (8.3)
Ongoing	15 (58)	1 (6.2)	0 (0)	0 (0)	16 (26.6)
Experience in Intensive Care, years, n (%)					
>15	1 (4)	5 (31.2)	4 (50)	5 (50)	15 (25)
>10	0 (0)	1 (6.2)	1 (12.5)	2 (20)	4 (6.6)
>5	0 (0)	1 (6.2)	2 (25)	1 (10)	4 (6.6)
3-5	0 (0)	0 (0)	0 (0)	1 (10)	1 (1.6)
1-3	4 (15)	5 (31.2)	0 (0)	1 (10)	10 (10)
<1	21 (81)	4 (25)	1 (12.5)	0 (0)	26 (43.3)
Degree, n (%)					
Doctorate	1 (4)	0 (0)	1 (12.5)	0 (0)	2 (3.3)
Master's	0 (0)	4 (25)	1 (12.5)	0 (0)	5 (8.3)
Specialist	5 (19)	3 (18.7)	6 (75)	3 (20)	17 (28.3)
Specialization		7 (43.7)	0 (0)	0 (0)	8 (13.3)
student	1 (4)				
Graduate	4 (15)	1 (6.2)	0 (0)	7 (70)	12 (20)
Intern	15 (58)	1 (6.2)	0 (0)	0 (0)	16 (26.6)

Source: the authors (2024).

To assess respondents' agreement with the knowledge-related questions in the questionnaire, responses of "completely agree" or "agree" were combined. Table 2 shows the number of individuals and their respective percentages agreeing with each question, categorized by the professional category. Table 3 presents the results of the questionnaire regarding barriers perceived by the participants.

Table 2. Knowledge and perception of mobilization

	PT vs MD	PT vs N	PT vs NT	MD vs N	MD vs NT	N vs NT	TOTAL (n=60)
Early mobilization of intensive care patients is very important	100% vs 100% (P=1)	100% vs 100% (P=1)	100% vs 100% (P=1)	100% vs 100% (P=1)	100% vs 100% (P=1)	100% vs 100% (P=1)	60 (100)
Regarding the early mobilization of mechanically ventilated patients.	100% vs 93.7% (P=0,381)	100% vs 100% (P=1)	100% vs 100% (P=1)	93.7% vs 100% (P=1)	93.7% vs 100% (P=1)	100% vs 100% (P=1)	59 (98)
You are trained, worked, or work in an institution that mobilizes patients admitted to the ICU early	77% vs 68.7% (P=0.72)	77% vs 75% (P=1)	77% vs 90% (P=0.645)	68.7% vs 75% (P=1)	68.7% vs 90% (P=0.352)	75% vs 90% (P=0.559)	46 (77)
In the ICU where you work, patients on mechanical ventilation are mobilized within 48 hours	88% vs 37.5% **(P=0.001)**	88% vs 50% **(P=0.037)**	88% vs 60% (P=0.076)	37.5% vs 50% (P=0.673)	37.5% vs 60% (P=0.422)	50% vs 60% (P=1)	39 (65)
Regarding reducing the sedation of patients on mechanical ventilation so that early mobilization can be carried out	73% vs 93.7% (P=0.127)	73% vs 100% (P=0.16)	73% vs 80% (P=1)	93.7% vs 100% (P=1)	93.7% vs 80% (P=0.538)	100% vs 80% (P=0.477)	50 (83.3)
In the ICU where you work, the number of times that patients on mechanical ventilation are mobilized is sufficient	46% vs 18.7% (P=0.102)	46% vs 25% (P=0.422)	46% vs 60% (P=0.711)	18.7% vs 25% (P=1)	18.7% vs 60% **(P=0.046)**	25% vs 60% (P=0.188)	23 (38.3)
My area of expertise is important for early mobilization	100% vs 87.5% (P=0.139)	100% vs 100% (P=1)	100% vs 90% (P=0.278)	87.5% vs 100% (P=0.536)	87.5% vs 100% (P=1)	100% vs 90% (P=1)	57 (95)
Your workload is sufficient to mobilize patients early at least once a day	96% vs 62.5% **(P=0.008)**	96% vs 62.5% **(P=0.033)**	96% vs 90% (P=0.484)	62.5% vs 62.5% (P=1)	62.5% vs 90% (P=0.19)	62.5% vs 90% (P=0.275)	49 (81.6)
Early mobilization brings benefits to patients	100% vs 100% (P=1)	100% vs 100% (P=1)	100% vs 90% (P=0.278)	100% vs 100% (P=1)	100% vs 90% (P=0.385)	100% vs 90% (P=1)	60 (100)
Early mobilization influences the success/failure of weaning from mechanical ventilation	100% vs 100% (P=1)	100% vs 87.5% (P=0.235)	100% vs 80% (P=0.071)	100% vs 87.5% (P=0.333)	100% vs 80% (P=0.138)	87.5% vs 80% (P=1)	57 (95)
Early mobilization influences the incidence of psychiatric disorders, such as delirium	69% vs 87.5% (P=0.27)	69% vs 50% (P=0.41)	69% vs 50% (P=0.44)	87.5% vs 50% (P=0.129)	87.5% vs 50% (P=0.069)	50% vs 50% (P=1)	41 (68.3)
Early mobilization is very risky for patients*	84.6% vs 87.5% (P=1)	84.6% vs 75% (P=0.609)	84.6% vs 70% (P=0.37)	87.5% vs 75% (P=0.578)	87.5% vs 70% (P=0.34)	75% vs 70% (P=1)	49 (81.6)
The benefits of early mobilization outweigh the risks for patients in Intensive Care	73% vs 93.7% (P=0.127)	73% vs 75% (P=1)	73% vs 90% (P=0.397)	93.7% vs 75% (P=0.249)	93.7% vs 90% (P=1)	75% vs 90% (P=0.559)	49 (81.6)
The benefits of early mobilization outweigh the risks in intensive care patients who are being mechanically ventilated	80% vs 87.5% (P=0.69)	80% vs 75% (P=1)	80% vs 80% (P=1)	87.5% vs 75% (P=0.578)	87.5% vs 80% (P=0.625)	75% vs 80% (P=1)	49 (81.6)
Early mobilization reduces patient time on mechanical ventilation	92% vs 87.5% (P=0.628)	92% vs 87.5% (P=1)	92% vs 90% (P=1)	87.5% vs 87.5% (P=1)	87.5% vs 90% (P=1)	87.5% vs 90% (P=1)	54 (90)
Would indicate early mobilization in patients using vasopressors	58% vs 31.2% P=0.121)	58% vs 25% (P=0.225)	58% vs 40% (P=0.463)	31.2% vs 25% (P=1)	31.2% vs 40% (P=0.692)	25% vs 40% (P=0.638)	26 (43.3)

Agreement was considered when individuals marked 4 (agree) or 5 (strongly agree) on the Likert scale. PT=physical therapists, MD=physicians, N=nurses, NT=nurse technicians. The values are represented as the percentage of professionals in each category. *The number and percentage of professionals who disagreed with the statement.
Source: the authors (2024).

Table 3. Perceived barriers to early mobilization

	PT vs MD	PT vs N	PT vs NT	MD vs N	MD vs NT	N vs NT	TOTAL (n=60)
Risk of professional self-harm	0% vs 12.5% (P=0.139)	0% vs 0% (P=1)	0% vs 10% (P=0.278)	12.5% vs 0% (P=0.536)	12.5% vs 10% (P=1)	0% vs 10% (P=1)	3 (5)
Professional fatigue	34.6% vs 56.2% (P=0,210)	34.6% vs 12.5% (P=0.385)	34.6% vs 30% (P=1)	56.5% vs 12.5% (P=0.079)	56.5% vs 30% (P=0.248)	12.5% vs 30% (P=0.588)	22 (37)
Excessive stress at work	38.4% vs 37.5% (P=1)	38.4% vs 12.5% (P=0.227)	38.4% vs 10% (P=0.127)	37.5% vs 12.5% (P=0.352)	37.5% vs 10% (P=0.190)	12.5% vs 10% (P=1)	18 (30)
Need to exceed your workload	7.7% vs 6.2% (P=1)	7.7% vs 0% (P=1)	7.7% vs 0% (P=1)	6.2% vs 0% (P=1)	6.2% vs 0% (P=1)	0% vs 0% (P=1)	3 (5)
Availability of professionals	46.1% vs 81.2% (P=0.050)	46.1% vs 75% (P=0.233)	46.1% vs 40% (P=1)	81.2% vs 75% (P=1)	81.2% vs 40% (P=0.046)	75% vs 40% (P=0.188	35 (58)
Patients undergoing procedures	57.7% vs 18.7% **(P=0.024)**	57.7% vs 50% (P=1)	57.7% vs 50% (P=0.722)	18.7% vs 50% (P=0.167)	18.7% vs 50% (P=0.189)	50% vs 50% (P=1)	27 (45)
Patients on mechanical ventilation	7.7% vs 43.7% **(P=0.016)**	7.7% vs 0% (P=1)	7.7% vs 10% (P=1)	43.7% vs 0% (P=0.054)	43.7% vs 10% (P=0.099)	0% vs 10% (P=1)	10 (17)
Delirium	11.5% vs 37.5% (P=0.063)	11.5% vs 25% (P=0.570)	11.5% vs 30% (P=0.317)	37.5% vs 25% (P=0.667)	37.5% vs 30% (P=1)	25% vs 30% (P=1)	14 (23)
Excessive sedation	38.5% vs 50% (P=0.531)	38.5% vs 37.5% (P=1)	38.5% vs 50% (P=0.709)	50% vs 37.5% (P=0.679)	50% vs 50% (P=0.1)	37.5% vs 50% (P=0.664)	26 (43)
Professionals do not consider mobilization important	46.1% vs 43.7% (P=1)	46.1% vs 37.5% (P=1)	46.1% vs 0% **(P=0.015)**	43.7% vs 37.5% (P=1)	43.7% vs 0% **(P=0,023)**	37.5% vs 0% (P=0,069)	22 (37)
Lack of equipment for mobilization	11.5% vs 31.2% (P=0.223)	11.5% vs 50% **(P=0.037)**	11.5% vs 30% (P=0.317)	31.2% vs 50% (P=0.412)	31.2% vs 30% (P=1)	50% vs 30% (P=0.630)	15 (25)
Clinical status of patients	61.5% vs 43.7% (P=0.344)	61.5% vs 37.5% (P=0.417)	61.5% vs 70% (P=0.716)	43.7% vs 37.5% (P=1)	43.7% vs 70% (P=0.248)	37.5% vs 70% (P=0.342)	33 (55)
Lack of cooperation between the multidisciplinary team	46.1% vs 50% (P=1)	46.1% vs 50% (P=1)	46.1% vs 20% (P=0.255)	50% vs 50% (P=1)	50% vs 20% (P=0.218)	50% vs 20% (P=0.321)	26 (43)
Others:	11.5% vs 0% (P=0.275)	11.5% vs 0% (P=0.566)	11.5% vs 0% (P=0.545)	0% vs 0% (P=1)	0% vs 0% (P=1)	0% vs 0% (P=1)	3 (5)
-Lack of Protocol	7.7% vs 0% (P=0.517)	7.7% vs 0% (P=1)	7.7% vs 0% (P=1)	0% vs 0% (P=1)	0% vs 0% (P=1)	0% vs 0% (P=1)	2 (3.3)
-Presence of devices	3.8% vs 0% (P=1)	3.8% vs 0% (P=1)	3.8% vs 0% (P=1)	0% vs 0% (P=1)	0% vs 0% (P=1)	0% vs 0% (P=1)	1 (1.6)

Agreement was considered when individuals marked 4 (agree) or 5 (strongly agree) on the Likert scale. PT=physical therapists, MD=physicians, N=nurses, NT=nurse technicians.
The values are represented by the percentage of professionals in each category.
Source: the authors (2024).

4. Discussion

In a general overview, our results are in accordance with previous studies where the analysis was categorized by professional groups, and the collective evaluation of responses yielded favorable results regarding knowledge and perception of early mobilization (EM).[5-10] This positive outcome is likely attributed to the research setting within a teaching hospital, where knowledge dissemination and specialization opportunities are readily available. Unlike studies in which the experience level negatively influenced the responses[5,7], we found positive results regarding the perceptions of less experienced participants, specifically 46.3% of undergraduate students. This favorable result may be because all students had completed the "Critical Care Physiotherapy" course and had at least two months of internship in the ICU setting under the supervision of qualified preceptors.

Additionally, 56% of the surveyed professionals actively pursued specialization in the field, further contributing to their in-depth understanding. As a result, when aggregating responses using the Likert scale, specifically grades 4 and 5, or, in the case of question 20, grades 1 and 2 (considered affirmations in favor of EM), the overall agreement level surpassed 80%. The professional categories at Clementino Fraga Filho University Hospital demonstrated a solid grasp of the topic, showcasing their scientific knowledge. Many respondents (>80%) agreed with the principles of early mobilization, acknowledging that patients should undergo early mobilization and that the benefits of EM outweigh the potential risks, even for patients on MV. In contrast, Aktar et al. (2021) found that only 65.5% of clinicians and 52.38% of physical therapists and nursing staff considered the risk-benefit ratio to be favorable.[11] The higher percentage in our study might be attributed to our sample coming from a teaching hospital, where professionals may have had more comprehensive training or exposure to the benefits of the intervention.

Although early mobilization is not exclusively a task of physiotherapists, a coordinated effort that relies on communication and collaboration among all team members, and the presence of physical therapists around the clock may have positively influenced the ICU team's perception of early mobilization, given that physiotherapy plays a crucial role in the functional recovery of ICU patients. In the ICUs where this study was carried out, besides mobilization, the physical therapists participated in the clinical decisions regarding advanced respiratory care and closely interacted with the other healthcare professionals throughout their 12-hour shifts.

The respondents also asserted that their workload was sufficient to provide daily mobilization to patients. However, when questioned about the adequacy of the current frequency of mobilization for patients on MV, most professionals voiced disagreement, with merely 38.3% agreeing. This dissonance between scientific knowledge and its practical implementation, which tends to operate at varying paces, is common and has also been observed in other studies.[12,13] Moreover, the study by Ashkenazy et al. (2024) suggests that the association between mobility level and common therapies points to subjective norms or common practices as potential barriers to implementing clinical practice guidelines.[14] This finding helps explain the discrepancy between clinical practice guidelines and actual clinical practice behavior, highlighting the need for a mobilization protocol and establishing a multiprofessional rehabilitation culture in the ICU.

As in the study by Brown et al. (2007), in the context of EM for patients using vasopressors, less than 50% of our sample (43.3%) agreed.[9] Since the question lacked specific details about clinical conditions and the dosage of vasopressors, it may have introduced an element of uncertainty into respondents' positions. Although the question's formulation may have lacked specificity, it was aligned with scientific evidence. Cardiocirculatory instability is one of the main barriers to mobilization[15] and there are differences in mobility loss and postural evolution between patients using vasopressors and those who do not likely stem from the clinical constraints imposed on patients after experiencing shock.[16]

Despite the high level of consensus regarding EM, specific questions revealed significant discrepancies ($p<0.05$) when comparing the responses across diverse professional categories. It's crucial to emphasize that, at the time of the research, there was no established mobilization protocol involving the multidisciplinary team in the ICUs where data was collected. Unfortunately, most studies on knowledge and perceived barriers to mobilization lack information on whether there was a mobilization protocol in their units at the time of data collection.[5-10] As such, these distinctions can be partially attributed to the more direct role of physiotherapy in EM,

irrespective of the presence or absence of a formal protocol within the unit.[17]

When professionals were asked whether patients on MV are mobilized before 48 hours in the ICU where they work, the Medicine and Nursing categories exhibited notably lower levels of agreement than the Physiotherapy group. Most physiotherapists agreed that early mobilization occurs before the 48-hour mark, unlike Medicine and Nursing, which displayed significantly lower levels of agreement. One plausible explanation is that nurses are not solely responsible for patient care, but often handle administrative tasks across various domains, which may limit their direct involvement in EM. Nursing professionals frequently contend with the specific materials and technologies needed for diagnostics, monitoring and therapy, thus demanding continuous attention. Medicine, like Nursing, grapples with high demands in the clinical and laboratory aspects, potentially contributing to differing perceptions of the role of physiotherapy.[18]

Unlike other professional categories, nursing technicians (60%) agreed that the frequency of mobilization for patients on MV was sufficient.5 Given that the questionnaire's definition of EM encompasses position changes, nursing technicians may have registered high agreement levels because of the routine nature of these procedures within their scope of practice. This suggests that this professional category may have interpreted EM in a narrower context, mainly tied to specific duties and responsibilities. Meanwhile, other professional categories may have taken a more comprehensive view of EM, encompassing motor exercises and functional activities.

Regarding workload, both the physiotherapy and nursing technician categories indicated that they had sufficient capacity to mobilize patients at least once a day. In contrast, similar to the results of the study by Fontanela et al. (2018), Medicine and Nursing professionals displayed significant levels of disagreement in their responses to this question.[7]

It's presumable that physiotherapy and nursing technicians felt confident in their capacity for daily EM due to their direct involvement in these activities. Conversely, Medicine and Nursing professionals are likely to be burdened by diverse clinical demands, potentially explaining their varying perspectives on the adequacy of the workload.[7] Moreover, these professionals traditionally do not perceive themselves as directly accountable for EM, and when examining all professional categories together, the most frequently mentioned barrier was the availability of professionals (58%). Notably, Nursing and Medicine demonstrated a high concurrence with this issue (75% and 81%, respectively). This trend highlights the necessity for a more comprehensive and coordinated approach to EM within these healthcare settings, and is likely driven by the same factors explained earlier regarding the availability of working hours.

From a statistical standpoint, there is a marked divergence between the perspectives of Medicine and Physiotherapy regarding whether patients undergoing procedures constitute a barrier to EM. In the Physiotherapy category, 57.7% of the respondents agreed, considering procedures as an impediment to mobilization, whereas in Medicine, only 18.7% concurred. This discrepancy may arise from the distinct roles of each category in the intensive care routine. Medical teams frequently conduct many procedures, whereas physiotherapy is actively engaged in patient mobilization. Consequently, as stated in the study of Jolley et al. (2014), each category likely interpreted the issue within the context of their specific responsibilities.[19]

Medicine has displayed a notable consensus that patients on MV make early mobilization difficult, again revealing a significant discrepancy compared to Physiotherapy. Despite increasing evidence supporting the safety, feasibility, and benefits of early mobilization for MV patients, its widespread adoption remains limited.[19-21] The findings of this study indicate that physicians are aware of the advantages of early mobilization in mechanically ventilated patients.

However, unlike their counterparts in Physiotherapy, they perceived MV as an obstacle to implementation.

Among the identified barriers to implementing early mobilization (EM), the most frequently cited when considering all professional categories collectively was the availability of professionals (58%). This barrier is commonly recognized as a structural constraint in alignment with prior studies.[8,19] However, it is noteworthy that some studies did not uncover a clear correlation between the level of mobilization and the availability of professionals.[20,21] According to Dubb et al. (2016), the optimal staffing levels in proportion to the patient population for an effective EM program remain uncertain.[8] Furthermore, an alternative approach proposed in earlier research involves revising the prioritization of daily care routines to incorporate mobility within this framework.[22,23] Therefore, to address the challenges posed by these barriers, resource constraints and existing systems, the active engagement of all stakeholders is essential to establish an evidence-based foundation and enhance the capacity to carry out these tasks.[24]

This study has certain limitations, the foremost being the relatively small sample size, which may raise concerns about the reliability of the results. However, it is important to note that the study's primary focus was local evaluation within a specific context - a university hospital. Therefore, this limitation primarily results from the size of the ICUs involved. The second limitation pertains to variations in the proportion of subjects across the study. The number of individuals within the Physiotherapy category was significantly higher, attributed mainly to the presence of physiotherapists available around the clock and the mandatory involvement of physiotherapy undergraduate students in the intensive care area at the Clementino Fraga Filho University Hospital. Thus, students constituted 58% of the sample within the Physiotherapy category, which could have influenced the study outcomes because of their limited experience in caring for critically ill patients. Finally, the results of this study may not be directly extrapolated to other populations because they were obtained from a single center.

5. Conclusion

The findings of this study demonstrate that within a university hospital lacking an established early mobilization protocol, professionals in the involved categories possess satisfactory knowledge and perceptions concerning early mobilization. The primary barriers to conducting early mobilization, as perceived by professional categories, encompassed the availability of professionals, patient clinical status, and patients undergoing procedures. Establishing institutional protocols and guidelines is essential to facilitate multidisciplinary team engagement in early mobilization implementation and to overcome barriers to execution.

Authors contributions

The authors declare that they have made sufficient contributions to the work in terms of the conception or design of the research; the acquisition, analysis or interpretation of data for the work; and the writing or critical review for relevant intellectual content. All authors approved the final version to be published and agreed to take public responsibility for all aspects of the work.

Conflicts of interest

No financial, legal, or political conflicts involving third parties (government, private companies, and foundations, etc.) were declared for any aspect of the submitted work (including but not limited to grants and funding, advisory board participation, study design, manuscript preparation, statistical analysis, etc.).

Indexers

The Journal of Physiotherapy Research is indexed by DOAJ, EBSCO, LILACS and Scopus.

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