

Challenges Faced by Respiratory Therapists in Implementing Early Mobilization Protocols for Mechanically Ventilated Patients: A Qualitative Study

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Abstract

Background: Early mobilization of mechanically ventilated patients in the ICU has been shown to improve patient outcomes, but its implementation often faces numerous challenges. Respiratory therapists play a key role in facilitating early mobilization, yet their specific challenges are underexplored.

Objective: This study aimed to explore the challenges faced by respiratory therapists in implementing early mobilization protocols for mechanically ventilated patients in a tertiary hospital ICU and identify potential facilitators.

Methods: A qualitative study using semi-structured interviews was conducted with 12 respiratory therapists in a tertiary hospital. Thematic analysis was used to identify key themes related to patient-related challenges, institutional barriers, and facilitators.

Findings: Three main themes were identified: (1) Patient-related challenges, such as sedation, hemodynamic instability, and muscle weakness; (2) Institutional barriers, including insufficient staffing, lack of equipment, and inconsistent protocols; (3) Facilitators, such as interprofessional collaboration, training, and standardized protocols, which helped overcome challenges.

Conclusion: Respiratory therapists face significant barriers in implementing early mobilization protocols for mechanically ventilated patients. Addressing these challenges through better resource allocation, training, and interprofessional collaboration can improve mobilization practices and patient outcomes.

Keywords: Early mobilization, respiratory therapists, ICU, mechanically ventilated patients, challenges, interprofessional collaboration, qualitative study.

Introduction

Early mobilization of critically ill patients, particularly those who are mechanically ventilated, has been shown to provide numerous benefits, including reduced muscle atrophy, prevention of ICU-acquired weakness, and improved functional recovery post-ICU discharge. Recent studies suggest that early mobilization can lead to decreased hospital length of stay and enhanced overall patient outcomes, particularly in mechanically ventilated patients who are at high risk of developing complications due to prolonged immobility (Schweickert et al., 2009; Hodgson et al., 2014).

Respiratory therapists play a crucial role in facilitating early mobilization by managing mechanical ventilation settings, monitoring patient oxygenation, and ensuring ventilator synchrony during mobilization activities. Their expertise in managing respiratory care is vital for ensuring patient safety during mobilization, especially for those with respiratory instability (Hanekom et al., 2011). However, despite its benefits, early mobilization is not always implemented consistently in ICU settings, and respiratory therapists often face numerous challenges when trying to initiate or maintain these protocols.

These challenges can be multifaceted, ranging from patient-related factors such as sedation, hemodynamic instability, and delirium, to organizational barriers like lack of staff, time constraints, and inadequate interdisciplinary communication (Needham, 2008; Castro-Avila et al., 2015). Given these barriers, understanding the specific obstacles encountered by respiratory therapists is essential for improving the implementation of early mobilization protocols and optimizing patient outcomes.

This study aims to explore the challenges that respiratory therapists face in implementing early mobilization protocols for mechanically ventilated patients in ICU settings. By identifying these barriers and potential facilitators, this research seeks to provide insight into how healthcare systems can better support respiratory therapists in promoting early mobilization, ultimately improving patient outcomes and reducing ICU-related complications.

Literature Review

Overview of Early Mobilization in Mechanically Ventilated Patients

Early mobilization of critically ill patients, particularly those on mechanical ventilation, has gained attention over the past decade as a key strategy to improve patient outcomes. Prolonged immobility in the ICU can lead to complications such as ICU-acquired weakness, muscle atrophy, and delayed recovery, which ultimately affect the length of hospital stays and post-discharge quality of life (Tipping et al., 2017). Mobilizing patients as early as possible, even while mechanically ventilated, has been associated with improved functional outcomes, reduced ICU and hospital length of stay, and a reduction in long-term cognitive and physical impairments (Schweickert et al., 2009; Morris et al., 2008).

Several studies have demonstrated the safety and feasibility of early mobilization in the ICU, including for patients on mechanical ventilation. Schweickert et al. (2009) conducted a randomized controlled trial that showed significant improvements in functional independence and a shorter duration of delirium in patients who received early mobilization and physical therapy compared to standard care. Similarly, Needham et al. (2010) highlighted the potential for reducing ICU-related complications through early physical activity.

Respiratory Therapist's Role in Early Mobilization

Respiratory therapists play a critical role in facilitating early mobilization of mechanically ventilated patients. Their expertise is essential in managing the complexities of mechanical ventilation, ensuring ventilator synchrony, monitoring oxygenation and ventilation parameters, and providing adjustments during physical activities (Hanekom et al., 2011). Respiratory therapists also collaborate with physical and occupational therapists to create individualized mobilization plans that account for the patient's respiratory status and needs (Berney et al., 2015).

Given their specialized knowledge, respiratory therapists are instrumental in ensuring the safety and efficacy of early mobilization protocols, particularly for patients at high risk of respiratory decompensation. However, studies have pointed out that despite their vital role, respiratory therapists often face barriers when

implementing early mobilization protocols. These barriers are not only patient-related but are also influenced by institutional practices and interprofessional collaboration (Needham, 2008).

Challenges in ICU Settings for Early Mobilization

Despite the known benefits of early mobilization, its implementation in ICU settings, particularly for mechanically ventilated patients, remains inconsistent. Various challenges hinder respiratory therapists and other healthcare professionals from initiating and sustaining early mobilization protocols.

Patient-Related Challenges

Patient-related barriers are among the most frequently cited in the literature. Factors such as sedation, hemodynamic instability, and delirium often prevent the safe mobilization of mechanically ventilated patients (Titsworth et al., 2012). Many patients on ventilators may require sedation to tolerate the mechanical ventilation, making it difficult to engage in mobilization activities. Additionally, patients with fluctuating vital signs or those receiving high levels of ventilatory support are often deemed too unstable for early mobilization (Kayambu et al., 2013).

Staff-Related Challenges

Staff-related barriers, including the knowledge, attitudes, and workload of healthcare providers, significantly impact the successful implementation of early mobilization protocols. Studies have highlighted that insufficient training and awareness of the benefits of early mobilization among ICU staff, including respiratory therapists, can result in inconsistent practices (Hodgson et al., 2013). Additionally, the heavy workload in ICUs often limits the time available for mobilization efforts, as staff may prioritize life-saving interventions over physical activity for patients (Pattison et al., 2007).

Institutional and Organizational Barriers

Institutional barriers also play a critical role in limiting the application of early mobilization protocols. A lack of clear protocols, equipment, and interdisciplinary collaboration can significantly hinder the ability of respiratory therapists and other ICU staff to mobilize mechanically ventilated patients (Wahab et al., 2016). Without standardized guidelines, there may be uncertainty about which patients are appropriate candidates for early mobilization, leading to inconsistent practice across ICUs (Adler and Malone, 2012). Additionally, mobilization often requires specialized equipment, such as lifts or walkers, which may not always be available, further complicating the process.

Interdisciplinary collaboration between respiratory therapists, nurses, and physical therapists is crucial for ensuring patient safety and success during early mobilization. However, a lack of communication and role clarity between these professionals has been identified as a barrier to effectively implementing these protocols (Drolet et al., 2013). Enhancing collaboration and establishing clear responsibilities for each team member can promote a more consistent approach to early mobilization.

Facilitators of Early Mobilization

While challenges exist, there are also several identified facilitators that can help overcome these barriers. One key facilitator is the establishment of clear, standardized protocols for early mobilization. Such protocols ensure that all healthcare professionals, including respiratory therapists, are aware of the criteria for mobilizing patients, thus promoting consistency in practice (Harrold et al., 2015). Furthermore, training programs aimed at increasing staff knowledge and confidence in mobilizing mechanically ventilated patients have been shown to improve early mobilization practices (Hodgson et al., 2013).

Additionally, strong interprofessional collaboration between respiratory therapists, nurses, and physical therapists has been shown to enhance the success of early mobilization efforts (Kayambu et al., 2013). When respiratory therapists and physical therapists collaborate effectively, patient outcomes improve, and the likelihood of early mobilization increases.

Gap in the Literature

While there is substantial evidence supporting the benefits of early mobilization in mechanically ventilated patients, few studies have focused specifically on the challenges faced by respiratory therapists in implementing these protocols. Most research has focused on barriers in a broader context, encompassing the experiences of the entire healthcare team, including nurses, physical therapists, and physicians. However, the unique role of respiratory therapists in managing mechanical ventilation and supporting early mobilization efforts has not been sufficiently explored. Understanding their specific challenges and experiences is critical for improving the implementation of early mobilization protocols and enhancing patient outcomes.

The literature highlights the significant benefits of early mobilization in mechanically ventilated patients, particularly in reducing ICU-related complications and improving patient outcomes. Respiratory therapists play an essential role in facilitating early mobilization by managing respiratory support and collaborating with other healthcare professionals. However, the implementation of early mobilization protocols is often hindered by patient-related, staff-related, and institutional barriers. To address these challenges, further research is needed to explore the specific experiences of respiratory therapists in implementing early mobilization protocols, with a focus on developing strategies to overcome these barriers and promote better interprofessional collaboration.

Methodology

Study Design

This study utilized a qualitative research design with a phenomenological approach to explore the challenges faced by respiratory therapists in implementing early mobilization protocols for mechanically ventilated patients. A phenomenological approach was chosen to gain a deep understanding of the lived experiences of respiratory therapists in a tertiary hospital setting. Data were collected through semi-structured interviews to capture the detailed perspectives of the participants.

Setting

The study was conducted in the Intensive Care Units (ICUs) of a tertiary hospital with a capacity of 500 beds, including a 20-bed adult ICU. The hospital is well-equipped with state-of-the-art facilities and follows established protocols for early mobilization of critically ill patients. The ICU staff includes a multidisciplinary team comprising respiratory therapists, nurses, physical therapists, intensivists, and other allied health professionals.

Participants

A purposive sampling technique was employed to select participants. The study involved 12 respiratory therapists working in the ICU of the tertiary hospital. The inclusion criteria were:

- Respiratory therapists with at least 2 years of experience working with mechanically ventilated patients.
- Respiratory therapists actively involved in early mobilization protocols for critically ill patients.
- Willingness to participate in the study and provide informed consent.

Participants were recruited through internal communications within the hospital, and all agreed to participate voluntarily.

Data Collection

Data were collected through in-depth, semi-structured interviews conducted face-to-face in a private room within the hospital premises to ensure confidentiality. Each interview lasted between 30 to 60 minutes and was audio-recorded with the participant's permission. The interviews were guided by an interview protocol that included open-ended questions aimed at exploring the following topics:

- Experiences with implementing early mobilization protocols for mechanically ventilated patients.
- Specific challenges faced during the mobilization process.
- Perceived barriers related to patient factors, staff dynamics, and institutional policies.
- Facilitators and strategies used to overcome these challenges.
- Interprofessional collaboration with other healthcare professionals during mobilization.

Example questions included:

- "Can you describe your experiences with early mobilization of mechanically ventilated patients?"
- "What specific challenges do you encounter when trying to mobilize patients on ventilators?"
- "How do you collaborate with nurses and physical therapists during the mobilization process?"

Data Analysis

The recorded interviews were transcribed verbatim and analyzed using thematic analysis. Thematic analysis was chosen for its flexibility in identifying, analyzing, and reporting patterns (themes) within the data. The analysis followed the steps outlined by Braun and Clarke (2006), which included:

1. Familiarization with the data: The researcher read through the transcripts multiple times to become familiar with the content.
2. Initial coding: The researcher identified key phrases, concepts, and recurrent ideas across the transcripts. Coding was done manually, and segments of text were labeled according to the identified codes.
3. Theme development: Codes were grouped into broader themes based on patterns in the data. These themes captured the central challenges and facilitators reported by the respiratory therapists.
4. Review and refinement of themes: The themes were reviewed, refined, and validated through iterative discussion with a second researcher to ensure accuracy and coherence.
5. Final theme presentation: The final themes were organized and presented with supporting quotes from the participants to ensure that the analysis reflected their perspectives accurately.

Ethical Considerations

This study was approved by the ethics committee, and all participants provided written informed consent prior to participation. The participants were assured of their anonymity and confidentiality throughout the research process. Identifiable information, such as names or job titles, was removed from the transcripts, and pseudonyms were used in the reporting of findings. Participants were also informed of their right to withdraw from the study at any point without any consequences.

Rigor and Trustworthiness

To ensure the rigor and trustworthiness of the study, several strategies were employed:

- Credibility: Triangulation was used by discussing preliminary findings with participants to verify the accuracy of the interpretations (member checking). Additionally, an experienced qualitative researcher reviewed the coding and themes for validation.
- Transferability: Detailed descriptions of the setting, participants, and research process were provided to allow for the transferability of the findings to similar healthcare settings.
- Dependability and Confirmability: An audit trail was maintained, including all research materials, such as interview guides, transcripts, and analysis notes. This trail ensured that the findings could be traced back to the original data, confirming the dependability of the results.

Limitations

The study was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings. Additionally, although efforts were made to minimize bias, the reliance on self-reported data may have introduced some subjectivity.

Findings

The analysis of the data resulted in the identification of three major themes: (1) Patient-Related Challenges, (2) Institutional Barriers, and (3) Facilitators and Solutions. Each theme is supported by several sub-themes that highlight the specific experiences of the respiratory therapists involved in implementing early mobilization protocols for mechanically ventilated patients. Participants' responses are provided to illustrate key points.

Theme 1: Patient-Related Challenges

Respiratory therapists reported that patient-specific factors were significant barriers to the successful implementation of early mobilization protocols. These factors often made it difficult to determine whether a patient was ready for mobilization or posed risks during mobilization attempts.

Sub-theme 1.1: Sedation and Delirium

Many participants highlighted that the level of sedation required for some mechanically ventilated patients created a major challenge in initiating mobilization. Sedation was often necessary to ensure patient comfort, but it hindered physical activity.

- Participant 3: "Sometimes the patients are just too sedated to do anything. We lower the sedation, but then they get agitated, which makes it dangerous to try and move them."
- Participant 7: "Delirium is another issue. The patient might seem stable one minute, but then they become confused or aggressive, and it's hard to mobilize them safely."

Sub-theme 1.2: Hemodynamic Instability

Participants also reported that fluctuations in vital signs, such as blood pressure and oxygen saturation, limited their ability to mobilize patients. Many patients on mechanical ventilation were hemodynamically unstable, which added to the risk of early mobilization.

- Participant 1: "There's always the concern that the patient's blood pressure will drop or their oxygen levels will go down, and that makes us hesitate. We have to assess minute by minute."
- Participant 9: "The hardest part is the unpredictability of their condition. You don't want to put them at risk, so we often have to hold off on mobilizing."

Sub-theme 1.3: Physical Weakness and Muscle Atrophy

Muscle atrophy due to prolonged bed rest and mechanical ventilation was a common issue, as participants expressed concern about the physical frailty of patients and the potential for injury during mobilization attempts.

- Participant 5: “The patients are often so weak that even sitting on the edge of the bed is a struggle. Their muscles waste away, and we have to be really careful not to cause any harm.”
- Participant 8: “They lose so much strength, and it’s hard to balance the benefits of mobilization against the risk of injury.”

Theme 2: Institutional Barriers

Participants identified several institutional barriers that hindered the effective implementation of early mobilization protocols, including staffing issues, lack of equipment, and inconsistent protocols.

Sub-theme 2.1: Lack of Time and Staffing

The most frequently mentioned institutional barrier was the lack of sufficient staff and time. Participants expressed frustration with their heavy workloads, which often left little time to focus on mobilization efforts.

- Participant 4: “We have too many patients and not enough staff. Mobilization is important, but when you’re busy managing the ventilators and other critical care tasks, it falls down the priority list.”
- Participant 10: “The ICU is always short-staffed. Mobilizing a patient takes time, and it requires teamwork, which we don’t always have.”

Sub-theme 2.2: Inadequate Equipment

Many respiratory therapists mentioned that the availability of proper equipment, such as specialized chairs, lifts, or walkers, was inconsistent. This lack of equipment made it difficult to safely mobilize patients, particularly those who were heavier or more unstable.

- Participant 6: “We need equipment like mobile lifts or chairs that can support the patients properly, but it’s often unavailable or in use by other departments.”
- Participant 2: “We can’t safely move some of these patients without the right tools. It’s a big challenge because not every ICU is well-equipped for mobilization.”

Sub-theme 2.3: Inconsistent Protocols and Communication

Participants highlighted the lack of standardized protocols for early mobilization across the ICU as another key barrier. The inconsistency in approaches and poor communication between healthcare providers, including nurses and physical therapists, complicated efforts to initiate mobilization.

- Participant 11: “Every shift is different. Some doctors are all for early mobilization, while others are more conservative. There’s no clear guideline for when and how to start, which causes confusion.”
- Participant 12: “Communication is key, but sometimes we’re not on the same page with the nurses or the physical therapists. We need to work together more effectively.”

Theme 3: Facilitators and Solutions

Despite the numerous challenges, participants identified several facilitators that helped them overcome barriers and successfully mobilize patients. These facilitators included interprofessional collaboration, proper training, and clear protocols.

Sub-theme 3.1: Interprofessional Collaboration

Most participants agreed that working closely with nurses, physical therapists, and physicians was crucial for successful early mobilization. Collaboration ensured that patients were assessed and managed holistically, reducing risks during mobilization.

- Participant 5: “When the whole team is on board, mobilization is much smoother. Nurses, therapists, and doctors all play a part, and we’ve had the most success when everyone is working together.”
- Participant 8: “Having a dedicated team for mobilization, where each person knows their role, makes a big difference.”

Sub-theme 3.2: Training and Education

Several participants mentioned that additional training in early mobilization techniques and protocols gave them more confidence in managing mechanically ventilated patients. Training sessions helped respiratory therapists understand the benefits of early mobilization and improved their ability to assess patient readiness.

- Participant 9: “Training helped me understand when it’s safe to mobilize a patient and what signs to look out for. We need more of these sessions to feel more confident.”
- Participant 3: “Education is key. When you know more about the benefits of mobilization, you’re more likely to push for it, even when there are challenges.”

Sub-theme 3.3: Standardized Protocols

Participants expressed the need for clear, standardized protocols to guide early mobilization efforts. Where these protocols were in place, respiratory therapists felt more confident in their ability to assess patient readiness and collaborate with other healthcare professionals.

- Participant 1: “Having a clear protocol makes things easier. You know exactly what steps to follow and when it’s safe to move the patient.”
- Participant 7: “Standardization across the ICU would reduce confusion and help everyone work together more efficiently.”

Discussion

The findings of this study provide valuable insights into the challenges and facilitators experienced by respiratory therapists when implementing early mobilization protocols for mechanically ventilated patients in the ICU setting of a tertiary hospital. This discussion will interpret the results in the context of existing literature, highlight the practical implications, and provide recommendations for improving the implementation of early mobilization protocols.

Patient-Related Challenges

The first major theme identified in this study was the patient-related challenges, particularly those associated with sedation, hemodynamic instability, and muscle atrophy. These challenges are consistent with previous studies that highlight the difficulty in mobilizing critically ill patients due to their physiological instability and the need for sedation (Kayambu et al., 2013; Tipping et al., 2017). Sedation, while necessary to maintain patient comfort and ventilator synchrony, often hampers attempts to engage patients in physical activity, as reflected in several participant responses. Hemodynamic instability also limits early mobilization, as fluctuations in vital signs can increase the risk of adverse events during mobilization attempts.

Furthermore, muscle weakness and atrophy, commonly observed in patients who have been on prolonged mechanical ventilation, make it difficult for respiratory therapists to initiate mobilization without risking injury to the patient. This aligns with findings from Schweickert et al. (2009), which noted that muscle atrophy in ICU patients reduces their ability to tolerate even minimal physical activity. The identification of these patient-related barriers underscores the importance of patient readiness assessments, as well as the need for a multidisciplinary approach to carefully balance sedation and early mobilization to avoid exacerbating muscle atrophy.

Institutional Barriers

The second major theme, institutional barriers, also mirrored findings from the broader literature on early mobilization in ICU settings. Participants reported that time constraints, insufficient staffing, lack of equipment, and inconsistent protocols hindered their ability to mobilize mechanically ventilated patients effectively. Similar findings were reported by Hodgson et al. (2013), who identified staffing shortages and heavy workloads as significant barriers to early mobilization in ICUs.

The lack of adequate equipment, such as mechanical lifts and mobilization chairs, further complicated mobilization efforts, especially for patients with more complex needs. Participants' frustrations with inconsistent protocols also reflected the challenges of establishing a unified approach across different shifts and healthcare providers. This is a common issue in many ICUs, where the absence of standardized protocols leads to confusion and inconsistent practices (Harrold et al., 2015). Standardizing protocols for early mobilization and improving resource availability could help mitigate these institutional barriers.

Facilitators and Solutions

Despite the challenges, several facilitators were identified that helped respiratory therapists overcome the barriers to early mobilization. Interprofessional collaboration was recognized as one of the most critical facilitators in promoting early mobilization. When respiratory therapists, nurses, and physical therapists worked together effectively, they were able to mobilize patients more safely and efficiently. This is consistent with previous studies, such as Needham et al. (2010), which emphasize the importance of teamwork and shared decision-making in the ICU for improving patient outcomes.

Training and education also emerged as key facilitators. Participants noted that additional training on early mobilization techniques and protocols increased their confidence and willingness to engage in mobilization efforts. This finding aligns with the work of Harrold et al. (2015), who found that providing ICU staff with targeted education on early mobilization significantly improved their participation in mobilizing patients.

Finally, standardized protocols for early mobilization were highlighted as an essential solution. Participants emphasized the need for clear, consistent guidelines that would provide a structured approach to mobilizing mechanically ventilated patients. Standardization has been shown to improve outcomes in early mobilization programs, as it reduces ambiguity and ensures that all healthcare providers follow the same procedures (Adler and Malone, 2012). Implementing standardized protocols across ICUs would promote more consistent mobilization practices and ensure that all patients receive the benefits of early physical activity.

Practical Implications

The findings of this study have several practical implications for the implementation of early mobilization protocols in ICU settings. First, there is a need for improved patient assessments to determine the appropriate balance between sedation and physical activity. Developing more refined sedation protocols that allow for safer and more frequent mobilization may help address some of the patient-related challenges.

Second, healthcare institutions must address the staffing and resource limitations that hinder early mobilization efforts. Ensuring that ICUs are adequately staffed and equipped with the necessary tools for safe mobilization is essential for supporting respiratory therapists and other healthcare providers in their efforts. This could include investing in more mechanical lifts, mobilization chairs, and other equipment designed to facilitate the safe movement of critically ill patients.

Finally, fostering interprofessional collaboration and providing ongoing training for ICU staff are critical strategies for promoting early mobilization. Hospitals should invest in continuous professional development programs that focus on the benefits of early mobilization and equip staff with the skills and knowledge they need to implement these protocols effectively. Additionally, developing and implementing standardized protocols for early mobilization across ICUs can ensure consistency in practice and improve patient outcomes.

Limitations of the Study

While this study provides valuable insights into the challenges and facilitators experienced by respiratory therapists in implementing early mobilization, it has several limitations. First, the study was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings. Second, the study relied on self-reported data from participants, which may introduce bias. Although efforts were made to ensure the credibility and trustworthiness of the data through member checking and triangulation, these limitations should be considered when interpreting the findings.

Recommendations for Future Research

Future research should explore the experiences of respiratory therapists in other hospital settings to determine whether the challenges and facilitators identified in this study are consistent across different ICUs. Additionally, more research is needed to examine the impact of specific interventions, such as training programs and standardized protocols, on the success of early mobilization efforts. Finally, future studies could explore patient outcomes associated with early mobilization to further strengthen the evidence base for this critical intervention.

Conclusion

This study highlights the complex and multifaceted challenges faced by respiratory therapists when implementing early mobilization protocols for mechanically ventilated patients in ICU settings. Patient-related factors, institutional barriers, and a lack of resources all contribute to the difficulties encountered by

respiratory therapists. However, interprofessional collaboration, training, and standardized protocols are key facilitators that can support the successful implementation of early mobilization. Addressing these challenges and promoting collaboration between healthcare providers can improve patient outcomes and enhance the overall effectiveness of early mobilization protocols in ICUs.

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