The Use of Physical Restraints in Critical Care Units: Physicians' and Nurses' Perspectives and Ethical Considerations

The use of physical restraints in critical care units

Abstract

The use of physical restraints in critical care units is a common practice but one that generates significant debate. Its primary aim is to prevent patient self-harm, the inadvertent removal of vital medical devices, and aggressive behaviors that could endanger caregivers and other patients. However, this practice is surrounded by controversy, as it can lead to negative physical and psychological effects on patients, raising ethical and legal concerns [1].

This study aims to conduct an in-depth analysis of physicians' and nurses' perceptions regarding the use of physical restraints in intensive care settings. We evaluate the reasons justifying their use, their effectiveness, observed complications, and possible alternatives. Furthermore, we explore the ethical and legal implications associated with this practice, identifying key challenges and areas for improvement [2].

Introduction

Physical restraint is defined as any method, device, or material designed to limit a patient's movement to prevent harm to themselves or others. It is frequently used in intensive care and critical care units where patients may exhibit confusion, psychomotor agitation, or a risk of self-extubation [3].

Despite its intended benefits, physical restraint raises numerous ethical dilemmas, particularly concerning patient autonomy, dignity, and the potential for harm [4]. The balance between ensuring patient safety and avoiding unnecessary restriction of movement is difficult to maintain, especially in the absence of standardized guidelines. Healthcare providers are often left to make discretionary decisions regarding the application of such measures, influenced by clinical urgency, institutional policies, and available resources [5].

Moreover, cultural and legal frameworks differ significantly between regions, influencing the acceptance and practice of physical restraint in critical care settings. While some countries have strict regulations limiting the use of restraints, others provide minimal oversight, leading to variations in practice standards [6]. Understanding these differences can help develop a more globally informed perspective on best practices.

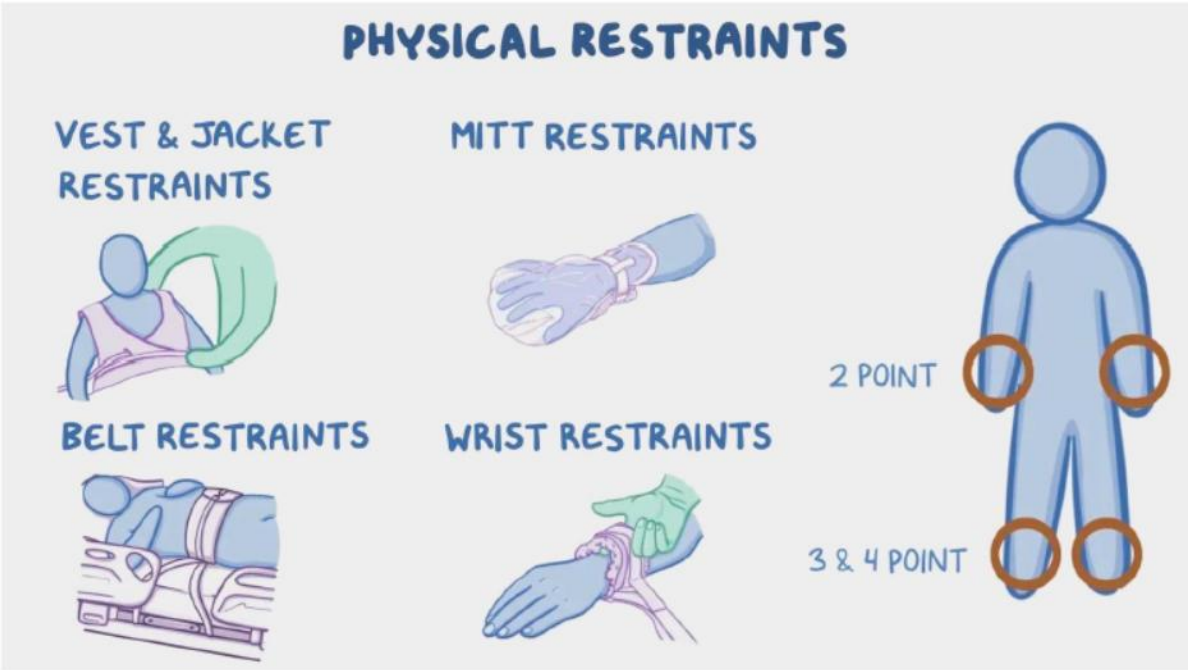

Figure 1: Types and Point-Based System of Physical Restraints in ICU Settings

Materials and Methods

This study employed a descriptive methodology using an observational survey to explore the perceptions and perspectives of doctors and nurses regarding the use of physical restraint and to examine the associated ethical considerations. The qualitative data provided in-depth insights into healthcare professionals' attitudes, experiences, and ethical dilemmas related to restraint practices, offering a comprehensive understanding of their viewpoints and the ethical issues involved.

Our study was conducted in six intensive care units across two Moroccan university hospitals. We employed a mixed-methods approach combining a questionnaire survey, semi-structured interviews, and observational data collection from healthcare professionals. The study aimed to assess the extent to which restraints are used, the reasons behind their implementation, and the challenges faced by professionals in ensuring ethical compliance.

The questionnaire, consisting of 30 structured and semi-structured questions, was distributed to 100 physicians and nurses, covering topics such as:

- The criteria for initiating physical restraints.
- The extent of training received by healthcare providers.
- The perceived effectiveness of physical restraints in ensuring patient safety.
- Observed complications arising from restraint use.
- Ethical and legal considerations associated with restraint use.

Data analysis was conducted using qualitative and quantitative methods, allowing for the identification of trends, professional differences in opinion, and areas requiring improved

policies and training programs. Additionally, we analyzed real-life case studies of restrained patients, their clinical outcomes, and the reflections of the attending medical staff.

Results

Among the **100 healthcare professionals** surveyed (40 physicians and 20 nurses), the following results were obtained:

1. Criteria for the Use of Physical Restraints

The analysis of responses reveals the primary reasons for using physical restraints:

Agitation and Dangerous Behavior:

92.5% of physicians and **85% of nurses** report using restraints to manage patient agitation in critical care settings [7].

Agitation is often associated with acute confusion states, delirium, or substance withdrawal.

Prevention of Falls and Removal of Medical Devices:

92.5% of physicians and **75% of nurses** indicate that restraints are used to prevent falls [10].

70% of healthcare workers mention the risk of self-extubation or accidental removal of catheters, tubes, or IV lines.

30% report patients attempting to remove invasive ventilation equipment, justifying the immobilization of arms in such cases.

Patient Non-Cooperation:

60% of physicians and **40% of nurses** consider restraints necessary for patients refusing critical care interventions (e.g., non-invasive ventilation or emergency treatment).

Lack of Alternatives and Organizational Constraints:

40% of physicians and **20% of nurses** highlight the lack of effective alternative interventions as a reason for restraint use [9].

35% of physicians and **25% of nurses** cite staff shortages and the inability to provide continuous monitoring as a contributing factor.

Figure 2 : Practical Example Illustrating the Necessity of Physical Restraint in Critical Care

2. Training and Knowledge of Best Practices

A major finding of this study is the **lack of specific training** on physical restraint use:

95% of physicians and 85% of nurses report **never receiving official training** on restraint use and alternatives [7].

Among the **5% of physicians** and **15% of nurses** who received training:

Only **40% of them** found the training sufficient for informed decision-making.

72% of respondents believe mandatory training programs should be implemented to reduce excessive restraint use [8].

These findings highlight an **urgent need to improve staff competency** in managing agitated patients with alternative and adapted interventions.

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3. Complications Associated with Physical Restraints

The use of restraints is associated with several adverse effects identified by healthcare providers:

a) Physical Complications

85% of respondents report cases of skin injuries (abrasions, bruises, pressure ulcers) due to prolonged restraint.

40% of healthcare professionals have observed **circulatory problems** caused by excessively tight restraints.

27% of patients who underwent prolonged restraint developed **muscle atrophy** due to excessive immobilization.

b) Psychological and Emotional Effects

68% of nurses and 55% of physicians observed **increased agitation** and heightened anxiety in patients following restraint removal [4].

40% of respondents reported cases of **post-traumatic stress disorder (PTSD)** in patients subjected to prolonged restraint.

30% of physicians and 45% of nurses believe restraints can lead to **deterioration of patient-caregiver relationships**, increasing mistrust and stress.

c) Increased Clinical Risks

20% of physicians report cases of **pneumonia** associated with prolonged restraint due to decreased pulmonary capacity in immobilized patients [6].

14% of physicians cite **severe complications (sepsis, hypercatabolic syndrome)** linked to prolonged stress and immobilization.

Figure 3. Skin Injuries due to the use of Hand Cuffs

4. Ethical and Regulatory Considerations

The study highlights **significant ethical concerns**:

72% of physicians and 65% of nurses believe that physical restraint is **ethically justifiable only in extreme situations**.

80% of respondents advocate for the **implementation of stricter protocols and better regulatory oversight** of restraint use.

45% of physicians and 30% of nurses admit to feeling **moral conflict** when they must restrain a patient against their will.

Healthcare professionals express a **strong need for clearer legislation and enhanced supervision** to prevent misuse.

5. Impact on Families and Communication

Families of restrained patients often react negatively to restraint use:

57% of physicians and 40% of nurses report **negative reactions from families**, marked by distress, confusion, and resistance to restraint use.

38% of healthcare professionals state that families were **unaware** that restraints had been applied until they noticed marks or injuries on the patient.

62% of nurses believe that **improved communication** with families could reduce tensions and improve the acceptance of such measures.

Discussion

The findings of this study align with previous research demonstrating that the use of physical restraints in intensive care is widespread but often poorly regulated. A study conducted by Minnick et al. (2007) in the United States found that over 50% of ICU patients were subjected to physical restraints, which is comparable to the prevalence rates observed in our study. Similarly, a study by Kontio et al. (2012) in European hospitals indicated that staff shortages and lack of alternative interventions significantly contributed to restraint use, reinforcing findings from our research.

Comparison with Other Studies

Training and Awareness:

Our study revealed that 95% of physicians and 85% of nurses lacked formal training on restraint use. In contrast, a study by Choi et al. (2016) in South Korea demonstrated that hospitals with structured training programs had 40% fewer restraint incidents due to increased staff confidence in alternative de-escalation techniques.

In Scandinavian countries, restraint use has been significantly reduced due to legally mandated training programs, which emphasizes the role of continuing education in reducing unnecessary restraint application.

Complications and Ethical Concerns:

The adverse effects observed in our study, including pressure ulcers, PTSD, and muscular atrophy, align with findings from a study by Evans et al. (2018), which reported that restrained patients had a 3-fold higher risk of developing hospital-acquired infections due to restricted movement.

Ethical concerns were frequently cited, with 80% of respondents in our study advocating for stricter regulation. A study by Happ et al. (2011) supports this, indicating that healthcare

providers often experience moral distress when enforcing restraints due to conflicting professional and ethical obligations.

Recommendations for Practice Improvement

Based on our findings and comparisons with existing literature, we propose several recommendations to minimize reliance on physical restraints while ensuring patient safety:

Mandatory Training Programs:

Implement structured training programs focusing on non-restrictive alternatives, patient de-escalation techniques, and ethical decision-making [10].

Training should be required for all ICU staff and reinforced with periodic refresher courses.

Policy and Regulation Enhancements:

National healthcare agencies should develop clear protocols and legal guidelines regulating restraint use, similar to policies in Finland and Norway, where restraints require explicit medical justification and frequent reassessment.

Hospitals should establish multi-disciplinary review committees to oversee and evaluate restraint usage trends.

Exploration of Alternative Methods:

Increased adoption of sensory modulation therapy and pharmacological alternatives (e.g., mild sedation) to manage agitation without restricting movement.

Implementation of early mobility programs to reduce the physical complications of immobility caused by prolonged restraint use.

Improved Communication with Families:

Families should be actively involved in decision-making and provided with comprehensive explanations regarding restraint necessity and available alternatives.

Some hospitals in Canada have introduced family consent policies, ensuring that restraint application is discussed before implementation, except in emergency situations.

Figure 4: Mittens

Figure 5 : Posey Vest

Future Research Directions

While this study provides valuable insights, further research is needed to:

Investigate the long-term psychological impact of restraint use on ICU survivors.

Explore the effectiveness of non-restrictive intervention programs in preventing agitation.

Conduct comparative studies between high- and low-resource healthcare settings to evaluate variations in practice and regulatory impact.

The findings of our study highlight the reliance of healthcare professionals on physical restraint (PR) in Moroccan critical care, where it is regarded as a necessary medical intervention for ensuring patient stability and facilitating effective care. This perceived necessity of PR aligns with documented clinical situations, providing a rationale for its application. However, significant challenges arise as healthcare professionals navigate the ethical and legal dilemmas associated with PR, underscoring the complex balance between patient rights and clinical needs in critical care settings.

While PR is often used as a routine solution, this normalization may, in many cases, be inappropriate. Over-reliance on PR risks healthcare professionals overlooking alternative measures, which could inadvertently compromise ethical standards and diminish patient autonomy. Healthcare providers might perceive PR as beneficial but may not always critically reflect on its ethical implications, instead viewing it as a routine intervention.

The results of this study underscore the urgent need for structured guidelines and a comprehensive framework governing PR use in Morocco. Widespread acceptance and perceived necessity of PR among Moroccan healthcare providers—despite recognized complications for patients, families, and providers—indicate that such guidelines should thoroughly address legal protections for healthcare professionals, uphold patient rights, and prioritize ethical considerations, ensuring a balanced approach that respects both patient dignity and clinical needs.

Our findings also suggest that a lack of training on PR significantly contributes to its widespread use. Without adequate education, healthcare professionals are more likely to default to PR, unaware of alternative approaches or proper application criteria. Studies have shown that educational programs on PR reduce its use by increasing awareness among nurses and physicians. Such programs cover essential topics, including PR definition, purposes, emergency guidelines, staff responsibilities, and alternative interventions, thereby encouraging healthcare providers to consider other methods and fostering a more thoughtful approach to patient care.

Moreover, the lack of alternative methods and high workload, as identified in our study, are significant factors driving healthcare providers to use PR. These manageable factors create a challenging environment in which healthcare professionals may feel compelled to rely on PR. Integrating alternative practices into routine care and offering additional support to healthcare staff could help reduce PR reliance, promoting a more balanced approach in critical care.

Our findings could serve as a foundation for developing a PR reduction program tailored to the Moroccan healthcare context. Addressing specific challenges and needs identified in this setting, such a program could help reduce reliance on PR by incorporating relevant training, alternative methods, and ethical considerations aligned with Moroccan cultural and institutional practices.

Creating a supportive environment with the goal of reducing reliance on PR, as achieved in countries like the United Kingdom and Norway, is an inspiring aim. These nations have largely eliminated physical restraints in ICUs, using alternative methods, including chemical restraint, to minimize PR reliance in critical care settings. However, the cost of alternatives, such as chemical restraints, has been associated with longer ICU stays and occasional ineffectiveness, as highlighted in our study. These factors have influenced Moroccan healthcare professionals to continue using PR. A structured guideline could address these issues by establishing PR as a last-resort option while acknowledging the challenges healthcare providers face in managing patient care.

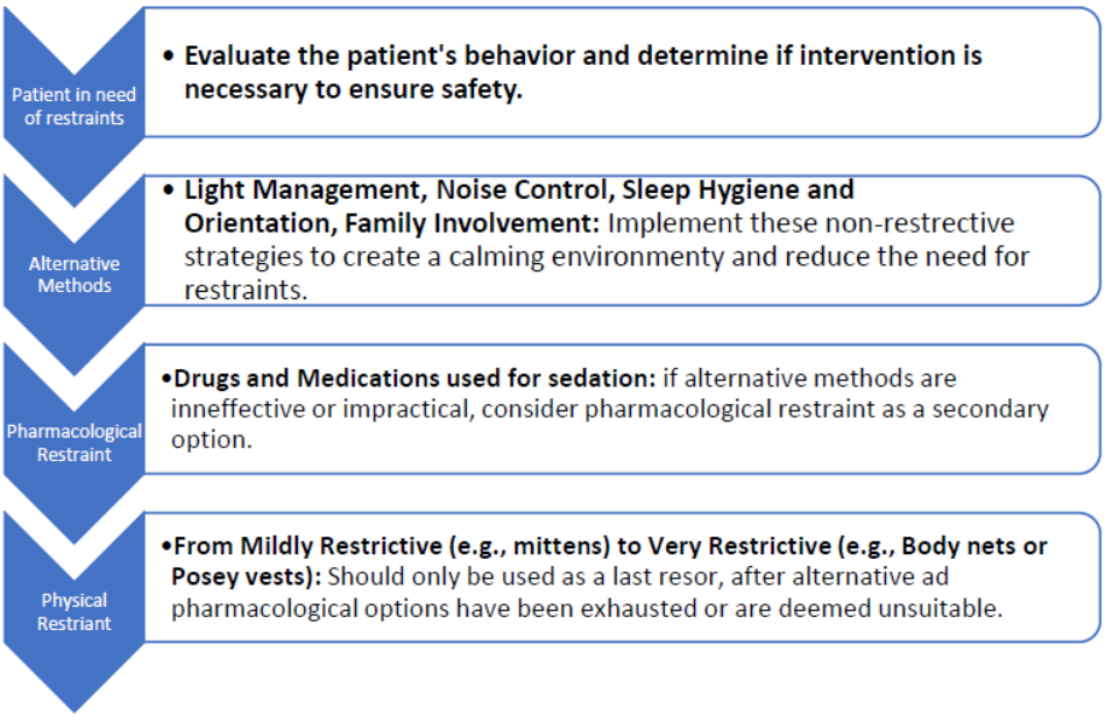

Figure 6 : Hierarchy of Intervention for Patients in Need of Restraints

Conclusion

Physical restraints remain a widely used intervention in critical care, but their ethical implications and adverse effects necessitate urgent reform. By implementing structured training, regulatory oversight, and alternative interventions, healthcare institutions can significantly reduce restraint use while ensuring patient safety. Lessons from global studies indicate that a multi-pronged approach combining education, policy reform, and alternative therapies is the most effective pathway towards ethical and sustainable patient care.

By promoting awareness, education, and regulatory reforms, healthcare institutions can work towards reducing reliance on physical restraints and fostering a more ethical and patient-centered approach to critical care.

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