



The Effects of Early Mobility in Reducing Length of Stay for Adult Patients in the Intensive Care Unit due to Trauma: A Systematic Review

Stephanie Klug, SPT, Molly Loftus, SPT, Stephanie Zaccaria, SPT, Dana Maida, PT, DPT, Geriatric Certified Specialist Janette Scardillo, PT, DPT
Department of Physical Therapy, The University of Scranton, Scranton, PA

INTRODUCTION

Patients who are in the Intensive Care Unit (ICU) due to trauma are at high risk for complications associated with immobility.¹ These patients often have extensive orthopedic and neurological injuries which requires the physical therapist (PT) to have an understanding of their various injuries, limb weight bearing statuses, and specialized equipment.¹ Mobilization difficulties stem from the combination of lines and tubes, medical instability, sedation, and severe weakness.² The combined effects of being patients with trauma and being in the ICU make it that much more difficult to mobilize these patients. To date there have been many research articles and 6 specific systematic reviews that identified positive benefits of early mobility delivered in the ICU.⁴ In these systematic reviews it was found that early mobility resulted in decreased ICU and hospital length of stay (LOS).⁶ It was also shown that physical therapy can be performed safely for those patients who are critically ill.⁷ None of these reviews, however, specifically investigated patients following trauma.

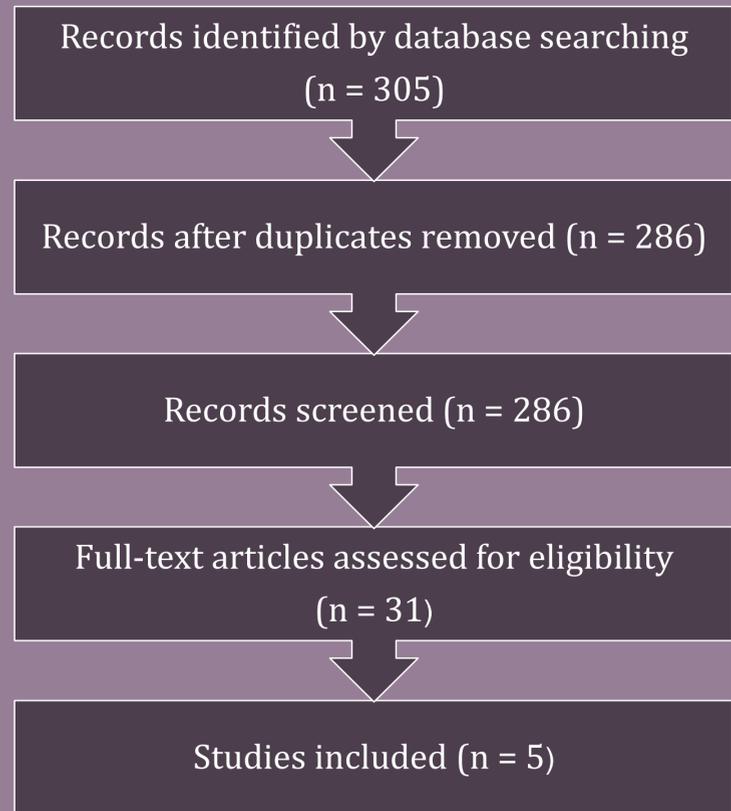
PURPOSE

The purpose of this study was to determine if mobility is an effective intervention to reduce LOS for adult (> 18 y/o) patients in the ICU due to trauma.

METHODS

A literature search of ProQuest, CINAHL, Healthsource, and PubMed was conducted using search terms: (“physical therapy” OR “physiotherapy”) AND (“Intensive Care Unit” OR “ICU”) AND (“length of stay” OR “LOS”) AND (“trauma”) NOT (“pediatric” OR “neonatal”). Search limits included English, peer reviewed, and published between 2008-2018. The selection criteria consisted of intensive care trauma patients, adults 18 and over, mobility as an intervention, and outcome measures of hospital and ICU LOS. Two reviewers independently assessed each study for methodological quality and came to a consensus based on Sackett guidelines. Additionally, three reviewers looked at each article for results and key findings.

Author (Year)	Sackett Level	Study Design
Booth K et al ¹	4	Pre and Post Intervention
Clark DE et al ⁸	3b	Case Control
Gillick BT et al ⁹	3b	Case Control
Pandullo SM et al ⁶	4	Retrospective
Sottile PD et al ⁷	4	Retrospective



RESULTS

- ❖ None of the 5 articles had a clear definition of early mobility
- ❖ 2 of 5 articles used a specific protocol to determine patient appropriateness for mobility^{6,8}
- ❖ 2 out of 5 articles had a specific treatment program that was implemented as quality improvement projects.^{1,8} The other 3 articles were completed retrospectively and no changes were made to usual ICU care^{6,7,9}
- ❖ All 5 articles involved a PT in their mobility program^{1,6,7,8,9}
- ❖ Only 2 out of 5 articles reported on mechanism of injury^{8,9}
- ❖ 4 out of 5 articles reported specific diagnoses^{1,7,8,9}
- ❖ Severity of injury was identified in 4 out of 5 studies with either the injury severity scale or the Glasgow Coma Scale used^{1,7,8,9}
- ❖ All articles reported on hospital LOS and ICU LOS with no significant difference found for hospital LOS in 4 out of 5 studies^{1,7,8,9}
- ❖ All 5 articles reported no significant difference for ICU LOS^{1,6,7,8,9}

CONCLUSION

Weak to moderate evidence is available on the topic of early mobilization for trauma patients. PT was involved in the ICU care of all patients included. Although statistically insignificant, hospital and ICU length of stay improved in all articles. Limitations included limited explanations of protocols, defined mechanism of injury, and definition of early mobility as a treatment, in addition to study designs and small sample sizes. Further research should be done to address these limitations.

CLINICAL RELEVANCE

Although ICU and Hospital LOS results were found to be insignificant, early mobility can still be considered as a physical therapy treatment for patients following trauma. All studies showed early mobility can be safe in a this population and can decrease length of stay. PT's play a vital role in the development of pre mobility guidelines and early mobility protocols for the trauma patient in order to increase safety and improve hospital outcomes.

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