



KEY POINT SUMMARY

OBJECTIVES

The objective of this study was to assess how bed design impacts both the amount of migration that patients undergo during head section articulation to 30 and 45 degrees and the extent of torso compression following the articulation.

Role of Bed Design and Head-of-Bed Articulation on Patient Migration

Davis, K. G., & Kotowski, S. E. 2015 | *Journal of Nursing Care Quality Volume 30, Issue 3, Pages E1-E9*

Key Concepts/Context

Patients often migrate towards the foot of the bed. Two reasons are cited for this occurrence: gravity over time and bed design. Patients are exposed to friction from sliding on the mattress. Raising the head of the bed increases the likelihood that the patient will migrate towards the foot of the bed; however, many patients require the head of bed to be elevated to treat any number of symptoms. Caregivers are exposed to musculoskeletal injuries from boosting patients in bed, and this maneuver is considered a high-risk patient-handling task.

Methods

The authors utilized a motion capture system (Motion Analysis) that quantified the instantaneous three-dimensional position of seven markers placed on the subject's body at specified bony anatomic locations and six markers on the bed. Video data were collected and analyzed using Cortex software (Motion Analysis) when the head of bed was articulated at two degrees: 30 and 45. This study was conducted on four intensive care unit (ICU) beds, with 40 trials completed by each participant. Volunteers were used as the subjects.

Findings

Study results revealed statistical analysis for 4/5 of the outcome variables studied (see paper for full dataset). Results varied among the four bed types. 9/12 subjects selected one bed type as most preferred and 10/12 selected one bed type as the least desirable. Authors noted that subject preference was similar to objective data outcomes.



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Design Implications

Designers should be aware of criteria related to bed design as they help their clients select furniture and equipment that impacts patient and staff outcomes.

Limitations

Small sample size limits generalizability.