

Reducing Falls in Hospitalized Adults Through Physical Activity and Mobility

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Full academic paper. Proposals and illustrative examples are presented as coursework.

Research Article Title

Impact of the End PJ Paralysis Interventions on Patient Health Outcomes at the Participating Hospitals in Alberta, Canada

Background Introduction

Wai et al. (2024) examined the effects of immobility during hospitalization and the potential of a structured mobility initiative to improve patient outcomes. Prolonged time in bed can contribute to physical deconditioning, loss of strength, functional decline, and other complications that may interfere with recovery. These effects are especially important in hospitalized patients because reduced mobility may also contribute to adverse outcomes, such as inpatient falls, pressure injuries, and longer hospital stays. The Johns Hopkins evidence-based practice model emphasizes examining the relationship between healthcare practices and measurable patient outcomes to guide clinical decision-making and improve the quality and safety of care (Dang et al., 2022).

The purpose of the study was to evaluate the impact of the End PJ Paralysis initiative on patient mobility, inpatient falls, length of stay, discharge disposition, and other health outcomes across participating hospital units. The initiative encouraged hospitalized patients to spend more time out of bed, to dress in their personal clothing, to ambulate daily, and to participate more actively in their recovery. By evaluating both mobility and outcomes such as falls and length of stay, the study provides evidence about whether a structured approach to increasing activity can improve outcomes for hospitalized adults (Wai et al., 2024).

Methodology

Wai et al. (2024) used a quantitative quasi-experimental interrupted time-series design to evaluate the End PJ Paralysis initiative across five participating hospital units in Alberta, Canada. The researchers compared patient outcomes during a 20-month pre-intervention period with outcomes during a 20-month intervention period and examined interruptions associated with the COVID-19 pandemic. The study included data from 32,884 hospitalized adults. Because the intervention was implemented without random assignment while outcomes were examined before and after the practice change, the design is consistent with Level II quasi-experimental research within the Johns Hopkins evidence hierarchy (Dang et al., 2022).

The intervention focused on increasing patient activity and participation in recovery through daily ambulation, encouraging patients to dress in personal clothing, assessing the risk of deconditioning, providing patient education, and developing recovery-focused care plans. The researchers used routinely collected clinical and administrative data from the Alberta Health Services Enterprise Data Warehouse, the Discharge Abstract Database, REDCap, and the Reporting and Learning System for Patient Safety. Outcomes included inpatient falls, length of stay, discharge disposition, pressure injuries, patient mobilization, and the percentage of patients dressed in personal clothing. Results were analyzed at the hospital-unit and month level rather than at the individual-patient level, allowing the researchers to evaluate patterns in outcomes before and after implementation of the mobility initiative (Wai et al., 2024).

Level of Evidence

Wai et al. (2024) is classified as Level II evidence according to the Johns Hopkins Evidence-Based Practice hierarchy because the researchers used a quasi-experimental interrupted time-series design. Level II evidence includes studies in which investigators introduce or evaluate an intervention but do not use random assignment to intervention and control groups (Dang et al., 2022). In this study, the researchers compared outcomes before and after implementation of the End PJ Paralysis initiative, but participants were not randomly assigned to separate groups. Therefore, the study meets the criteria for Level II quasi-experimental evidence.

Data Analysis

Wai et al. (2024) analyzed the data using IBM SPSS Statistics version 28. The researchers first used descriptive and exploratory statistics to summarize patient characteristics and study outcomes. Paired t tests were used to compare patient mobilization and dressing rates before and after the implementation of the intervention. The researchers also used segmented regression analysis within the interrupted time-series design to evaluate immediate changes and trends in inpatient falls, length of stay, discharge disposition, and pressure injuries across the study periods.

The hospital unit and month served as the unit of analysis rather than each patient. The researchers assessed the assumptions underlying the statistical analyses and reported regression coefficients, p values, and 95% confidence intervals to determine whether the observed changes were statistically significant (Wai et al., 2024). The use of numerical outcome data and statistical testing is consistent with quantitative research, which uses numerical comparisons and statistical analysis to examine patterns, relationships, and outcomes (Dang et al., 2022).

Ethical Considerations

Wai et al. (2024) analyzed patient health and activity data that had already been collected and stored in Alberta Health Services databases as part of routine hospital operations. The researchers did not recruit participants, assign patients to an intervention, or collect new information directly from patients. Patient Healthcare Numbers were used to identify unique records during data extraction; however, the results were analyzed and reported at the hospital-unit level rather than at the individual-patient level.

The article does not specifically report approval from an institutional ethics board, a waiver of informed consent, or the privacy protections used after the data were extracted. This limits the information available for evaluating the study's ethical procedures. Ethical standards for human-subjects research emphasize protection of privacy and appropriate informed-consent procedures, while recognizing that the specific protections required depend on the nature of the research and the information being used (CITI Program, 2026). Therefore, it would not be appropriate to assume that consent or ethics review was unnecessary simply because the researchers used previously collected data. The authors also reported no competing interests and received no funding for the study (Wai et al., 2024).

Quality Rating

Using the Johns Hopkins Evidence-Based Practice model, this article is rated B, or good quality. The study included a large sample of 32,884 hospitalized adults and used an interrupted time-series design, allowing researchers to compare outcomes across defined pre-intervention and intervention periods. The authors clearly described the intervention, data sources, outcome measures, statistical methods, and study limitations. They also assessed the assumptions of underlying statistical analyses and reported regression coefficients, p values, and 95% confidence intervals.

The study also had several limitations that reduced the strength of the evidence. Participants were not randomly assigned, there was no separate control group, and outcomes were analyzed at the hospital-unit level rather than the individual-patient level. The researchers relied on routinely collected administrative data, which limited their ability to control the quality and consistency of the available data, and implementation was interrupted by the COVID-19 pandemic. In addition, the initial reduction in inpatient falls was not sustained throughout the entire intervention period (Wai et al., 2024).

According to the Johns Hopkins Research Evidence Appraisal Tool, good-quality research is characterized by reasonably consistent results, a sufficient sample size for the study design, some methodological control, and fairly definitive conclusions (Dang et al., 2022). Although this study had a sufficient sample size and supported meaningful conclusions, its methodological limitations and variability in outcomes make a B rating more appropriate than an A rating.

Analysis of the Results / Conclusions

Wai et al. (2024) found that implementation of the End PJ Paralysis initiative was associated with an immediate reduction in inpatient falls of 2.22 events per hospital unit per month. The intervention was also associated with an immediate reduction in length of stay of 1.8 days, improved patient mobilization, and an increased likelihood of discharge home. However, the reduction in falls was not sustained as a significant trend throughout the full intervention period. The authors concluded that mobility-focused interventions may improve important patient outcomes, but consistent implementation, adequate resources, staff engagement, and ongoing support are necessary to maintain those improvements. Because the intervention included several components, such as daily ambulation, deconditioning-risk assessment, patient education, dressing in personal clothing, and recovery-focused planning, the effect of physical activity alone could not be determined (Wai et al., 2024).

Alignment to the EBP question

Wai et al. (2024) found that implementation of the End PJ Paralysis initiative was associated with an immediate reduction in inpatient falls of 2.22 events per hospital unit per month. The intervention was also associated with an immediate reduction in length of stay of 1.8 days, improved patient mobilization, and an increased likelihood of discharge home. However, the reduction in falls was not sustained as a significant trend throughout the full intervention period.

The authors concluded that mobility-focused interventions may improve important patient outcomes, but consistent implementation, adequate resources, staff engagement, and ongoing organizational support are necessary to maintain those improvements. This is consistent with the Johns Hopkins Evidence-Based Practice model, which emphasizes that successful translation of evidence into practice depends not only on the strength of the evidence but also on organizational fit, feasibility, resources, and stakeholder support (Dang et al., 2022).

Non-Research Article Title

Nursing Interventions for Fall Prevention in Hospitalized Aged People: An Integrative Review

Background Introduction

Rodrigues et al. (2023) examined nursing interventions used to prevent falls among hospitalized older adults. This population may be particularly vulnerable to falls because age-related changes, illness, impaired mobility, medication effects, and unfamiliar hospital surroundings can increase the risk of falls. Falls during hospitalization can lead to physical injury, loss of independence, fear of falling, longer hospital stays, and additional healthcare needs. Because many of these risk factors can be identified and addressed through nursing care, fall prevention is an important component of maintaining patient safety during hospitalization.

The purpose of the integrative review was to identify and summarize nursing interventions that can reduce fall risk among hospitalized older adults. By examining findings across multiple sources, the authors sought to identify nursing practices that may help prevent falls and improve patient safety in this vulnerable population (Rodrigues et al., 2023).

Type of Evidence

This article is an integrative review. Rodrigues et al. (2023) systematically searched multiple databases, evaluated selected literature, and synthesized findings from 20 previously published studies. From these studies, the authors identified 202 nursing interventions related to fall prevention in hospitalized older adults. The interventions included patient assessment, mobility support, education, environmental safety measures, use of assistive devices, individualized care planning, and ongoing reassessment.

Because the authors analyzed and integrated findings from previously published evidence rather than collecting new data from participants or testing a newly implemented intervention, the article is classified as nonresearch evidence. The Johns Hopkins Evidence-Based Practice hierarchy identifies integrative reviews as Level V nonresearch evidence because they summarize and synthesize existing research and theoretical literature rather than generate new primary research data (Dang et al., 2022)

Level of Evidence

According to the Johns Hopkins Evidence-Based Practice hierarchy, Rodrigues et al. (2023) is classified as Level V evidence because it is an integrative review. Level V evidence includes integrative reviews, literature reviews, quality improvement projects, case reports, and other forms of experiential or nonresearch evidence (Dang et al., 2022). Because this article synthesizes findings from previously published literature rather than generating new primary research data, it meets the criteria for Level V nonresearch evidence.

Quality Rating

Using the Johns Hopkins Evidence-Based Practice model, this article is rated B, or good quality. The purpose of the review is clearly stated, and the authors describe the databases searched, the criteria used to select studies, and the process for organizing and synthesizing the findings. Three reviewers participated in the selection and analysis process, which helped strengthen consistency and reduce the influence of a single reviewer. The authors also identified 202 nursing interventions across 20 studies and discussed limitations within the available evidence.

However, the included studies varied in design, setting, quality, and publication date, and several were of low quality. This variability limits the strength and generalizability of the overall conclusions. According to the Johns Hopkins Nonresearch Evidence Appraisal Tool, a B (good quality) integrative review demonstrates credible expertise, reasonably thorough analysis, and fairly definitive conclusions. Still, it may contain limitations that prevent it from meeting the criteria for high quality (Dang et al., 2022). Because Rodrigues et al. (2023) used a clear and reasonably thorough review process but synthesized a body of evidence with important limitations and variability, a B rating is more appropriate than an A rating.

Author's Recommendations

Rodrigues et al. (2023) recommend using a combination of individualized nursing interventions to reduce fall risk among hospitalized older adults. Recommended interventions include assessing gait and mobility, providing appropriate assistance with transfers and ambulation, using walking aids or gait belts when indicated, educating patients and families, reviewing medications, and reducing environmental hazards. The authors also recommend developing standardized fall-prevention protocols, reassessing fall risk when a patient's condition changes, and involving the interdisciplinary healthcare team in the planning, implementation, and evaluation of prevention strategies.

Overall, Rodrigues et al. (2023) support a multifactorial and individualized approach to fall prevention rather than relying on a single intervention. Their recommendations recognize that multiple patient and environmental factors influence fall risk and therefore require a combination of nursing assessment, mobility support, education, environmental modification, and ongoing reassessment to improve patient safety.

Alignment to the EBP question

This article aligns with the EBP question because it focuses on hospitalized older adults, an important subgroup within the broader hospitalized adult population at risk for falls. Rodrigues et al. (2023) identified several nursing interventions directly related to physical activity and mobility, including assessing gait and mobility, assisting with transfers and ambulation, providing walking aids, using gait belts, and developing individualized fall-prevention plans. These findings support the inclusion of mobility-focused interventions as part of a comprehensive strategy to reduce fall risk in hospitalized patients.

The article also strengthens the EBP question by showing that mobility should not be considered in isolation. Rodrigues et al. (2023) emphasize that effective fall prevention is multifactorial and should combine mobility support with patient assessment, education, medication review, environmental safety measures, and ongoing reassessment. However, because the article is an integrative review of multiple interventions, it does not establish that physical activity and mobility interventions alone are responsible for reducing inpatient falls.

Recommended Practice Change

The recommended practice change is to implement a standardized, mobility-focused fall-prevention protocol for hospitalized adult patients at risk for falls. The protocol should include assessment of gait, mobility, and deconditioning risk; assistance with transfers and ambulation; use of appropriate walking aids or gait belts; patient and family education; individualized mobility goals; and reassessment when the patient's condition changes. These interventions should be incorporated into the patient's daily plan of care and used as part of a broader, multifactorial fall-prevention approach.

Both sources of evidence support this recommendation. Wai et al. (2024) found that implementation of a structured inpatient mobility initiative was associated with an immediate reduction in inpatient falls, a shorter length of stay, and improved patient mobilization. Rodrigues et al. (2023) similarly identified mobility assessment, assisted ambulation, safe transfers, assistive devices, education, and individualized care planning as important nursing interventions for fall prevention. Together, the findings support the use of a consistent, multifactorial mobility protocol rather than relying on a single intervention.

The Johns Hopkins Evidence-Based Practice model recommends developing practice recommendations by considering the strength, quantity, and consistency of the available evidence and then determining whether the recommendation is appropriate for translation into practice (Dang et al., 2022). In this case, the two articles provide complementary evidence supporting a structured mobility-focused approach and indicate that mobility should be incorporated into a broader fall-prevention strategy.

Key Stakeholders

Identify three Key Stakeholders

Bedside nurses

Physical therapists

Nurse managers

Key Stakeholders Role in the Implementation Process

Bedside nurses would have the primary role in the daily implementation of the mobility-focused fall-prevention protocol. They would assess fall risk and mobility status, assist patients with transfers and ambulation, provide patient and family education, document the interventions used, and monitor for changes in the patient's condition. Nurses would also communicate concerns to the interdisciplinary team and adjust fall-prevention measures as needed.

Physical therapists would contribute specialized expertise in mobility, strength, gait, and balance. They would evaluate the patient's functional status, determine the safest level of activity, recommend appropriate assistive devices, establish individualized mobility goals, and provide guidance on safe transfer and ambulation techniques. Their involvement would help ensure that mobility interventions are appropriate for each patient's abilities and limitations.

Nurse managers would support implementation at the unit level by introducing the protocol, ensuring staff education is completed, helping secure necessary resources, and monitoring adherence to the practice change. They would also review fall and mobility data, identify barriers reported by staff, and determine whether the protocol is producing the intended patient outcomes over time.

The Johns Hopkins Evidence-Based Practice model emphasizes early identification and engagement of stakeholders because successful implementation depends on the involvement of individuals affected by the change and those who influence its adoption (Dang et al., 2022). In this practice change, bedside nurses, physical therapists, and nurse managers each contribute different expertise and levels of influence, making collaboration among all three important for consistent implementation and evaluation of the protocol.

Barrier to Implementation

One barrier to implementing this practice change is limited nursing time and competing priorities during busy shifts. When nurses are responsible for multiple patients, urgent clinical tasks may take priority over mobility interventions and fall-prevention activities, leading to delays or inconsistent implementation of these measures. Inconsistent implementation could reduce staff adherence to the protocol and make it more difficult to achieve sustained improvements in patient mobility and fall rates.

The Johns Hopkins Evidence-Based Practice model identifies workflow demands, staffing, available resources, and organizational support as important factors when determining whether

a practice change is feasible and sustainable (Dang et al., 2022). Therefore, successful implementation would require attention to workload, clear assignment of responsibilities, and adequate support so that mobility interventions can be incorporated into routine patient care rather than treated as an additional task.

Strategy to Overcome the Implementation Barrier

One strategy to overcome this barrier is to integrate a standardized mobility and fall-prevention checklist into the existing nursing workflow and electronic documentation. Incorporating the required steps into routine assessments would make the protocol easier to follow during busy shifts and reduce the likelihood of missed mobility interventions. The checklist could prompt nurses to document mobility status, assistance with ambulation or transfers, use of assistive devices, patient education, and reassessment of fall risk.

Nurse managers could review completion rates, identify patterns in missed interventions, and provide feedback to support consistent implementation over time. The Johns Hopkins Evidence-Based Practice model emphasizes incorporating practice changes into existing workflows, identifying measurable outcomes, monitoring implementation, and addressing barriers that may interfere with sustainability (Dang et al., 2022). Embedding the protocol into routine documentation would help make the practice change part of normal nursing care rather than an additional task competing for staff time.

Indicator to Measure the Outcome

The primary outcome for evaluating the practice change would be the inpatient fall rate, measured as the number of patient falls per 1,000 patient-days. Fall rates would be compared before and after implementation of the mobility-focused fall-prevention protocol to determine whether the practice change is associated with a reduction in inpatient falls. Tracking the rate over a defined period would also help determine whether any improvement is sustained rather than temporary.

The Johns Hopkins Evidence-Based Practice model emphasizes identifying measurable outcomes and comparing pre- and post-implementation outcome data to determine whether a practice change achieved the intended result (Dang et al., 2022). Using inpatient falls per 1,000 patient-days provides a standardized measure that directly corresponds with the outcome component of the PICO question and allows changes in fall rates to be evaluated over time.

References

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