



Research Article

Strengthening Fall Prevention Practices: Assessing the Impact on Nurse Knowledge and Patient Fall Incidence

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Background: Patient falls are a leading cause of injury and extended hospitalization in healthcare settings. Despite existing protocols, the Male Medical Ward of Wadi Al -Dawaser General Hospital, Riyadh Region, Kigdom of Saudi Arabia, experienced a preventable fall in January 2025, highlighting gaps in staff knowledge and protocol adherence.

Objective: This quality improvement project aimed to enhance nurses' knowledge on fall prevention and reduce fall incidence by implementing structured education and compliance tools.

Methods: A three-month intervention was conducted involving baseline audits, staff education sessions, environmental checks, and implementation of a fall risk assessment checklist. Nurse knowledge was evaluated via pre- and post-tests. Fall incidence rates and protocol adherence were measured.

Results: Nurse knowledge scores increased from 65% to 90%. Fall incidence decreased by 40% (from 5.2 to 3.1 falls/1000 patient-days). Compliance with fall prevention protocols improved from 72% to 94%, and patient/family engagement rose from 55% to 78%.

Conclusion: Structured education, clear protocols, and interdisciplinary collaboration significantly improved fall prevention outcomes. Sustainability will require continued audits, staff motivation, and leadership support.

Keywords: Patient falls, Fall prevention, Nurse education, Risk assessment, Patient safety, Compliance audit, Quality improvement

Introduction

Falls are among the most frequent adverse events in hospitals, especially in older adults and medically vulnerable populations. They are associated with increased morbidity, prolonged

hospital stays, and greater healthcare costs. Although fall prevention protocols exist in most facilities, inconsistent application and limited staff training often reduce their effectiveness. In January 2025, a patient fall with injury in the Male Medical Ward prompted a comprehensive review of prevention practices. This project was launched to improve nurses' knowledge and reduce the incidence of patient falls through structured interventions and evidence-based strategies.

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Aim

To strengthen fall prevention practices by enhancing nurse knowledge and reducing the incidence of patient falls.

Objectives

1. Improve nurse knowledge scores by $\geq 20\%$ through targeted education sessions.
2. Achieve $\geq 95\%$ compliance in conducting and documenting fall risk assessments.
3. Implement a daily fall prevention checklist for consistent practice.
4. Resolve 100% of identified environmental fall hazards.
5. Launch a Fall-Free Champion Program to increase staff engagement and motivation.

METHODOLOGY

Study Design

Quality improvement project using pre- and post-intervention data collection and analysis.

Study Setting

Male Medical Ward, Wadi Al Dawaser General Hospital, Saudi Arabia.

Study Participants

- Nursing staff of the Male Medical Ward (N=25)
- Hospitalized patients from January to March 2025

Sample Size

All staff involved in direct patient care and all reported falls during the project timeline.

Intervention Process

- Conducted staff training on fall prevention
- Administered pre- and post-tests on fall knowledge
- Implemented fall risk checklists and environmental safety rounds
- Created educational materials for staff, patients, and families

- Introduced a recognition program for “Fall-Free Champions”

Timeline

- **Jan 2025:** Planning, baseline audits
- **Feb 2025:** IRB approval, pre-training surveys
- **Mar 2025:** Staff training, checklist implementation
- **Apr 2025:** Post-training assessments, data analysis

Post-Intervention Assessment

Evaluated nurse knowledge, protocol adherence, fall incidence rates, and patient/family engagement levels.

Data Collection Tools

- Pre/post knowledge assessments
- Fall risk compliance audits
- Fall incidence reports per 1,000 patient-days
- Patient/family education feedback forms

Data Analysis

Comparative analysis of pre- and post-intervention metrics using descriptive statistics and trend comparison.

Ethical Considerations

Approved by the Nursing Improvement Administration. Patient data confidentiality maintained. Staff participation was voluntary.

RESULTS

Pre-Assessment

- Nurse knowledge score: 65%
- Fall incidence: 5.2/1000 patient-days
- Protocol compliance: 72%
- Patient/family engagement: 55%

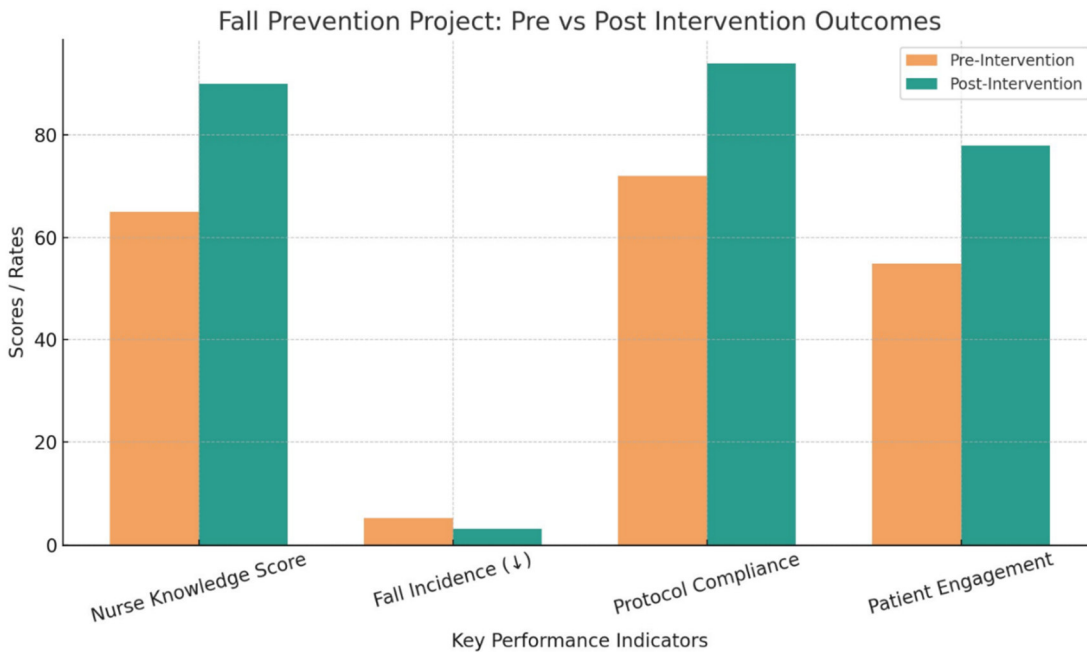
Post-Assessment (April 2025)

- Nurse knowledge score: 90%
- Fall incidence: 3.1/1000 patient-days
- Protocol compliance: 94%
- Patient/family engagement: 78%

Statistical Analysis

Metric	Baseline	Post-Intervention	Change
Nurse Knowledge Score	65%	90%	+25%
Fall Incidence Rate	5.2	3.1	-40%
Protocol Compliance	72%	94%	+22%
Patient/Family Engagement Score	55%	78%	+23%

The intervention resulted in a substantial knowledge gain, improved compliance, and a notable decrease in fall rates. Staff engagement in education and protocol usage contributed to these outcomes.



Interpretation of Results

The project achieved all targeted goals:

- A 25% increase in nurse knowledge confirms the effectiveness of education interventions.
- The 40% reduction in falls demonstrates improved risk awareness and timely interventions.
- Protocol compliance reached nearly universal levels, indicating strong buy-in.
- Enhanced patient/family education contributed to shared safety responsibility.

Education was a central factor in equipping nurses with confidence and clarity in applying fall prevention measures. Environmental audits addressed latent hazards, while the use of checklists introduced consistency. Recognizing staff through the Fall-Free Champion Program promoted accountability and motivation. The results align with literature showing that interdisciplinary collaboration and frequent monitoring reduce adverse events. Barriers such as shift variation and initial resistance were mitigated through open communication and leadership support.

Discussion

This project highlighted the impact of focused, data-driven quality improvement on patient safety.

Conclusion

The fall prevention initiative significantly enhanced nursing knowledge and reduced fall incidence in the

Male Medical Ward. Through targeted training, systematized risk assessment, and patient engagement, the project fostered a safer environment. These outcomes demonstrate that

focused quality initiatives, when well-executed and supported, can lead to measurable improvements in safety and performance.

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