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An Inter-Professional Collaborative Approach to Fall Prevention Education

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Literature Summary

- Fall prevention involves managing best practices to reduce the occurrence of falls. The Morse Fall Scale (MFS) was a targeted intervention used to assist the nurse to identify risk factors for falls in hospitalized patients on admission [1].
- The PDCA cycle is the combination of the first letters of Plan, Do, Check and Act, also known as the quality cycle, which processes summarizes, and analyzes the reasons for results and introduces scientific quality management and control. It has a certain degree of reliability, so it is widely used in continuous improvement projects [2].
- West, et al. [3] stated hospital fall incidents are costly and are financially responsible for inpatient falls. Therefore hospital-issued yellow "Fall Risk" armbands and nonslip yellow socks were fall prevention interventions executed.

CQI Model

Plan, Do, Check, Act (PDCA) [2]

Quality Indicator with Operational Definitions & Data Collection Methods

Two types of data were collected and examined. The first was nurse education data. The nurse education project included the MFS competency and a Continuing Education Unit (CEU) evaluation to gather nurses' feedback after project implementation. The second type of data was falls outcome data. This portion of the project involved the measurement of pre-implementation and post-implementation fall rates that were instrumental in determining the effectiveness of fall prevention interventions.

Clinical Setting/Patient Population/Average Daily Census

Forty-three registered nurses were directly responsible for the implementation of interventions on 10 non-ICU units (nine medical surgical and one intermediate step-down unit) in an academic medical center in the southeastern U.S. with 478 beds.

Program Objective

To reduce the incidence of falls by 10%.

Abstract

Inpatient falls that lead to injuries may be reduced by fall intervention education. The Plan-Do-Check-Act (PDCA) model was applied and explored whether the education of staff nurses on fall prevention interventions would reduce the incidence of falls.

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Introduction

The World Health Organization defines a fall as an event that results in a person coming to rest inadvertently on the ground, floor, or other lower level [4]. According to the American Nurses Association, the incidence of falls is related to nursing quality indicators; thus, a link exists between nursing interventions and patient outcomes. Despite fall prevention efforts by nurses, problems with patient falls occur at an alarming rate in acute care settings [5]. According to Metrixcare [6], the fall rate in healthcare institutions averaged from 5.09 to 6.64 across the nation in 2020. In contrast, the project site had an estimated fall rate of 2.27 falls per 1,000 patient days for fiscal year 2017.

Patient safety from harm or risk is an awareness in nursing care [7]. Hospital falls among medical-surgical inpatients are a pressing safety concern. The Centers for Medicare and Medicaid Services have identified this issue as a preventable event. Additionally, the Affordable Care Act emphasizes pay-for-performance to reduce events that harm patients [8]. Therefore, it has become an important consideration that Medicare no longer reimburses hospitals for the costs of additional care required due to hospital-acquired injuries [5]. In other words, hospitals are no longer being reimbursed for inpatient falls, increasing the value of and necessity for decreasing falls through continuous quality improvement. Consequently, management at the project site identified a need to re-educate the nursing staff on fall prevention interventions to reduce the fall rate.

Project Site and Reason for Change

Insufficient awareness of fall prevention interventions by nursing staff has been identified as a gap in nursing education. In March 2017, a random fall prevention internal audit was conducted at the project site. The measures included visual audits, documentation reviews, and care plan reviews. The results indicated that in 60% of the cases, the interventions of hospital-issued nonskid socks and bed alarms had not been put into place. In addition, 40% of the audits showed incorrect Electronic Medication Administration Record (eMAR) documentation on fall risk and lack of care plan initiation on identified high-risk patients. To address the issue, an improvement plan was implemented that provided education on fall interventions aimed at reducing falls among medical-surgical patients. Thus, the project attempted to answer the following practice-focused question: Will the education of staff nurses on fall prevention interventions reduce the incidence of falls?

Program

Patient safety and quality initiatives help guide nursing practice. A continuous quality improvement program and fall prevention education were implemented to decrease inpatient falls. The goal was to shift how nurses think about and address patient safety as it relates to falls. The Plan-Do-Check-Act (PDCA) model [2] was used.

- **Plan:** Reduce the incidence of falls.
- **Do:** Educate the staff on fall interventions.

The improvement plan was to educate nursing staff on evidence-based fall prevention interventions. This approach allowed the health care professional to access the best evidence to answer clinical questions and interventions used in clinical practice to improve patient care and outcomes. The interventions used were multifaceted and included the Morse Fall Scale (MFS) with targeted interventions. Evidence indicates that the interventions used are successful at reducing falls and fall-related injuries. The MFS tool allowed the nurse to identify risk factors for falls in hospitalized patients on admission [1]. Once the nurse had identified that a patient was at risk for falls, then fall prevention interventions were implemented. The nursing staff was required to put both a hospital-issued yellow “Fall Risk” armband and nonslip yellow socks on the patient [3].

Evaluation and Action Plan

The concept of patient well-being is the driving force behind nursing. Patient safety has been at the forefront of nursing for centuries. It was the goal of this project to educate nurses on how to apply critical thinking and clinical reasoning as it relates to fall interventions. In establishing conceptual clarity about fall prevention, a concept analysis on safety and falls was conducted during the project analysis. In the concept analysis, the concepts of patient safety and fall prevention were related to falls as an existing practice problem, and gaps in knowledge were identified in the needs assessment. Nurses must protect and promote patient safety through appropriate interventions to prevent high-risk situations. As the PDCA model continued the areas implemented were

- **Check:** Collect monthly data on fall incidents.
- **Act:** Implement change based on identified data.

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Results and Limitations

Participants

The participants were 43 registered nurses who were directly responsible for the implementation of interventions, such as providing non-skid slippers and fall-risk armbands. Two types of data were collected and examined. The first type involved nurse education data including the MFS risk assessment tool, and an evaluation to gather nurses' feedback after project implementation. Second, fall outcome data were collected. This portion of the project involved the measurement of pre-implementation and post-implementation fall rates to determine the effectiveness of fall prevention interventions. The fall prevention classes and fall data collection period took place from January to March 2019.

Nurse Education Data

The results of the two-way ANOVA showed that the interaction term between pre-education and post-education and the unit was not statistically significant ($p = .47$), meaning that the intervention had the same effect no matter the unit. The results of the two-way ANOVA simple main effects analysis showed a statistically insignificant difference in rates among the units ($p = .80$) and a statistically insignificant difference in rates among the interventions ($p = .41$). (Table 1) shows the mean fall rates by intervention type (pre-intervention and post-intervention) and individual unit. Three units showed a noticeable increase in fall rates, but four units had comparatively sizeable decreases in fall rates.

	Pre-education intervention (N = 2 months) Mean ± SD	Post-education intervention (N = 2 months) Mean ± SD
Cardiac	13 ± 24	17 ± 24
General Surgery	16 ± 40	6.1± 66
Trauma	53 ± 19	5.1 ±16
Surgical Oncology	3.9 ± 55	5.6 ± 2.9
Stroke	79 ± 49	2.3 ± 0.2
ENT	46 ± 40	0.8 ± 1.1
Renal Transplant	39 ± 03	3.0 ± 4.2
General Medicine	47 ± 45	0.8 ± 1.2
Intermediate Care	13 ± 19	3.7 ± 5. 2

Table 1: Mean Fall Rates by Intervention Type and Unit ID.

Fall Outcome Data

(Table 2) shows the mean fall rates by intervention type. The fall rate decreased in the 2 months following the educational intervention, although it was not a statistically significant decrease (Table 2).

	Pre-education intervention	Post-education intervention
	(N = 2 months)	(N = 2 months)
	Mean SD	Mean SD
Fall Rate	4.2 ± 2.9	3.4 ± 3.1

Table 2: Descriptive Statistics of Mean Fall Rates by Intervention Type.

Quality and safety were demonstrated by educating staff about evidence-based interventions that promoted interdisciplinary collaborative efforts at the project site. The interprofessional collaborative approach included the supportive stakeholders at the project site.

A strength of this project was the use of the PDCA model as a guideline for the implementation of fall prevention strategies for the educational portion of the project in the following manner:

Plan: Discussion involved a plan for research-based changes that should reduce fall rates.
Do: Education sessions were conducted on the fall-risk assessment and interventions, including the MFS risk assessment tool and the targeted interventions.
Check: Nursing staff gained an understanding of how the scale functioned paired with the targeted fall prevention interventions as evidenced by the MFS competency scores.
Act: Evidence of the nurses' evaluation of the education project using a Likert scale (1 = strongly disagree to 5 = strongly agree).

(Table 3) presents the mean evaluation ratings for the education program. The data were collected using a Likert Scale-based questionnaire with possible scores ranging from 1 (strongly disagree) to 5 (strongly agree).

Content Area	Mean
Content	4.53
Setting	4.6
Instructional methods	4.66
Learner achievement of objectives	4.69
Faculty/presenter effectiveness	4.62
Note. There were 43 participants.	

Table 3: Mean Evaluation Ratings of the Educational Program.

Lessons Learned/Nursing Implications

A nurse practice scholar needs to have a fundamental and strong understanding of research design and interpretation to appraise and incorporate research-based evidence into practice and conduct clinical projects [9]. At this point, objectives met the learning objective as it relates to the American Association of College of Nursing's Essential of Doctoral Education for Advanced Nursing Practice essential VI "Interprofessional Collaboration for Improving Patient and Population Health Outcomes" [10].

The most rewarding aspect of this project was the encouragement and support provided by nursing leadership and colleagues. It was also gratifying to be acknowledged for my efforts by the addition of my teaching video to the hospital's system. This recognition affirmed my leadership abilities and demonstrated the positive social effect that led to the effectiveness of fall prevention education for nursing staff and the effect on patient outcomes expected by the organization in the future.

Conclusion

The purpose of this project was to implement and evaluate nursing staff education on the Morse fall scale, and evidence-based fall-prevention intervention. Evaluation of staff nurse knowledge related to using the scale and data that indicated the number of patient falls were collected before and after implementation of the education project. The education project was effective in decreasing fall rates from 4.2 to 3.4 falls per 1,000 days over a 2- month period; it also resulted in an average Morse fall scale assessment score of 90%. The outcome of the project demonstrated that falls can be prevented through improved education and the use of fall interventions.

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