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Fall Prevention: A Deliberative Nursing Process

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Abstract

Despite the presence of fall and injury prevention programs, quality improvement initiatives and extensive research, falls and fall-related injuries continue to be among the most commonly reported adverse events in patients over 65 in acute care settings. Inpatient falls are a leading cause of hospital-acquired injuries contributing to the increased length of stay, higher overall morbidity rates, and substantial financial burdens.

The necessity to formulate a plan for the reduction of falls and related injuries in the elderly on a 24-bed oncology unit was identified by Registered Nurses to Bachelor of Science in Nursing (RN-BSN) degree completion student nurses seeking to implement a quality and safety project to meet their final capstone project objectives. A pilot study to assess patients at risk for fall on an oncology unit was implemented and carried out over a 31 day period. Registered nurses (RN's) and nurse techs, on the oncology unit, were educated on use of a patient fall prevention kit, which was developed by RN-BSN students. The creation of fall prevention staff education processes and implementation of fall prevention kits were key to decreasing falls incidents. Data analysis to compare fall incidents prior to and after staff education implementation and completion indicated improvements in safety awareness and staff adherence to fall prevention strategies. Findings show a patient falls and fall related injury rate of zero for this patient population for the duration of the study.

Keywords: Evidence based practice; Fall prevention; Research; Professional practice; Knowledge base of health personnel

Introduction

Preventing falls and fall related injuries are two major patient safety goals in acute care settings. Falls are the most frequently reported hospital acquired incidents resulting in patient injuries, with approximately 700,000-1,000,000 inpatient falls in hospitals annually. Second only to medication errors, falls are the most common cause of injury-related deaths in adults over the age of 65. Patient falls and injuries incurred as a result of a fall contribute to increased length of stay, higher health complication rates, and a resulting overall poor prognosis in the elderly population. Additionally, there is a substantial economic and financial burden associated with non-reimbursable costs and unanticipated discharge to rehabilitation facilities [1].

According to the National Database of Nursing Quality Indicators [2], and the Agency for Healthcare Research and Quality (AHRQ), a patient fall is defined as "an unplanned descent to the floor with or without injury." Centers for Medicare and Medicaid Services (CMS), defines patient falls as an "unintentionally coming to rest on the ground, floor or other lower level" [3]. Therefore, patient falls in acute care settings are included in fall data whether the patient sustained an injury or not. To effectively reduce falls and related injuries, the target group most likely to fall should first be identified. Age, comorbidities, surgery, anesthesia, medications, environment, diagnostic testing, and physical limitations all place patients at risk for falls [4]. Hospitals nationwide have implemented safety and fall reduction programs with a measure of success, but sustaining a significant reduction in falls and fall related injuries in the elderly has remained elusive [5].

Success and sustainability of fall prevention programs in the acute care setting rely largely upon staff engagement and compliance to consistently utilize processes to prevent patient falls. Essentially, if the RN and nurse tech knowledge level related to fall prevention processes increase, and, access to resources such as fall prevention kits are implemented, the rate of fall incidents and associated injuries will decrease. Fall prevention in the elderly patient can be positively impacted via a multidisciplinary partnering, utilizing tools such as bed and chair alarms, validated fall risk assessment tools, and education targeting RN's, nurse techs, the patient, and family members.

Furthermore, standardization of fall prevention practices should be built around a culture of safety, and include frequent evaluation and modification of processes to ensure the provision of a continuously safe patient environment [6].

Aim of the Study

The goal of this study was to increase the knowledge base of RN's and nurse techs caring for elderly patients at risk for falls on an oncology unit. Providing education to staff, patients and families is essential in increasing fall risk awareness. Implementation of a fall prevention kit can improve staff compliance in utilizing fall prevention processes that include streamlined task for obtaining required safety modalities for fall and injury reduction; thereby reducing falls and related injuries.

Methods

Participants

A 31-day pilot study was conducted on a 24-bed surgical Oncology unit with a sample size of 75 patients, 65 years of age and older.

Measures

The deliberative nursing process of Ida Jean Orlando was used to guide this study, this study has five stages: assessment, diagnosis, planning, implementation, and evaluation [7]. The existing fall and injury prevention program at the 200-bed acute care facility was assessed for the purpose of isolating deficiencies in practice contributing to falls and injury risk.

The current program utilizes a comprehensive and systematic evidence-based approach for the provision of a safe patient environment through risk identification and application of specific strategies for prevention. For the purposes of this project; an evaluation of four core areas, comprised of available tools, organizational support, education of staff and patients, and the patient-care environment was performed to identify deficiencies. Gaps in consistency, implementation, and education of staff were identified as contributing factors placing patients at an increased risk for falls and fall related injury. Staff awareness of fall/injury risk and utilization of reduction strategies in accordance with the institutional policy were evaluated.

A 24 bed oncology unit was chosen for this study, as this was where one of the RN student researchers was employed and it was preferred by the student that a daily presence was maintained to monitor participation and staff engagement in the study. Discussion and approval of the pilot study took place with key stakeholders participating which included the unit manager, coordinator & chair of falls and injury prevention program, and clinical leaders. Upon careful review of strategic planning through SWOT analysis; which is a process used to identify internal strengths and weaknesses of a system, and for identification of external opportunities and threats faced in project planning, SMART goals were developed. SMART goals are defined as goals that are specific, measurable, achievable, results-focused and time-bound [8]. Method for successful implementation of the study was formulated using SMART goals [9-13].

Prior to the study, a pre-implementation survey was distributed to a total of 34 RN's and 13 nurse techs. The surveys were designed by the RN student researchers to appraise knowledge and perceptions about falls and fall related injury risk. Each survey contained eight questions with six written to measure staffs' knowledge of falls risk, and the remaining two questions were designed for evaluation of staffs' perceptions of patient safety in the acute care setting environmental. Twenty surveys were completed by the RN group yielding a 59% return rate. While eight surveys were completed by the nurse tech group yielding a return rate of 61%.

All surveys, individual answers for questions pertaining to knowledge were examined to extrapolate a mean score data. Perception questions were analyzed separately. Pre and post survey data was then compared [14-18].

Review of the data indicated knowledge deficits were highest in medications that contributed to falls and injury risk, and bed and chair alarm usage. Targeted education for the RN's and nurse techs on the oncology unit, focused on falls related to patients who fell after receiving pain medications and patients who fell after their bed or chair alarms were left in the off position. Education was presented by the Fall Prevention Committee during a staff meeting in a forty five minute facilitated session using power point as an outline to ensure content was adequately covered. A list of commonly administered medications contributing to increased falls and fall related injury risk was distributed to the RN's and techs as a quick reference tool for calculating fall risk scores. Examination of perception analysis indicated that current fall prevention strategies were not always used because items such as gait belts and chair/bed alarms were not easily accessible or centrally located. This evidence provided valuable insight into reasons why fall prevention processes were not being adhered to by RN's and nurse techs. Essentially, this knowledge was instrumental and was the driving force behind the development of the fall prevention kits as a means to encourage RN's and nurse techs compliance in always using fall prevention resources. The fall prevention kits included bright yellow arm bands, a pair of bright yellow skid resistant socks, a chair alarm, gait belt, and Risk for Falls signage to place at the patients' door [19-22].

Post-implementation survey response rate was significantly lower than the pre-implementation survey response rate. Due to a decrease in RN's from 34 to 32 on the oncology unit, there were 32 RN surveys and 11 nurse tech surveys distributed. Eleven of the RN's surveys were completed while only 5 of the nurse tech surveys were completed and returned. The final yield was 34% of RN surveys and 45% of the nurse tech surveys. The two-week time period for the post-implementation survey completion occurred while three other non-related surveys were being conducted on the oncology unit, suggesting a possible underlying cause for the decreased number of falls and fall related injury surveys returned.

Nonetheless, results for knowledge assessment indicated improvements, as mean scores increased post implementation for RN's by 7.3%, and nurse techs by 2.8%. Evaluation of perceptions after project completion revealed a strong belief that more safety strategies were utilized due to the availability of fall prevention kits. Staff commitment to continued use was high, suggesting favorable levels for sustainability [23-26].

Post-implementation surveys were conducted with staff in the same manner as pre-study surveys, with a survey geared to the role of the RN's, which included medication administration, and a survey suitable for nurse techs in their roles. The post study surveys were designed by the RN-BSN student research team. Comparison of findings were investigated to evaluate the knowledge and perception of falls and fall related injury risk, the usefulness of fall prevention kits and fall prevention processes sustainability [27].

Tools

Fall prevalence rounds were conducted on four separate days during the initial start of the study, on the oncology unit where the baseline analysis occurred. All elderly patients, 65 and over were assessed for injury & fall risk upon admission and once every 12 hours thereafter. The assessments were conducted using a risk for fall-related injury assessment tools which assessed age, bones, coagulation, and surgery (ABCS), and the Morse Fall Scale. Re-assessment and scoring adjustment were required when there were changes in patient fall risk status such as; physiological, mental, medication, or the occurrence of a fall. Risk for falls mobility cards, which were placed on the wall outside of patients at risk for falls, room doors. The mobility cards were to be completed upon admission and once every 24 hours thereafter during the patients' stay in the acute care setting.

An education session was held during a staff meeting, which reviewed fall risk assessment tools and medications that may put elderly patients at risk for falls. An actively engaged discussion followed to examine the types of medications that could result in adverse events and contribute to patient falls. Additionally, a handout of commonly used pain medications were provided to the RN's, allowing for convenient reference and review. Assessment of learning was accomplished through a post survey to compare knowledge and perception level changes in Rn's and techs caring for the elderly patients on an oncology unit.

Results

The pilot study was held over a one-month period, with chart audits ongoing for 31 days. A total of ten components were evaluated using the audit tool. The aggregate number of patients that had a Morse Fall Score of 45 or greater, and therefore at a high risk for falls, was
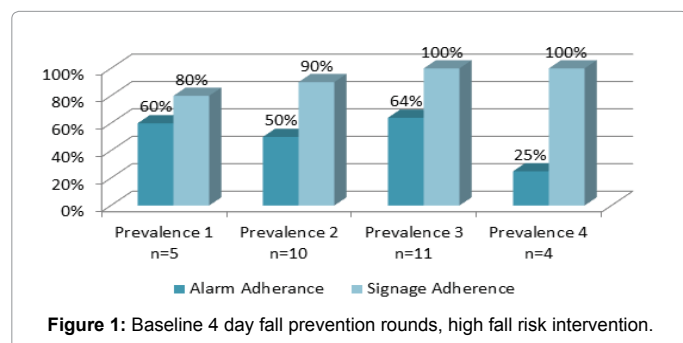
Figure 1: Baseline 4 day fall prevention rounds, high fall risk intervention.

Knowledge Assessment	Mean Score	Surveys Returned
RN Score Pre-Implementation	82.30%	N=20
RN Score Post-Implementation	89.60%	N=11
Tech Score Pre-Implementation	92%	N=8
Tech Score Post-implementation	94.80%	N=5

Table 1: Knowledge assessment of fall prevention (Survey report).

75. Results for compliance with auditing tools showed a statistically significant improvement overall as follows: bright yellow armband, 97%, bright yellow skid resistant socks, 100%, sign on door 97%, gait belt 91%, total alarm usage overall was 49%. When fall kits were used, the alarm application was 61%, kits used for high fall risk patients was 73%. Additionally, when alarm and signage use was compared to baseline fall prevalence rounds, compliance for alarms increased 12% (from 49% to 61%), and signage improved 5%, from 92% to 97%.

There were no falls on the pilot unit for the month fallowing staff education and during the implementation of the falls prevention process, which shows a statistically significant decrease in the number of elderly patient falls. Due to institutional constraints, actual fall and injury data for months prior to the study could not be presented in this paper for comparison other than falls occurred on the pilot unit, specifically related to the lack of implementing a fall prevention process such as the current policies and procedures. Staff failure to comply with required fall prevention measures revealed deviations in adherence to facility policy (Figure 1). Survey results of knowledge assessment of fall prevention are presented in Table 1.

Discussion

Improved staff knowledge regarding fall risk awareness was achieved as evidenced by; the increase in mean scores from survey comparison, instruction through PowerPoint presentation and targeted education proved beneficial to enhancing overall knowledge of staff caring for elderly patients in an acute care setting.

Moreover, medication lists were especially helpful to RN's, as it was customized for pain medications frequently administered on the pilot unit. Improved knowledge translated into practice and was a contributing factor in achieving a fall rate of zero for the pilot study period.

Development of the fall prevention kits and the placement of the kits in a location that was both visible and convenient for staff was critical to the successful utilization of fall prevention resources. Analysis of findings strongly suggests that using the fall prevention kits led to the end result of zero falls for the duration of the study. Staff reported a high level of satisfaction with the availability of fall prevention resources gathered into kits readily available for use. The staff were inspired by improvements in workflow and more efficient use of time. They shared a renewed commitment to patient safety throughout the project implementation.

The drive for development of this project was multi-facets, but the motivating force to reduce falls in the elderly far outweighed other factors. A retrospective review of unit fall data provided a starting point for the identification of specific modifiable factors placing patients at risk. Through the evaluation of previous falls and documentation, it was discovered that fall strategies were not being implemented fully for the provision of safest patient environments. For actual falls on the focus unit, there were deficiencies in the application of alarms (bed and chair), as well as gait belt use. Staff and interdisciplinary team members were encouraged to informally verbalize concerns over why these deficiencies occurred, as well as offer suggestions for improvement. The staff brought forth a wealth of information pertaining to obstacles encountered that challenged adherence to facility fall prevention policy and ideas to mitigate these shortcomings.

Because total expected outcomes for signage and alarm implementation were lower than anticipated, results revealed opportunities for improvement for these areas and they were incorporated into the unit pilot study and kit build.

Conclusion

Falls and fall related injuries represent a persistent problem throughout hospitals and acute care settings. Despite fall reduction and safety program implementations, this adverse event continues to be the most frequently reported hospital acquired injury, second only to medication errors. The goal of formulating a plan to reduce falls and their related injuries was attained. An assessment of staff's knowledge indicated a deficit in the area of pharmacology and chair alarm utilization. Perception analysis data highlighted the issue that tools needed such as gait belts were not readily available or in a location that would encourage use. With this information, an educational program was formulated, comprising of a PowerPoint presentation and a list of medications frequently administered on the pilot unit that has the potential to contribute to fall incidents. A fall kit was assembled consisting of a gait belt, chair alarm, and signage. The kit was placed in the identified high-risk patient rooms on admission, resulting in improved compliance with facility guidelines.

While the numbers suggest below optimal adherence in the usage of chair alarms over the 31-day pilot project, there was a measurable improvement of chair alarm utilization when the fall prevention kits were used. Changes in the plan will include a comprehensive auditing of fall prevention strategy utilization and frequent review of factors placing patients at risk. Ongoing education regarding medications contributing to adverse events will enhance the assessment of fall risk. The overall implementation and results of zero fall during the trial was sufficient evidence for the continued use of fall prevention kits. This improvement process will be adopted hospital-wide as a method to maximize best outcomes through evidence-based practice and will be included in magnet renewal application in 2019. Pending future re-analysis of this program, after hospital-wide execution of this evidence-based study, the potential for national or international application should be explored in order to determine viability.

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