Participation in Fall Risk Self-Assessment by Hospitalized Oncology Patients

Falls and related injuries in acute-care hospitalized adults pose serious safety and health concerns and are recognized as nursing-quality indicators by the American Nurses Association and the National Quality Forum.[1,2] Assessment instruments help nurses categorize patients' risk level, however, prevention programs that do not target individual risks may fail to keep patients safe.[3–5] Targeting a patient's specific risks and involving the patient show promise in reducing falls and may increase the sustainability of fall prevention programs.[5–9] This project aimed to reduce falls by using a self-assessment fall risk questionnaire in which the patient participates in identifying their fall risks.

Fall Risk Assessments

Many fall risk assessment instruments have been developed since 2005, when reducing harm from falls became a National Patient Safety Goal.[10] Most recently, fall prediction models or auto-scoring of fall risk assessment using the inpatient electronic health record (EHR) have been developed.[11] Self-assessments have been used in hospitals to actively engage the patient in fall prevention.[7,11–15] Nurses at the clinical hospital site for this quality improvement project use the Johns Hopkins Fall Risk Assessment Tool, but not a patient self-assessment.[16]

Definitions and Categories Related to Falls

A fall is "an unplanned descent to the floor (or an extension of the floor, eg, trash can or other equipment) with or without injury to the patient."[2] Types of risk factors are designated as intrinsic or extrinsic, or as modifiable or nonmodifiable. Behavioral factors, such as multiple medication use, and biologic factors, such as age or weakness, are intrinsic to the patient whereas environmental factors, such as an obstructed path, and socioeconomic factors, such as low income, are extrinsic. Some risk factors, such as poor lighting, can be modified, unlike many biologic factors.[17] Fall events may be classified as anticipated, unanticipated, witnessed, or unwitnessed. Falls that are unwitnessed or noninjurious may be underreported.[18]

Incidence and Financial Implications of Falls and Injury

Falls and injuries from falls are significant problems in the United States and globally. For US adults in 2014, the crude rate for unintentional death due to falls was 13.45 per 100,000 population.[19] Falls are the leading cause of unintentional injury or death in persons aged 65 years or older in the US.[20] Between 3% to 20% of inpatients fall during their hospital stay and 30% to 51% of those who fall suffer an injury.[21] During 2015, falls in US older adults accounted for $31 billion in direct medical costs to Medicare.[22] Injuries from falls in the hospital increase length of stay (LOS) an average of 6.3 days and cost an average of $14,056 per injury.[23] Since 2008, hospitals are no longer being reimbursed for these costs.[24] Indirect costs to patients are related to psychological injury, which can cause fear of falling again and decrease productivity and quality of life.[22]

> Evidence suggests that targeting individual factors is more effective than implementing standardized bundles based on fall risk assessment scores.

Fall Prevention

Preventive strategies are often generic bundles based on fall risk assessment scores.[3,5] Participatory strategies to engage hospitalized patients, such as soliciting their perspectives on risk,[25,26,27] calculating the likelihood of preventive behaviors,[26,28,29] and using formal self-assessments have been employed,[7,12–15] with 1 study demonstrating reduction in fall incidence by 19%.[7] This project used a conservative goal of 10% reduction.

Project PICOT Statement and Objectives

In adult patients admitted to an oncology unit of an acute care hospital *(P)*, how does patient participation in fall risk self-assessment *(I)* compared to usual fall prevention practices *(C)* affect the rate of falls *(O)* within a 3-month period *(T)*? Project objectives to be achieved include: 1) the overall fall rate on the Bone Marrow Transplant (BMT) oncology unit will decrease by 10% from the baseline period to the follow-up period; and 2) the percentage of patients who fall within 1 month after completing the Fall Risk Questionnaire during the follow-up period will be 10% less than the percentage of patients who fall in the baseline period.

Review of Literature

Extensive database searches of peer-reviewed journals identified hospital fall prevention studies in adults. Recurring themes in 25 articles most relevant to the project include risk assessment, multiple targeted interventions, and patient education and participation.

Risk Assessment

Multiple studies have identified fall risk factors in the hospital setting or examined the predictive ability of fall risk assessment instruments.[16,30–35] Studies most often focused on associations of age, fall history, and cognitive status risk factors associated with falls. Cognitive status was more consistently associated with falls than age or fall history alone in 4 of these studies. Predictors were cognitive impairment combined with fall history, confusion, level of consciousness, and narcotics/sedatives.[30,33–35]

Limitations of fall risk assessment instruments were found in 3 studies. The instruments were the John Hopkins Fall Risk Assessment Tool, classifying the majority of those who fell as low or moderate risk;[16] the Morse Fall Scale, correctly predicting only 10.3% of falls;[32] and the Schmid Fall Risk Assessment, classifying 41% (148/358) of fallers as low risk.[16,32,36] Evidence suggests that targeting individual factors is more effective than implementing standardized bundles based on fall risk assessment scores.

Multiple Targeted Interventions

Evidence in a meta-analysis of 17 randomized controlled trials in hospitals[5] and a systematic review[8] suggest that multiple, targeted interventions can reduce hospital falls. In 2014, Cameron et al found sufficient evidence to conclude that multiple targeted interventions reduce fall rates, whereas single interventions did not.[5] Similarly, Miake-Lye et al reviewed many of the same studies and found that multiple, targeted interventions reduced inpatient falls by up to 30%.[8] The optimal combination of interventions was not identified, but common components were patient and staff education, and bedside risk signs. Although studies have not consistently shown which interventions are most effective, those that involve patient participation in managing their fall risk show promise.

Patient Education and Participation

A meta-analysis of 26 studies,[37] 3 controlled trials,[6,7,38] a prospective cohort study,[27] 6 descriptive/correlational studies,[14,15,24,26,28,39] 2 qualitative studies,[40,29] and 2 instrument development studies[12,13] examined patient education and participation in hospital fall prevention.

Patient Education

Evidence suggests that educational material combined with face-to-face education linked to personal risks increases awareness of fall risks better than educational material alone.[37] Tailoring education to perceived fall risks changed self-perception from low to high risk, matching the nurse's assessment, in a significant proportion of patients.[38] Participatory question-and-answer education reduced fall incidence from 19.3% to 0% and improved self-confidence in oncology patients.[7] Patients and health care providers may not proactively seek or supply prevention information.[40] Kullberg et al found that only 39% of oncology patients reported discussing fall risk with a doctor or nurse.[39] A participatory approach increases patient reflection, motivation, and involvement.[41]

> In addition to decisions being influenced by asking or waiting for help to get out of bed and the patients' relationship with their nurses, their perceived ability, room environment, and possibility of falling were important factors in their [patient] engagement in preventive behaviors.[29]

Patient Participation

Hospitalized patients have participated in fall prevention by engaging in risk assessment or sharing their perspectives on their preventive behaviors. Dykes et al demonstrated a 15% reduction in falls and a 34% reduction in injurious falls using a patient-centered approach to engage patients and families in verbalizing risk factors and prevention plans.[6] Studies in South Korea[12] and Taiwan[13] reported adequate reliability and validity of self-assessment questionnaires administered by interview methods to adults in acute care and to high-fall-risk elderly adults, respectively.[12,13] Choi et al compared the patient's perceptions to the nurse's fall risk assessment, however the nurse's assessment could have been biased after assisting the patient with the self-assessment.[12] Shyu et al compared the patient's perceptions to fall history only.[13]

In the studies using adapted instruments, 1 reported the majority (51%) of the patients (n=300; age>65 years) overestimated their risk compared to their nurse's assessment[27] while the other reported the majority (55%) of the patients (n=158; mean age=69.9 years, range 31–98 years) underestimated their risk.[26] Knox studied oncology patients (n=15) and observed that patients who reported being weak before hospitalization most consistently matched their nurse's assessment of their high fall risk.[25] Two descriptive studies conducted in hospitals evaluated different electronic patient self-assessment instruments.[14,15] Sitzer tested an interactive, 6-item questionnaire with acute care patients upon admission.[14] Tzeng et al used an interactive

self-assessment that rehabilitation inpatients reported to be an effective way to tailor their fall prevention plan and facilitate communication with their health care providers.[15]

Patients can be engaged in fall prevention by sharing their perceptions of their current or intended preventive behaviors. Experiencing a fall in the past and perceptions, such as self-confidence or fear, influenced patients' preventive behaviors. Kiyoshi-Teo et al found that only falls in the past 3 months and falls with injury in the past year were associated with increased preventive behaviors in hospitalized older adults.[28] Twibell et al found that, in hospitalized adults determined to be at risk for falling by nurses, decreased intentions to engage in preventive behaviors were correlated with increased confidence, decreased fear of falling, and decreased perceived likelihood of adverse outcomes of falling.[26] A qualitative study of hospitalized oncology patients captured their perspectives on decisions to engage in fall prevention.[29] In addition to decisions being influenced by asking or waiting for help to get out of bed and the patients' relationship with their nurses, their perceived ability, room environment, and possibility of falling were important factors in their engagement in preventive behaviors.[29]

Methods

Setting

This longitudinal quality improvement project was conducted on a 31-bed bone marrow transplant (BMT) oncology unit of a not-for-profit, Magnet-designated, 1200-bed, urban acute care hospital within a large Midwestern health system. The hospital is part of a large academic medical center and affiliated with a university medical school. The hospital admits people from across the United States. Hospital and university institutional review boards approved the project. The fall risk questionnaire is in the public domain.

Sample

The project used a purposive, convenience sample of 2 different groups of patients who were admitted to the BMT unit. Inclusion criteria for all patients were documentation of normal cognitive status on day of admission for baseline charts and within the past 24 hours for patients offered the fall risk questionnaire, patients who were able to understand spoken English, and patients aged ≥18 years. Exclusion criteria for all patients were documentation of impaired cognitive status on day of admission for baseline charts and within the past 24 hours for patients offered the Fall Risk Questionnaire, patients who were unable to understand spoken English, or patients aged < 18 years. Normal cognitive status was documented in the EHR in the neurosensory section of the assessment flowsheet as *within defined limits* if the patient displayed the following characteristics: patient is alert and awake; if asleep, patient awakens to name; patient is oriented to time, person, place, and situation, or as within defined limits except, but without noted exceptions in the cognition and memory parameter.

Sample size calculations for the number of baseline charts and the number of patients to receive the fall risk questionnaire were based on a total population estimate of 250 eligible patients in a 6-month timeframe. Using a confidence level of 95%, maximum 5% margin of error, and 25% response distribution, a minimum sample of 135 charts at baseline and 135 patients for follow-up were required.[42]

To reduce bias, systematic random sampling of every fourth chart from the list of eligible charts for the project time frame was used to select the baseline group. Data collected from baseline charts included age, gender, race, admission fall risk score, and admission fall risk category. During the follow-up period, simple random sampling of the daily BMT unit census reports, which were generated every Monday and Thursday morning by the investigator, determined the list of potential participants.[43] Simple random sampling continued until 135 patients, or as many as were eligible, willing, and available during the follow-up period, were given the fall risk questionnaire. Charts of all participants were reviewed.

Quality Improvement Procedure

Patients admitted to the unit generally stay an average of 21 to 28 days and typically feel best during the first week. Patients were recruited within 5 days of admission. A medical record number that did not appear on the previous day's report was considered a new admission. The investigator gave the patient a brief verbal introduction of the project's purpose, obtained informed consent, and provided a blank consent form. A printed color copy of the fall risk questionnaire (**Figure 1**) was given to the patient to complete in writing, or it was read to them by the investigator and their responses were recorded on the instrument. Each patient was told their score and informed if they may be at risk for falling, according to the instrument. For each self-identified risk, the patient was told why it was a fall risk, as shown on the fall risk questionnaire. For example, if the patient answered *Yes* to the statement *I have fallen in the past year*, they were told "People who have fallen once are likely to fall again," as shown in the *Why It Matters* column of the instrument. The investigator recorded the patient's medical record number, date, fall risk questionnaire score, and any unanswered questionnaire items. The completed questionnaire was given to the patient and the interaction concluded. Each interaction with a patient lasted 5 to 15 minutes. The medical record number was matched in the EHR of consenting participants and the following information collected: age, gender, race, most recent fall risk score, and most recent fall risk category.

Data Collection

While the fall risk questionnaire is in the public domain, permission to use the instrument in this project was obtained.[44] The fall risk questionnaire, primarily validated in community-dwelling older adults, is a checklist of 12 *Yes/No* statements based on American Geriatrics Society and British Geriatrics Society guidelines[44] and published by the CDC in a *Stay Independent* brochure.[45] Each *Yes* response is assigned 1 point, except 2 questions that are each assigned 2 points; *No* responses are 0 points. The total possible score is 0–14, with a score of 4 or more representing the potential risk for falling. The fall risk questionnaire takes 5 to 10 minutes to complete. The fall risk questionnaire was validated in an outpatient oncology population (n=21). Relationships with mobility, quality of life, functional status, and fear-of-falling instruments were moderate to very strong (Pearson r = .48, –.63, .72, and .76, respectively).[46] Wildes et al found that patients required minimal assistance to complete the questionnaire.[46]

Figure 1. Fall Risk Questionnaire

Please circle "Yes" or "No" for each statement below			Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.
Total _____		Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.	

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. *J Safety Res*; 2011:42(6)493-499). Adapted with permission of the authors.

Fall rate data was obtained from the National Database of Nursing Quality Indicators of all reported falls on the BMT unit during the project time frame. Patient demographics (age, gender, race), fall risk score, fall risk category, and cognitive status were collected from the EHR. To determine if a participant had a fall event, the medical record number associated with each fall event on a safety event management system report was compared to the medical record number of each participant.

Data Analysis

Data was analyzed using IBM SPSS Statistics software version 22.0.[47] The primary outcome variable was unit fall rate (number of patient falls per 1000 patient-days). The secondary outcome variable was fall event. Descriptive statistics were used to characterize and summarize the demographic data and the documented fall risk score and fall risk category. Nominal level data were analyzed with the Chi-square (χ^2) goodness-of-fit test and the *phi* coefficient (Φ) was used as an index to describe the magnitude of the effect from the intervention with values of .10, .30, and .50 for small, moderate, and large,

respectively. Ratio level data were analyzed with the Independent t-test and the Cohen's *d* coefficient was used as an index to describe the magnitude of the effect from the intervention with values .20, .50, and .80 for small, moderate, and large, respectively. The level of statistical significance was set at $P<.05$.

Project Evolution

Baseline charts were reviewed prior to fall risk questionnaire implementation to ensure data could be located. A 2-week rehearsal was conducted to determine if the project design would be safe, timely, efficient, effective, equitable, and patient-centered. The fall risk score variable and project introduction to patients were challenges. The documented fall risk score was non-numerical (noted as "auto-high") in 4 baseline charts. The "auto-high" patients did not require a fall risk questionnaire and were automatically high risk due to immobility or having fallen during the previous 6 months. A score of 4, the minimum score for the high-risk category on the fall risk questionnaire, was assigned in the database for "auto-high." The verbal introduction of the project's purpose to patients was initially cumbersome and impersonal with 3 of 24 patients refusing during the rehearsal. The strategy for presenting the project was refined. Patients were more readily willing to participate when the project intent was explained succinctly by someone identifying themselves as a nurse. Only 4 of 123 follow-up patients refused to participate.

Chart review, sampling, data collection methods, and use of the fall risk questionnaire worked well during the rehearsal and project. Knowledge of the EHR and good staff documentation compliance made chart review efficient and effective. By running census reports and enrolling patients twice a week, only 10 patients were discharged before they could be assessed for eligibility. Most patients were physically able to take the fall risk questionnaire during the first 5 days of admission. The questionnaire was easy for most patients to understand and answer. All patients completed the entire fall risk questionnaire. Many patients verbalized surprise that they had more fall risks than they had thought. No safety risks were imposed on patients, but it was reported to the unit manager that 1 patient who had recently suffered a cerebrovascular accident appeared more anxious after completing the questionnaire.

Outside Influences

No political influences on the project were identified. Economic and social influences impacted project implementation. Plans for relocating the unit to a new hospital building during project implementation threatened unit leadership support of the project timeline, but the move was delayed. Staff training on technology in the new building conducted during fall risk questionnaire implementation decreased direct patient care time and may have negatively affected fall events. Unit manager turnover just before implementation of the fall risk questionnaire may have caused stress for the staff and reduced the amount of time the charge nurse usually spent during patient rounds to reinforce fall prevention education. The new unit manager, who was hired post implementation, as well as the charge nurse and unit educator, supported the project.

Results

This project consisted of a baseline chart review ($n=135$) and a follow-up chart review and fall risk questionnaire use ($n=123$). All 258 subjects were included in the analysis and no data were missing.

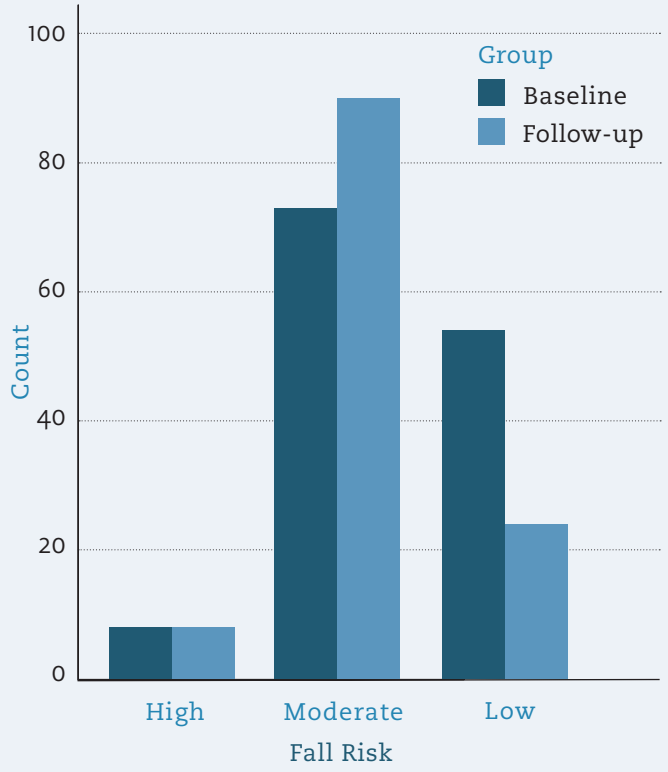
Demographics

The baseline group ranged in age from 19–83 years, with a mean age of 57.89 years (SD+13.93). The follow-up fall risk questionnaire

Table 1. Fall Data at Baseline and Follow-Up

	Baseline Group N=135	Follow-up Group N=123	t-test (df)	χ^2 (DF)	P value
Fall Event (n), %	(6), 2.3%	(7), 2.7%		$\chi^2(1)=.209$	.65
Fall Risk Score mean, (SD)	6.2, (3.80)	7.4, (3.14)	t (256) = −2.77		.006
Fall Risk Category (n), % • Low • Moderate • High	 (54), 20.9% (72), 27.9% (9), 3.5%	 (24), 9.3% (90), 34.9% (9), 3.5%		$\chi^2(2)=13.008$	.001

Figure 2. Fall Risk Category at Baseline and Follow-Up



group ranged in age from 18–91 years, with a mean age of 56.74 years (*SD*+15.55). Age for each group was normally distributed as determined by the index of skewness, -.887 for baseline and -.632 for follow-up, and inspection of the stem-and-leaf plots. There was no statistically significant difference between the 2 groups for age (t [256]=.63; *P*=.53; 95% CI, -2.47–4.77). The sample was predominantly age 60–69 years (32.6%; *n*=84); remaining participants were 50–59 years (26.0%; *n*=67), 18–49 years (23.6%; *n*=61), 70–79 years (14.7%; *n*=38), and 80–99 years (3.1%; *n*=8). There was no statistically significant difference between the baseline and follow-up groups for age group (χ2 [4]=2.41; *P*=.66). The sample was predominantly male (58.9%; *n*=152), with similar percentages of males and females in the groups. There was no statistically significant difference between the groups for gender (χ2 [1]=.15; *P*=.69). The sample was predominantly White (87.2%; *n*=225); remaining participants were Black or African American (10.5%; *n*=27), Asian (1.9%; *n*=5), and Hispanic (0.4%; *n*=1), with similar percentages of these races represented in the baseline and fall risk questionnaire groups. There was no statistically significant difference between the groups for race (χ^2 [3]=1.43; *P*=.69).

Fall Risk Assessment

There was a statistically significant and small-to-moderate clinically significant increase from baseline to follow-up in the mean fall risk assessment score, (6.2+/-3.80 vs 7.5+/-3.14), representing greater fall risk in the fall risk questionnaire group (t [256]= -2.77; *P*=.006; 95% CI, -2.07 to -.35; *d*=.35) (**Table 1**). A lower percentage of patients in the fall risk questionnaire group were assessed as being at a low risk than the baseline group (9.3% vs 20.9%) and a higher percentage of patients in the fall risk questionnaire group were assessed as being at a moderate risk than the baseline group (34.9% vs 27.9%) (**Figure 2**). Percentages of patients who were assessed as being at a high risk were equal between groups (3.5%). This finding was statistically significant and represented a small-to-moderate clinically significant difference in fall risk category between groups (χ^2 [2]=13.01; *P*=.001; ϕ=.23).

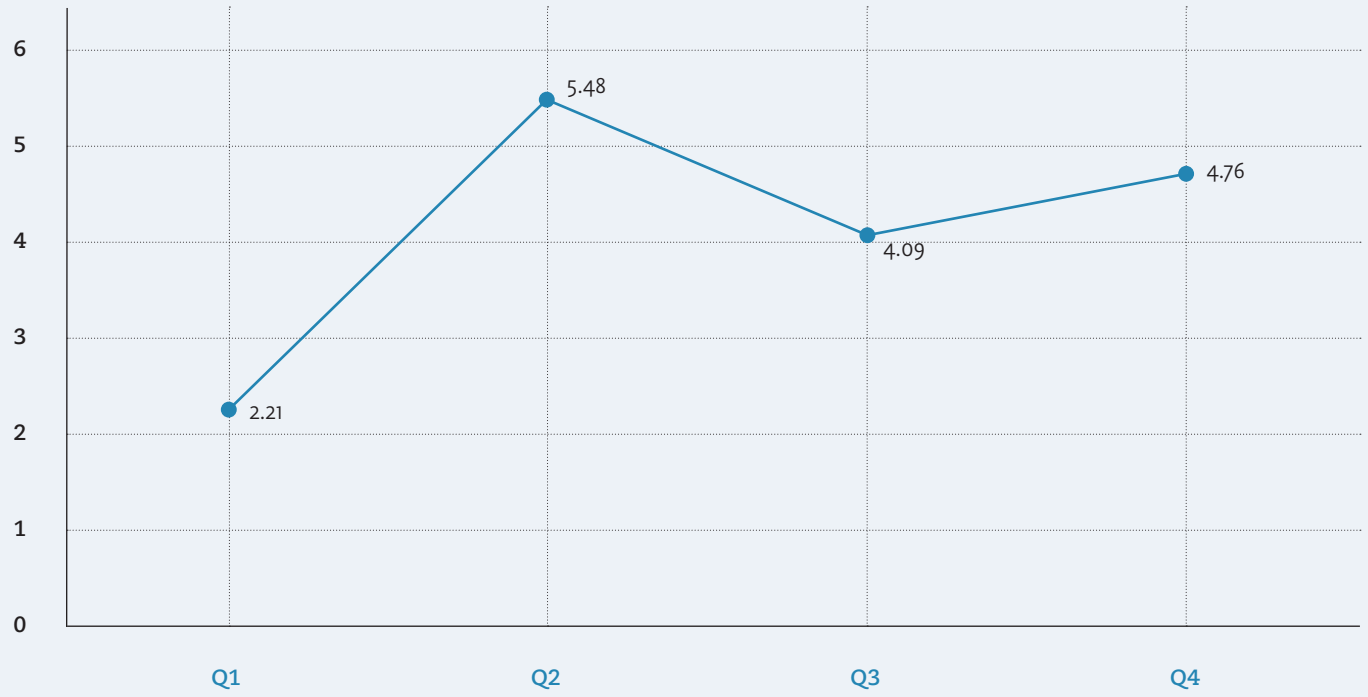
Patient Falls

Of the 13 patients with a reported fall throughout the project, 9 were assessed by the nurse to be in the moderate category and 4 in the low category of the fall risk questionnaire (**Table 2**). Of the 7 patients

Table 2. Fall Event Data at Baseline and Follow-Up

	Fall Event (Baseline Group)						Fall Event (Follow-Up Group)						
	1	2	3	4	5	6	1	2	3	4	5	6	7
Age	73	24	60	24	56	49	65	64	69	55	56	55	67
Gender	F	F	F	F	F	M	M	F	M	M	M	F	M
Fall Risk Category	Mod	Mod	Mod	Low	Low	Low	Mod	Mod	Mod	Low	Mod	Mod	Mod
FRQ Score*							0	7	3	4	3	11	0

Figure 3. Unit Fall Rate by Quarter



with a reported fall who had taken the fall risk questionnaire, 6 were assessed by the nurse to be in the moderate category and 1 in the low category of the fall risk questionnaire. Of these 7 patients who took the questionnaire, 4 assessed themselves to not be at risk for falling (score less than 4). There was no statistically significant difference between the baseline group (2.3%; *n*=6) and the follow-up group (2.7%; *n*=7) for fall events ($\chi 2$ [1]=.21; *P*=.65).

Unit Fall Rate

The NDNQI unit fall rate per 1000 patient-days increased by 23.6%, from a mean of 3.85 for the 2 quarters in the baseline period to 4.76 in the follow-up period (**Figure 3**). Comparing only baseline Q2 to follow-up Q4, the unit fall rate declined 13.1%, from 5.48 to 4.76.

Outcomes of the Project

- Objective 1, 10% decrease in unit fall rate from baseline to follow-up, was not met; instead, the rate increased by 23.6%. Wide fluctuations in rates during the baseline period and an atypically low Q1 fall rate were unanticipated.
- Objective 2, 10% decline in fall events from baseline to follow-up, was not met. Fall events increased by 0.4%, but this was not statistically significant.

Discussion

The purpose of this project was to implement an evidence-based participatory strategy of a self-assessment fall risk questionnaire to reduce falls on an adult oncology unit. The goal to decrease the unit fall rate was not met from baseline to follow-up periods, however, this objective was met when comparing Q2 to Q4. A low Q1 rate greatly impacted the mean rate for the baseline period. A longer follow-up period may be needed to show improvement over time. Although actual falls can be underreported in any quarter, the project may have increased awareness and reporting.

The objective to decrease the percentage of fall events was not met, however, the increase from 2.3% to 2.7% of the total sample was not statistically or clinically significant. There was a significant increase in fall risk score in the follow-up group compared to the baseline group. The outcomes of this project support the finding of Klinkenberg and Potter[16]—that the majority of those with a reported fall were assessed by nurses to be at moderate or low risk. The project also supports the use of a formal self-assessment instrument,[12,13] allowing purposeful consideration of risks by patients, which could impact their perceptions and behaviors. Use of the fall risk questionnaire in this project may have increased patients' awareness but may not have impacted their behavior.

Registered nurse and overall nursing understaffing levels have been shown to negatively influence fall rates[48,49,50] and may have been

a factor during project implementation. Targeted preventive measures and more intensive instruction based on the patient's self-assessment may have a greater effect.

Strengths of the project are random sampling and a large sample size (n=258), reducing selection bias and increasing reliability and validity of data. There are several limitations of the project. The short project time interval limits the amount of data. Implementation on a single oncology unit in 1 hospital and use of convenience groups of different individuals limits generalizability of results.

Implications for Nursing and Conclusion

The fall risk questionnaire supports an individualized approach to fall prevention that captures the patient's viewpoint. An active fall team at the hospital drives continued innovations. The fall risk questionnaire could be applied to other populations in the hospital and expanded to include family input. Stakeholders may consider sustaining the fall risk questionnaire by adding it to the patient's admission information packet. The bedside nurse could compare the patient's estimate of their fall risk to their functional ability and educate those who underestimate their risks.

This project demonstrates the feasibility of the simple, low cost, patient-centered fall risk questionnaire in an inpatient oncology population. Over time, the fall risk questionnaire may help to decrease falls and injuries, improve overall patient outcomes, and decrease costs. This project contributes to knowledge in patient-centered, participatory fall prevention measures. Suggestions for future study are use of the fall risk questionnaire in other inpatient populations and other participatory strategies or electronic self-assessments that may afford greater patient involvement. OI

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