Fall Risk Perceptions

A study of hospitalized patients with hematologic malignancies

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BACKGROUND: Inpatient falls cause harm, increased length of stay, and high costs. Patients with hematologic malignancies have a unique set of fall risk factors, and studies indicate that patients lack accurate perception of fall risk.

OBJECTIVES: This study describes patient perceptions of fall risk in people with hematologic malignancies and compares patient and nurse perceptions of fall risk.

METHODS: This mixed-methods study used descriptive statistical and narrative analyses. A convenience sample of patients was interviewed about perception of fall risk. Descriptive analysis of patient data and analysis around correlation between patient and nurse assessment of fall risk were completed.

FINDINGS: Themes emerged about participants' prior experience with falls and perceptions of fall education. Participants who reported feeling weak prior to hospitalization perceived being at high fall risk, consistent with nurse assessment. Several patients reported feeling at low risk. Data showed discrepancies in patients' perceptions of nursing education.

KEYWORDS
fall risk; leukemia/lymphomas/hematology; patient perception; safety issues

DIGITAL OBJECT IDENTIFIER
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FALLS PRESENT AN ONGOING PATIENT SAFETY ISSUE and result in injury, increased costs, and longer hospital stays (Joint Commission, 2015). Despite established evidence about risk factors, prevention strategies, and assessment tools, falls continue to occur (Agency for Healthcare Research and Quality, 2013; Cameron et al., 2012; Tzeng & Yin, 2015). The definition of a fall is "the loss of an upright position that results in landing on the floor or ground or an object with body and/or hands. [It] includes unintentional, downward displacement of the body and may be controlled or uncontrolled" (University of Washington Medical Center, 2015, p. 1). Patients with cancer have increased rates of falls, increased risk for injury from falls, and specific fall risk factors related to disease process, treatment, and side effects (Capone, Albert, Bena, & Tang, 2012; Kong et al., 2014; Wildes et al., 2015). Patients with hematologic malignancies have unique risk factors, including rapidly changing health status, chemotherapy or biotherapy side effects, and inpatient care risks, such as central lines (Filler, Kelly, & Lyon, 2011; Kong et al., 2014).

Patient and family engagement in fall prevention can decrease fall rates in the hospital (Vonnes & Wolf, 2017). Hospitalized patients, however, have inaccurate perceptions of fall risk (Kuhlenschmidt et al., 2016; Sonnad, Mascioli, Cunningham, & Goldsack, 2014; Twibell, Siela, Sproat, & Coers, 2015). To engage patients with cancer in the prevention of falls, patients, family members, and clinicians require an understanding about patient fall risk.

The purpose of this study was to describe patients' perceptions of fall risk in a population of inpatients diagnosed with hematologic malignancies. The research questions are as follows:

- What is the personal perception of fall risk for adult patients with hematologic malignancies? How does this compare with nurse perception?
- What factors do patients identify as contributory to fall risk?
- How do patients determine their risk for falling?

Background

In *The Wounded Storyteller: Body, Illness, and Ethics*, Frank (2013) described the need for individuals to tell stories about illness as it is experienced. He proposes three narrative types used to tell stories in a postmodern world. These narrative categories form a framework that creates meaning for people and guides understanding about how individuals perceive the experience of illness.

The first type is restitution narrative, which presents the idea that health is a normal condition that people strive to return to and that medicine is the hero. This narrative is most pervasive in modern culture. Frank (2013) summed up this storyline with the following: "Yesterday I was healthy, today I'm sick, but tomorrow I'll be healthy again" (p. 77). Restitution stories are told from the perspective of someone who expects to get well.

Chaos, the second narrative, is a method of storytelling in which an individual is living through loss of control with the expectation that life will never return to what it was. These narratives lack coherence because of the depth of suffering and feeling of vulnerability. These stories cannot be told or spoken because of the inherent nature of chaos; these stories are lived. Chaos stories are told when the body is unfixable and cure is not a possibility.

The final narrative type is quest. Quest stories are told when illness is a journey and the quest allows the individual to tell his or her story. Quest narratives are characterized by an awareness that the individual has been diagnosed with an illness but that he or she is not defined by the diagnosis. The goal of the quest narrative may not be clear, but these individuals believe that something can be gained through the experience of illness.

Methods

Design and Setting

A mixed-methods study using statistical and narrative analyses of patient interviews was used to examine self-report of patients' perception of fall risk. Using an open-ended interview format, the author identified themes about patient perceptions of fall risk. The study took place on an acute care hematology/oncology unit in the University of Washington Medical Center in Seattle. The Fred Hutchinson Cancer Consortium Institutional Review Board approved the study.

FIGURE 1.
INTERVIEW GUIDE TO ASSESS PATIENT PERCEPTIONS OF FALL RISK

INITIAL INTERVIEW

- On a scale of 1 (very unlikely) to 5 (very likely), where would you identify your fall risk?
  - ☐ Describe why you gave yourself that number.
  - ☐ What factors would you say put you (or do not put you) at risk for falling?
- Have you fallen since you were diagnosed or in the past 6 months?
- Since your diagnosis, is there anything you have modified at home or in the hospital to decrease your risk of falling?
- What has your medical team told you about falls?
  - ☐ What have they told you about your risk for falling?
- Is there anything else about your risk for falling you would like to say?

FOLLOW-UP INTERVIEW

- On a scale of 1 (very unlikely) to 5 (very likely), where would you identify your fall risk?
  - ☐ Describe why you gave yourself that number.
- Have you fallen since our first interview?
- Is there anything else about your risk for falling you would like to say?

"Understanding the patient journey enables nurses to help patients with perceptions of their illness and associated risks."

Participant Criteria and Selection Process

A purposive convenience sample was used with the following inclusion criteria: admission to a designated oncology unit, diagnosis of a hematologic malignancy, English speaker, aged older than 18 years, and an Eastern Cooperative Oncology Group (ECOG) Performance Score of 4 or less. An investigator assigned ECOG scores based on the ECOG Scale of Performance Status. Sixteen participants were enrolled, and 15 completed initial and follow-up interviews. One participant's data were removed because of discharge before the second interview. Patient recruitment, enrollment, and interviews were completed over nine weeks.

A nurse investigator screened participants by reviewing admissions and approaching nurses caring for potentially eligible participants. Staff determined willingness to participate, and participants consented.

Data Collection

An initial interview was conducted with a standard outline for questions, allowing for follow-up (see Figure 1). After the interview, data, including demographics, diagnosis, prior hospitalizations, reason for admission, medications causing an increased risk for falling (narcotics, diuretics, antihypertensives, benzodiazepines), presence of neuropathy, and hematocrit and hemoglobin, were collected from electronic health records (see Table 1). There was not a specific timeline during patient hospital stay for initial interview. To assess changes in perception of fall

risk, the nurse investigator conducted a follow-up interview two to five days after the initial interview.

The score from the Johns Hopkins Fall Risk Assessment Tool was used to determine nurse perception of fall risk and was collected at the initial and follow-up interviews. This tool is used in the hospital to determine fall risk. It is completed by the nurse each shift for each patient. The tool does not have proven reliability and validity but is evidence-based (Poe et al., 2018). Standard nursing education for fall risk includes the teach-back method for fall risk factors, fall prevention strategies, and a handout with general information in each room. This education was not observed by the investigator because it occurs by nurses at various times throughout a hospital stay and because length of stay and previous hospitalizations differed for each patient. No falls occurred between the initial and follow-up interviews. Interviews were audio recorded and transcribed by the investigator.

Data Analysis

The Microsoft Excel® CORREL function was used to calculate the Pearson product-moment correlation coefficient to evaluate correlation between patient and nurse assessment of fall risk. Interviews were transcribed and analyzed for themes around patient-reported perception of fall risk using narrative analysis. In the first round of analysis, the principal researcher read through transcripts as they were completed to look for themes. A secondary reviewer examined transcripts and themes. Thematic saturation was achieved after 15 interviews. Quotes related to determined themes were arranged in table format for a second review of transcripts, and the quotes from each patient were categorized by Frank's (2013) narrative types. The secondary reviewer examined tables and narrative types, and the researcher kept notes throughout the interview process to track potential biases, which were addressed by the secondary reviewer.

Results

Demographics and Quantitative Data

Fifteen participants aged 36–86 years completed interviews. Participant inpatient admissions were related to chemotherapy, new diagnosis, rectal pain, weakness, shortness of breath, and neutropenic fever. Patient fall risk score was recorded from interviews, and nurse fall risk score was obtained from chart review (see Table 2).

Hemoglobin and hematocrit results were collected but not included because several patients received blood transfusions, confounding values at time of the interview. No data related to incident falls were collected because no participants fell.

There was a statistically significant and moderate positive correlation between the initial patient perception of fall risk and nurse fall risk score ($r[13] = 0.56$, $p = 0.03$). There was also a statistically significant positive and strong correlation between patient perception and nurse perception of fall risk at follow-up, ($r[13] = 0.65$, $p = 0.009$) (Salkind, 2013).

Qualitative Findings

Patients responded to the following interview instructions or questions.

TABLE 1.
SAMPLE CHARACTERISTICS (N = 15)

CHARACTERISTIC	n
Age (years)	
30–39	1
40–49	2
50–59	4
60–69	3
70–79	3
80–89	2
Gender	
Male	9
Female	6
Ethnicity	
White/non-Hispanic Latino	12
Asian	2
Unknown	1
Diagnosis	
Acute myeloid leukemia	8
Acute lymphocytic leukemia	2
Diffuse large B-cell lymphoma	2
Lymphoplasmacytic lymphoma	1
Plasma cell leukemia	1
Chronic lymphocytic leukemia/myelodysplastic syndrome	1
ECOG performance status	
2	7
3	6
4	2

ECOG—Eastern Cooperative Oncology Group

RATE YOUR FALL RISK AND DESCRIBE WHY YOU GAVE YOURSELF THAT NUMBER: Eight participants rated themselves low on the fall risk scale. Participants rated themselves based on how they were feeling in the moment and on other prior conditions of risk. Examples of patient reports of prior sources of risk included having a "metal knee" and side effects from medications and chemotherapy. Several patients talked about care they were receiving: "I came in on a wheelchair and was well taken care of, so didn't feel like falling."

Others stated that at the time of self-report of fall risk, they did not feel at risk for falling: "I feel stable . . . haven't had any symptoms at all."

HAVE YOU FALLEN SINCE YOU WERE DIAGNOSED OR IN THE PAST SIX MONTHS? Seven participants reported falling in the past six months, but most stated that they attributed the fall to a normal situation. One participant described stumbling while doing yard work and wearing sandals: "I'm sure it happens to a lot of people." Another participant said, "I'm a natural klutz. . . . I've taken some tumbles but mostly because I've tripped over dogs." Both participants reported a fall risk score of 1. Another participant who rated himself at low fall risk had fallen several months prior and reported having been symptomatic but not yet diagnosed with cancer. Several who rated themselves as high risk for falls described having multiple recent prior falls. One participant shared, "I keep falling down. I should say it's a great chance that I will go down because of the cancer and stuff like that."

SINCE YOUR DIAGNOSIS, IS THERE ANYTHING YOU HAVE MODIFIED? Several patients reported using assistive devices like a cane, walker, or walking stick. Others reported limiting activity because of fatigue. One patient said, "Well, I don't do anything. I don't have energy." Several patients reported receiving family help, either when going to the bathroom or walking outside. Some patients reported specific modifications that nurses had taught them, like sitting at the edge of the bed before standing up, wearing nonskid footwear, and practicing caution at night.

WHAT HAS YOUR MEDICAL TEAM TOLD YOU? Some patients recalled and explicated education provided by nurses relative to falls. Several patients quoted exact information about fall prevention that nurses provided, including several who rated themselves as low risk and had low fall risk scores based on a previous nursing assessment. One participant stated, "A fall can happen to anyone, so I'm not invincible, but I know if I follow the procedure, I can be safe."

Other patients reported not hearing or remembering if staff had mentioned anything about fall prevention. The nursing staff rated several patients as high fall risk and described having fall reduction factors in place like a bed alarm, gait belt, or a requirement that they call for assistance, but they still reported not receiving any education about fall risk from their nurses or medical team members. One patient reported, "If I'm not feeling too well, they [nurses] will help me go to the bathroom or walk or anything, so I'm sure they're watching out for it."

In follow-up interviews, eight participants rated themselves as the same fall risk. Two patients reported increased fall scores from 1–2. One patient reported fatigue from chemotherapy, and one reported feeling tired after receiving sedation for a procedure earlier. During the follow-up interview, five participants reported a lower fall risk than they initially reported. One patient reported a lower fall risk score because he did not experience side effects from chemotherapy and had been using a cane for balance from knee surgery. Other participants said that they "felt steadier" and had been doing more activity.

Participant responses to perception of fall risk, identification of fall risk factors, and memory about fall-risk education provided by clinicians varied. Some patients remembered detail; others reported that they could not remember or had not been advised if they had safety protocols in place. Most reported fall risk based on how they were feeling at the moment, whether related to medication side effects or previous experiences. If they reported falls

TABLE 2.
PATIENT AND NURSE INITIAL AND FOLLOW-UP FALL RISK SCORES

	INITIAL SCORE		FOLLOW-UP SCORE	
PATIENT	PATIENT	NURSE	PATIENT	NURSE
1	4	5	1	5
2	1	1	1	0
3	5	6	2	4
4	1	5	1	5
5	1	5	1	1
6	2	8	1	7
7	1	4	1	7
8	4	17	2	17
9	1	7	1	17
10	5	10	5	17
11	5	18	3	22
12	3	24	3	27
13	4	4	1	0
14	1	4	1	0
15	1	5	2	3

Note. Fall risk score was calculated with the Johns Hopkins Fall Risk Assessment Tool. Total scores range from 0–28, with higher scores indicating greater fall risk. Total scores from 6–13 indicate moderate fall risk; total scores greater than 13 indicate high fall risk.

within the past six months, they normalized those experiences, saying that they were everyday activities and that they were normal for other people.

IMPLICATIONS FOR PRACTICE

- Identify differences in patients' understanding of fall risk, ability to recall fall prevention information, and risk factors.
- Listen to the patient narrative and elicit stories to identify patients' perception of their illness to guide understanding of how to communicate with patients about fall risk and prevention.
- Converse with patients about their understanding of fall risk when providing education about risk factors and fall prevention.

Discussion

Perception of Falls and Restitution Narrative

Many narratives shared by participants fit into Frank's (2013) conceptual framework of narrative types. The most common narrative was restitution, indicating that participants held a fundamental orientation of cure as the outcome. Sometimes, this resulted from previous experiences with illnesses, many of which were acute and fit into the restitution narrative. Because this is the most common narrative today (Frank, 2013), many patients frame their cancer diagnosis this way. These stories could be summarized as the following: "I was healthy recently; I will make it through chemotherapy, and I will be better."

Patients without prior illness experiences may expect that a cancer diagnosis will change life for a time but that things will ultimately return to the way they were. Falling, and being at an increased risk for falling, is not a part of the restitution narrative, although studies have reported that it is a part of the experience (Allan-Gibbs, 2010). The number of patients who stated they were not at any risk for falling confirms this. One patient identified that he was doing nothing in particular to prevent falls, stating, "I have a high level of trust in myself, so I'm not doing huge modifications." The actionable narrative from restitution involves the patient denying his or her fall risk and reporting to not need assistance or modifications (see Figure 2).

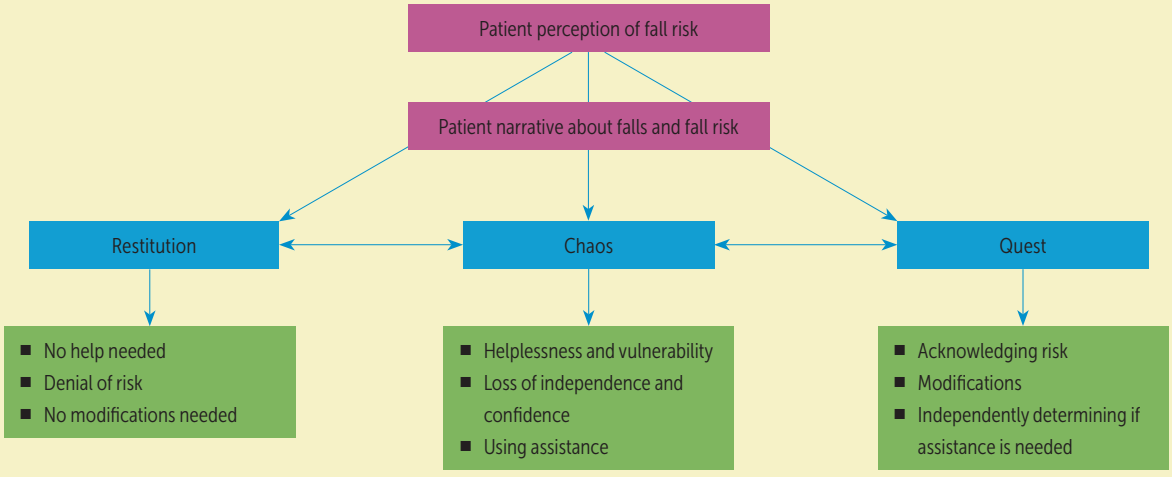
Participant perceptions that their life remained normal during treatment for a hematologic malignancy further illustrates the idea of the restitution narrative. One woman who had been admitted for pain control and who was taking multiple medications that increase fall risk said, "I know I'm on a cancer floor, but I'm a healthy woman." Other participants reported pursuing outside activities like dog walking and jumping rope.

Perception of Falls and Chaos Narrative

The chaos narrative is when the storyteller cannot imagine life getting better (Frank, 2013). This narrative makes reflection, as well as the ability to tell the story coherently, impossible. Some people in the hospital experience the chaos narrative. Treatment for hematologic malignancies can involve multiple hospitalizations, frequent visits to healthcare providers, shifting roles, changes in daily activities, inability to work, and caregiver needs. Complications, such as infections and sepsis, often occur, which can lead to stays in the intensive care unit and prolonged hospitalizations.

Several participants seemed to be amid the chaos narrative, in which their illness was acute and they were experiencing critical moments in their illness narrative. Two participants rated their fall risk as very high, consistent with scores from nursing staff. One patient described his experience with cancer as follows: "Well, just as a disease progresses along, you don't realize what's happening until it's quite late." Patients amid the chaos narrative have feelings of helplessness and vulnerability. Part of the actionable narrative is that they make statements about losing

FIGURE 2.
MODEL OF NARRATIVE TYPES AND PATIENT PERCEPTION OF FALL RISK



independence or confidence and identify a need for assistance with activities.

In the chaos narrative, sometimes aspects of care, such as remembering what providers said about falls, are not feasible because of the stress of the experience. One participant reflected on her stay in the intensive care unit and said that she did not remember hearing anything about falls because she had not been able to walk. Having been so sick, she had not been able to focus on details of care. This is in line with nursing observations that patients need consistent education and reminders about safety in very acute stages of illness (Cameron et al., 2012; Kuhlenschmidt et al., 2016).

Perception of Falls and Quest Narrative

The quest narrative involves a patient who is experiencing illness as a journey and seeks to use his or her story to give meaning (Frank, 2013). These patients are aware that life will not return to how it was before the illness but are able to reach acceptance and find a new normal. In this study, participants focused on returning to the flow of everyday life while allowing modifications. One participant spoke about walking her dogs but doing so slowly and allowing time for catching her breath if she felt fatigued. Other participants acknowledged that having a hematologic malignancy put them at a higher risk for falls but that they could remain active by using modifications. These exemplify Frank's (2013) idea that "quest stories tell of searching for alternative ways of being ill" (p. 117). Several patients had previous hospitalizations and had experienced the chaos narrative or identified elements of other narratives during the interview. The actionable results of the quest narrative involve patients acknowledging their risk, allowing space for modifications, and determining if assistance is needed.

Patients can fluctuate between narrative types at various points throughout their experience of illness (Frank, 2013). When asked about why she felt she was at low risk for falling, one patient said, "This is my first week, so, yeah, I think I'm in better condition than everybody else." She acknowledged that she could have been feeling worse, indicating some understanding of the quest narrative, but also displayed limited knowledge of her own situation or risk for falling at that moment.

Limitations

Study limitations consist of a small convenience sample, single study site, and patients with only hematologic malignancies, limiting generalizability. All participants were accrued in a short period of time. During the study, the nurse investigator worked as a staff nurse on the study unit. To accommodate this limitation, the nurse investigator did not care for patients enrolled in the study. In addition, to minimize potential bias in data gathering and evaluation, the author discussed study results with a secondary data reviewer and noted them in the interpretation of results.

Implications for Nursing and Conclusion

The findings suggest that nurses who listen to their patients can frame patient responses in a patient narrative. Understanding the patient journey enables nurses to help patients with their perceptions of their illness and associated risks. These findings support future studies about how to better educate and engage specific oncology patient populations about fall risk. Additional studies about patient perceptions of fall risk, based on diagnosis, patient experiences, and healthcare settings, can establish best practices to prevent falls.

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