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# Examining Fall Risk Assessment in Geriatric Rehabilitation Settings Using Translational Research

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**Abstract**

**Purpose:** The objective of this study was to identify gaps in and to improve the falls prevention strategy (FPS) of an inpatient rehabilitation facility (IRF) in Toronto, Canada.

**Design:** A modified version of the Stanford Biodesign Methodology was used.

**Methods:** Chart reviews, a focus group ($n$ = 8), and semistructured interviews ($n$ = 8) were conducted to evaluate the FPS.

**Findings:** Admission Functional Independence Measure score, age, and gender significantly correlated with risk for a fall. The tool used at this IRF was not effectively capturing patients who were at high risk for falls. All healthcare providers interviewed were knowledgeable of fall risks; however, a patient's fall risk status was rarely discussed as a team.

**Conclusions:** The findings informed recommendations to improve the overall FPS at this IRF.

**Clinical Relevance:** Staff may require more coaching for implementing preventative measures/ensuring accountability and evaluating whether current strategies work. These insights can guide improvement initiatives at similar facilities elsewhere.

**Keywords:** Aging; falls; fall risk; geriatrics; rehabilitation; risk assessment; translational research.

## Problem

In hospitals, falls are one of the most common adverse events, which has led to widespread focus on developing and implementing falls prevention strategies (FPS). Inpatient rehabilitation facilities (IRFs) tend to report higher fall rates compared to acute care hospitals, as patients are often admitted with mobility issues and myopathies that affect gait stability (Campanini et al., 2018; Leone & Adams, 2016; Quigley, 2016). In addition, IRFs are increasingly focused on improving patient mobility (Bruyère Research Institute, 2016; Campanini et al., 2018; Leone & Adams, 2016; Quigley, 2016). As such, falls at IRFs are an area of significant risk to patient safety, especially for geriatric patients. Clinical guidelines highlight fall risk screening procedures as an essential component of FPS (Agency for Healthcare Research and Quality, 2018; Registered Nurses' Association of Ontario [RNAO], 2017; Said, Churilov, & Shaw, 2017).

Validated fall risk screening tools (FRSTs) are often used in IRFs to identify a patient's risk of falling (Forrest & Chen, 2016; RNAO, 2017; Ruggieri et al., 2018; Vratsistas-Curto, Tiedemann, Treacy, Lord, & Sherrington, 2018). Depending on a patient's deemed risk status, tailored strategies are initiated to prevent falls from occurring (Agency for Healthcare Research and Quality, 2018; Campanini et al., 2018; Forrest & Chen, 2016; RNAO, 2017). However, in geriatric IRFs, these tools often lack the sensitivity to effectively differentiate the patients with the highest fall risk, because most patients will meet the criteria for inclusion in the high-risk group (Forrest & Chen, 2016; Matarese, Ivziku, Bartolozzi, Piredda, & De Marinis, 2015; Ruggieri et al., 2018). This decreases the FRSTs' utility and can ultimately increase the chances of misidentifying high-risk patients, leading to the potential for improper preventative actions and treatment.

This study took place in a geriatric unit at a Canadian IRF. From initial observations of the two wards on this

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unit (33–35 patient beds each with an average daily census of 68), and through stakeholder meetings, we discovered the increased complexity of the elderly patient population (65+ years) compared to general inpatient populations. As such, the IRF found that the Morse Fall Scale, a validated FRST (Morse et al., 1989), resulted in almost all patients being categorized as high risk for falls. This was a problem because it diluted the value of this designation. Consequently, a new method of assessing patient fall risk was implemented using the criteria of the Morse Fall Scale (Morse et al., 1989), without the scoring system, instead of using staffs' clinical judgment to determine fall risk.

Although staff were following the policies and protocols outlined in the FPS, the new FRST had not been evaluated to assess whether it was working optimally. By identifying inefficient processes in their existing FPS (through chart reviews, interviews, and a focus group) and providing recommendations based on the literature review and findings, we aimed to reduce falls in the geriatric unit at the IRF by translating fall prevention research into practice. With a focus on quality improvement, the overarching objective of this work was to examine the problem of misidentifying seniors' fall risk status in a Canadian geriatric IRF through a translational research lens.

## Background

Falls are a major health concern and the leading cause of injury among seniors and frequently result in hospitalization, disability, and death (Public Health Agency of Canada, 2014; RNAO, 2017). In Canada, more than 137,500 seniors (aged 65 years and older) were hospitalized for injuries in 2017–2018, with 80% of injuries caused by falls. Falls are also the top reason for injury among seniors seen in the emergency room, accounting for 60% of all reported emergency room visits among seniors, with approximately 20% admitted to the hospital (Canadian Institute for Health Information, 2019). Employing evidence-based FPS are critical to ensuring patient safety (RNAO, 2017). Clinical guidelines highlight fall risk screening procedures, typically using validated FRSTs as an essential component of FPS (RNAO, 2017; Said et al., 2017). To identify which FRSTs were being used in geriatric rehabilitation settings, an extensive environmental scan, which included both a literature review and observations, was conducted. The findings from this review of the literature indicated there was no standard practice for the implementation of a FRST across geriatric IRFs (Campanini et al., 2018; Forrest & Chen, 2016; Hars et al., 2018; RNAO, 2017; Vratsistas-Curto et al., 2018). What is understood is that the choice of a FRST should be guided by the utility of the tool within a given IRF and be tailored to the specific patient population (McKechnie, Pryor, & Fisher, 2016; Said et al., 2017). In many cases, nursing staff were primarily responsible for administering the FRST (Bruyère Research Institute, 2016; Leone & Adams, 2016; Quigley, 2016; RNAO, 2017), which differed from the IRF studied, where occupational therapists (OTs) and physiotherapists (PTs) completed the assessment. There was consensus among staff that, due to the nature of the environment, population, and complex etiology of falls, a multidisciplinary team should jointly determine a patient's fall risk (Bruyère Research Institute, 2016; McKechnie et al., 2016; Quigley, 2016; RNAO, 2017).

## Design

A combination of translational research principles alongside a modified version of the Stanford Biodesign Methodology (SBM) was employed (Figure 1; Graham et al., 2006; Translational Research Program, University of Toronto, 2019; Stanford Byers Center for Biodesign, 2018) to guide the study. Translational research principles involve the application of methods, best practices, and frameworks to optimize dissemination of innovation in healthcare (Translational Research Program, University of Toronto, 2019). The SBM is a three-phase process that focuses on identifying the need, inventing a concept, and implementing a strategy to take a project from an idea to a tangible solution (Stanford Byers Center for Biodesign, 2018). The modified SBM intersects problem-solving, with cocreation, iteration, and the application of evidence-based research into clinical practice (Graham et al., 2006; Stanford Byers Center for Biodesign, 2018; Translational Research Program, University of Toronto, 2019). It is built on these core phases and expanded to include validation of the problem, selection of relevant research, and translation and evaluation of these findings into action (i.e., implementation of strategies). Because of the nature of the problem and the need for a multidisciplinary approach, the modified SBM was used as it guides teams in effectively innovating in a healthcare setting. The modified SBM emphasizes detailed examination and observation of a process in the beginning of a study; in this context, the FPS was observed to identify which components (i.e., the FRST) could be improved to achieve the overall aim of reducing falls. Collaborating with staff from the IRF, a study was cocreated to include chart reviews and focus group/interviews and to produce recommendations for improving the process. As the goal of the study was to improve an existing process, it was granted quality improvement exemption under the Tri-Council Policy Statement, Article 2.5 (Government of Canada, 2018) from the research

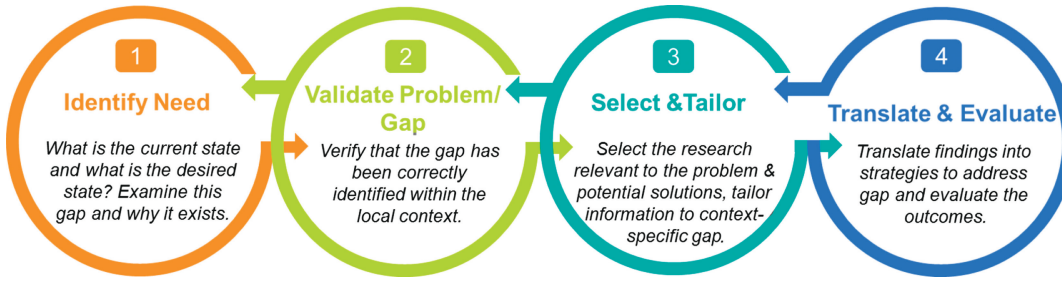


**Figure 1.** Overview of Modified Stanford Biodesign Methodology.

ethics boards of both the IRF and the University of Toronto.

## Methods

### *Chart Reviews*

To evaluate the FRST and to identify trends to develop recommendations to improve the IRF's FPS, a chart review of medical records of patients in the geriatric unit at the IRF was undertaken. This unit consisted of two wards (33–35 patient beds each), with an average daily census of 68. Records from patients who were discharged between November 1 and December 31, 2017 ($n$ = 68) were analyzed retrospectively, and records from patients who fell in January 2018 ($n$ = 16) were reviewed prospectively. Retrospectively examining the charts allowed for patients' fall risk status upon admission and their corresponding outcome to be studied. A prospective design was incorporated to better examine fall incidence on the geriatric unit. The information was analyzed together to determine what characteristics were significantly different between fallers and nonfallers. To identify predictors for fall risk, the following data were extracted: age, gender, diagnosis, length of stay (LOS), total Functional Independence Measure (FIM) score, fall history, mental status (i.e., cognition, orientation), vision and hearing status (i.e., ability/impairment, use of corrective lenses or hearing aid, etc.), and number of medications and functional status (i.e., use of ambulatory aid, difficulty walking, etc.; Forrest & Chen, 2016; Rosario, Kaplan, Khonsari, & Patterson, 2014; Said et al., 2017; Thomas, Pavic, Bisaccia, & Grotts, 2016; Williams, Szekendi, & Thomas, 2014; Vratsistas-Curto et al., 2018). All falls were documented according to hospital policy. A fall was defined as "unintentionally coming to rest on the ground, floor, or other lower level including slips, assisted, attended, or unattended" (Forrest & Chen, 2016; Public Health Agency of Canada, 2014). Consistent with this definition, "near miss" events or "intercepted falls" were included as falls. Data were aggregated and de-identified ensuring patient confidentiality.

### *Statistical Methods and Analysis*

Descriptive statistics provided insights to general trends in the patient population. To examine differences between fallers and nonfallers, independent $t$ tests and chi-square analysis were calculated using SPSS Version 12.0.5 (Armonk, NY) on factors including age, primary diagnosis, gender, risk status, and FIM score. Binary logistic regression analysis was conducted to examine the association between a patient's deemed fall risk status and fall incidence. Logistic regression was used to determine the magnitude of association between fall risk and age, gender, and FIM score. The factors that showed statistically significant differences between fallers and nonfallers were included in the regression model. Consistent with previous research, the area under the curve (AUC), specifically the receiver operating characteristic curve, was used to summarize the overall performance of the FRST (Campanini et al., 2018; Hars et al., 2018; Thomas et al., 2016). In this study, the AUC indicates the discriminatory power of the FRST (i.e., to properly classify a patient that fell as high risk and a patient that did not fall as low risk).

### *Focus Group/Interviews*

An interview guide was developed with input from all authors to explore healthcare professionals' (HCPs) understanding of key fall risk factors identified in the chart reviews and to inquire about challenges using the FRST. In this context, HCP refers to OTs, PTs, pharmacists, and nurses. Physicians were not included in the focus group/interviews as they were not primarily involved in fall risk assessments and did not spend the same amount of time with the patients as the other HCPs. The objective was to gather information on the content and features that were deemed most relevant for fall screening based on experiences of various HCPs and the complexity of the IRF's older patients. For this reason, only HCPs specifically working on the geriatric unit were eligible to be interviewed. HCPs were recruited by our local project lead (their colleague) and informed that participation was voluntary. Verbal consent for the interview and audio recording was obtained from all interviewees prior to their

participation. Before each interview started, the HCPs filled out demographic information forms, which included their profession, age range, and years of experience in profession.

The focus group and interviews asked the same open-ended questions to explore different opinions of an ideal fall risk intake form. These included the following:

1. What are your thoughts on risk assessment? Probe: How do you feel about the high- versus low-risk determination of patients?
2. Can you walk me through how you would assess a patient using this resource? Probes: What do you like/dislike about the resource? What features do you think are missing? What parts do you find challenging?
3. How can this resource be improved in the future?
4. Can you describe how you would communicate a patient's risk of falling with your colleagues?
5. Tell us about any education you received about falls risk factors.
6. Tell us about any education you received about prevention of falls.
7. Tell us a time when you had to deal with a falls-related issue for a patient.

Two authors were present for all interviews; however, only one asked questions, whereas the other acted as an observer. Interviews were recorded and transcribed verbatim, reviewed for completeness and accuracy, with identifiers removed. As part of this process, observations were recorded, for example, whether participants agreed with a statement via nodding or other nonverbal communication. Notes taken during the interviews allowed for triangulation of interviewees' insights and to ensure all verbal and nonverbal details of the interviews were captured accurately (Thurmond, 2001). Using thematic content analysis, both identified related information within the transcripts into initial categories and coded all transcripts independently (Anderson, 2007; Simons, Lathlean, & Squire, 2008). Codes were then collapsed into major categories, and themes were extracted based on multiple rereadings of the data (Anderson, 2007; Simons et al., 2008). Throughout the iterative analytical process, the categories and the code system were continuously discussed with the study team to further develop and validate the code system (Anderson, 2007).

A focus group was conducted with nurses at the IRF as it allowed for insightful discussion among staff who were unfamiliar with the FRST used on the geriatric unit. Eight nurses participated in the focus group, which lasted 40 minutes.

In addition, eight semistructured face-to-face interviews, lasting between 20 and 45 minutes, were completed at the IRF. Although pharmacists were not involved in the determination of a patients' fall risk, they were included in the FPS as part of the postfall interventions to conduct a medication check. Interviews were deemed more appropriate due to the limited number of pharmacists on the geriatric unit. Interviews were selected as the method to gain detailed data from the HCPs that used the FRST (i.e., OTs and PTs).

## Results

### *Chart Reviews*

Records from 84 geriatric patients (51% male) were included, with 23 recorded falls among 22 patients. Mean age of the sample was 83.6 years. On average, study patients took 11 medications ($SD$ = 3.3), 82.1% used a mobility aid, 65.9% had vision difficulties, 54.8% had hearing difficulties, and 50.6% had cognitive impairments. The most common diagnoses were complex medicine (28.6%), orthopedic (15.5%), and cardiac (16.7%). The average total admission FIM was 64.8 (25th percentile = 54.8, 75th percentile = 75.0). There were no significant differences between fallers and nonfallers for the number of comorbidities, number of medications, fall history, fear of falling, use of ambulatory aid(s), orientation, cognitive impairment, and fall risk status upon admission (Table 1). Independent $t$ tests and chi-square analysis revealed that there were significant differences between the average age of fallers (88.2 years) and nonfallers (81.9 years, $p$ = .003) and the average FIM score of fallers (57.3) and nonfallers (67.5, $p$ = .002). The mean LOS for geriatric ward patients was 26 days, and an independent-sample $t$ test revealed that fallers stayed on average 17.6 days longer than nonfallers ($p$ = .02). Multivariate analyses showed that male gender (odds ratio [$OR$] =3.4, $p$ = .04), older age ($OR$ = 1.1, $p$ = .02), and admission FIM score below 60 ($OR$ = 0.95, $p$ = .008) were significantly related to the risk of fall. Post hoc power analyses showed power of greater than 80% for most variables analyzed.

Through binary logistic regression analysis, no statistically significant association between patient's fall risk status and fall incidence was found (see Figure 2). Analysis of AUC further indicated poor discriminatory power of the FRST (AUC = 0.54, $p$ = .55, 95% CI [0.40, 0.69]) as represented in Figure 3.

### *Focus Group/Interviews*

Eight nurses participated in the focus group, with an age range of 25–64 years. All participants were female, and they had, on average, worked 16.3 years in the profession.

**Table 1** Study Population Descriptive Statistics

| | Fallers | | Nonfallers | | Total Sample | | |
|---|---|---|---|---|---|---|---|
| | *N* | *n* (%) | *N* | *n* (%) | *N* | *n* (%) | *p* |
| Mean age (years)[a] | 23 | 88.2 (5.3) | 61 | 81.9 (8.3) | 84 | 83.6 (8.0) | <.01 |
| Mean FIM [a] | 23 | 57.3 (9.61) | 59 | 67.5 (15.4) | 82 | 64.8 (14.7) | <.01 |
| Mean length of stay (days)[a] | 21 | 39.1 | 61 | 21.5 | 82 | 26.0 | <.05 |
| Mean number of past medical diagnoses[a] | 23 | 8.2 (4.2) | 61 | 7.5 (3.2) | 84 | 7.7 (3.5) | .35 |
| Mean number of medications[a] | 23 | 12.0 (4.3) | 61 | 11.0 (4.0) | 84 | 11.3 (4.1) | .27 |
| Gender | 23 | | 61 | | 84 | | .01 |
| Male | | 17 (73.9) | | 26 (42.6) | | 43 (51.2) | |
| Female | | 6 (26.1) | | 35 (57.4) | | 41 (48.8) | |
| Primary diagnosis | 23 | | 61 | | 84 | | <.01 |
| Orthopedic | | 8 (34.8) | | 5 (8.2) | | 13 (15.5) | |
| Cardiac | | 2 (8.7) | | 12 (19.7) | | 14 (16.7) | |
| Respiratory | | 2 (8.7) | | 5 (8.2) | | 7 (8.3) | |
| Cognitive | | 3 (13.0) | | 1 (1.6) | | 4 (4.8) | |
| Complex medical | | 4 (17.4) | | 20 (32.8) | | 24 (28.6) | |
| Other | | 4 (17.4) | | 18 (29.5) | | 22 (26.2) | |
| Difficulty walking | 21 | 18 (85.7) | 58 | 27 (46.6) | 79 | 45 (57.0) | <.01 |
| Impulsive | 20 | 2 (10.0) | 60 | 5 (8.3) | 80 | 7 (8.80) | <.05 |
| Cognitively impaired | 22 | 11 (50.0) | 61 | 31 (50.8) | 83 | 42 (50.6) | .26 |
| Fall history | 22 | 17 (77.3) | 60 | 37 (61.7) | 82 | 54 (65.9) | .11 |
| Fear of falling | 19 | 8 (42.1) | 54 | 23 (42.6) | 73 | 31 (42.5) | .97 |
| Use of ambulatory aid(s) | 23 | 22 (95.7) | 61 | 47 (77.0) | 84 | 69 (82.1) | .06 |
| Fall risk status (upon admission) | 22 | | 61 | | 83 | | .18 |
| High | | 3 (13.6) | | 3 (4.9) | | 6 (7.2) | |
| Low | | 19 (86.4) | | 58 (95.1) | | 77 (92.8) | |

[a]Mean (standard deviation).

The HCPs that participated in the interviews consisted of eight adult men and women that worked on the geriatric unit, with an age range from 25 to 54 years. Interviews were conducted with two pharmacists, three OTs, and three PTs; of those, all participants were female, except for two PTs who were male. The pharmacists interviewed had an average of 19.0 years of work experience in their profession. The OTs had an average of 11.7 years of work experience; PTs had an average of 19.0 years of work experience; however, experience ranged from 11 to 31 years.

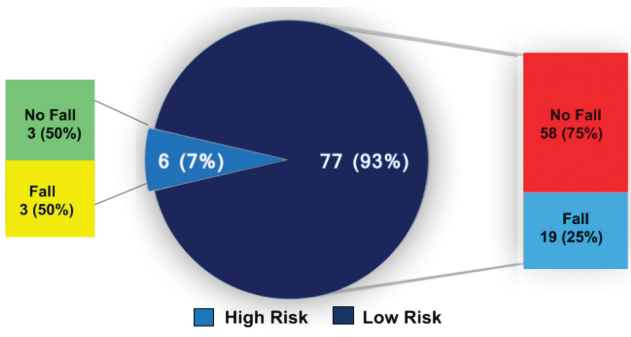


**Figure 2.** Overview of Fall Risk Status and Incidence Risk of Study Population.

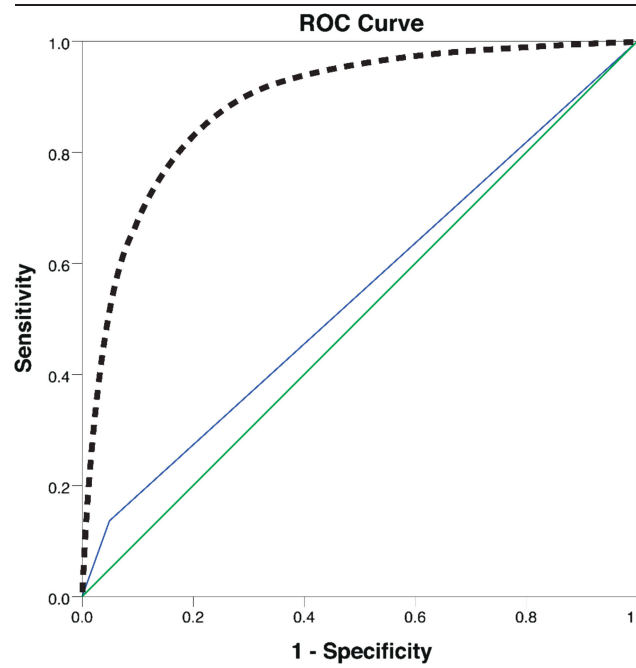


**Figure 3.** Performance of the fall risk screening tool (FRST) in practice. The area under (AUC) the receiver operating characteristic curve (ROC; indicated by the blue line) demonstrates the FRST's discriminatory ability, whereas the green line represents a nondiscriminatory test and the dotted line represents an optimal discriminatory test.

From the focus group and interviews, three major themes emerged from the data: (1) *knowledge* on fall risk factors and preventative measures; (2) *communication* between/within HCPs; and (3) *tool* benefits, challenges and future wants. When discussing factors that contributed to falls, there were some general understandings of which intrinsic aspects greatly affected falls (i.e., cognitive impairment, impulsivity, mobility status, etc.). However, when discussing risk factors with specific HCPs, knowledge varied greatly between professions. Pharmacists emphasized the role of medications in contributing to falls, where PTs focused on mobility and transfers. When prompted on roles of other risk factors, providers acknowledged the complexity of the problem, for example, by stating,

*[I]t's multifactorial—it's hard to prevent, it's hard to know exactly when [a fall] is going to occur.*

With regard to HCPs communicating with their colleagues, it was through informal verbal acknowledgment and visual cues. As one provider stated,

*[HCPs see] the mat [used as a preventative measure for high-risk patients] or the alarm then it's very clear that way.*

Very little communication occurred between OT/PTs and pharmacists regarding high-risk patient status.

Lastly, clinical judgment in the FRST to determine fall risk was seen as both a benefit and challenge. Nurses and pharmacists viewed it as a challenge leading to varying results, with one participant saying,

*I think it leaves a lot of subjective judgment, 'cause what could be a high risk for one person might not be a high risk for another, specifically for our elderly population.*

However, OTs and PTs saw benefits for allowing them to holistically assess patients. Some HCPs reflected on their experience using the Morse Fall Scale (Morse et al., 1989) and expressed that the scoring system was too restrictive in categorizing patients' fall risk for the complex population on the geriatric unit and preferred the score to be used as a guide rather than the final determination. Having clinical judgment as a component facilitated HCPs to draw on their experiences to change the fall risk status of patients that did not match the score. All HCPs were open to assessing fall risk contingent on the FRST not increasing workload. The information obtained from the focus group/interviews further deepened insights and highlighted problems related to the current FRST.

### *Recommendations*

The recommendations presented to the IRF included immediate, ongoing, and future ideas based on the results of the chart reviews, interviews/focus group, and literature to address individual-level, cultural, organizational, and system-level factors (Reason, 2000; RNAO, 2017; Watson, Salmoni, & Zecevic, 2019). Some of these ideas included the following:

- direct improvements on the tool, such as addition of age, primary diagnosis, gender, and admission FIM;
- formalized communication groups such as huddles or buddy systems;
- on-going staff education on fall risk; and
- future ideas including automating the tool to incorporate interprofessional sign off and flags to identify patients at high risk for falls using the FIM score.

Two authors discussed the implications of the data collected and collaborated on ways to incorporate more factors into the FRST with the partners at the IRF. Overall, the staff were receptive to the findings and arranged a task force to tackle the problems identified. Consistent with the modified SBM, involving the end-user in design decisions was an integral part of our recommendation process.

## Discussion

This study aimed to reduce the number of falls of seniors in an IRF by first understanding the context-specific problems and validating the correct identification of those problems to improve patient safety through an environmental scan, chart reviews, and interviews/focus group. It should be noted that the results may not be generalizable because the information collected reflects a problem experienced at a single facility; however, the translational research approach based on the SBM could be applied to other settings to understand gaps.

Through a literature review and observations on site, it was found that no standard FRST across geriatric IRFs exists. As a result, many facilities modify validated FRSTs to meet their specific needs. These modified tools may have limited ability to effectively determine fall risk. Moreover, the chart reviews found that, although 92.8% of patients were deemed "low fall risk," 24.7% of these patients suffered a fall (Figure 2), suggesting that both the FRST needed to be refined and that fall risk status should be frequently reassessed. As well, the statistical analysis indicated that the FRST had poor discriminatory power (Figure 3). These findings highlight that the tool was not optimal and required greater sensitivity to the risk profile that emerged from this work. Consistent with our findings, the literature suggested older age, difficulty walking, being male, and a lower FIM score at admission were all factors significantly associated with falling (Forrest &

Chen, 2016; Thomas et al., 2016; Williams et al., 2014; Vratsistas-Curto et al., 2018). These factors were not included in the FRST at the time and were suggested in the recommendation to the IRF.

The chart reviews also demonstrated that patients who fell stayed on average 17.6 days longer than patients who did not fall. However, it was not determined if falling was what caused the longer LOS. Forrest and Chen (2016) also found an association between falls and LOS, whereby an increase of days spent in hospital correlated directly with an increase in likelihood that an event would occur. Consistent with the literature, falling in the IRF resulted in lower change in FIM between admission and discharge alongside detrimental effects on patient recovery (Forrest & Chen, 2016; Kwan et al., 2012; Rosario et al., 2014). Future research could investigate this more comprehensively to understand if falls occurred earlier or later in stays and to determine causality. A limitation of the chart reviews was that the data were collected in two different ways (the retrospective and the prospective methods) but were combined to analyze trends of the whole sample.

As the chart reviews revealed that the FRST was not optimally working in the IRF, interviews/focus group were conducted to further elucidate the reasons behind this suboptimal performance and to gather information on the content most useful for fall risk screening, based on the needs of individual HCPs. Qualitative insights from HCPs revealed that, because of the multifactorial etiology of falls, each HCP's training and experience impacted their use of the FRST and evaluation of fall risk as related to fall prevention. For example, OTs and PTs focused on fall risk factors related to mobility, whereas pharmacists emphasized the importance of examining patient medications for side effects that may cause dizziness. Nurses demonstrated a more holistic perspective, as they were knowledgeable in many diverse fall risk factors (i.e., a patient's cognitive status as well as mobility). As the FRST used in the IRF was primarily based on subjective clinical judgment as opposed to objective measures, a lack of standardization was seen as an opportunity for improvement. The staff's readiness to integrate more HCPs into collaborative fall risk screening assessment procedures was another key insight. Equipping HCPs with the knowledge and tools they need to optimize fall risk screening requires continuous evaluation and improvement. A key limitation was the small sample size of the interviews and focus group. This could not be circumvented as all HCPs working on the geriatric ward were interviewed.

Following the development of recommendations, a meeting with key stakeholders initiated the cocreation process for improving their FPS and collaboration on feasible designs for an improved FRST. The session allowed for discussion and feedback on tangible changes that could be made in the FPS, which was a key step in facilitating the translation of the findings to the IRF (Figure 1). Outcomes from this session allowed for staff at the IRF to revisit improving their FRST to incorporate meaningful changes that may aid in reducing the number of falls.

### *Implications for Practice*

These findings have several implications for practice. The staff at the IRF had a good understanding of the components related to fall risk factors and acknowledged the importance of falls prevention, reflecting that they possessed the appropriate knowledge to enforce fall prevention practices. However, a gap was identified between HCPs' knowledge on fall prevention and the translation of this knowledge into practice. This finding suggests that staff may require more structure detailing the scope of responsibility for implementing preventative measures and accountability measures to ensure that implemented strategies are working or need to be reassessed. Another implication of this study was that nurses play a pivotal role in fall prevention and should be included in and part of the interprofessional team assessing fall risk in geriatric patients. Consistent with the body of research on FPS, there is not one gold standard approach or tool, and integrating all fall risk factors into a single tool may not be the ideal strategy (Chen, Gleeson, Mitchell, O'Donnell, & Olson, 2013; RNAO, 2017; Vratsistas-Curto et al., 2018). The setting, the HCP who assesses the patient, and what actions to take in response to the assessment should also be considered (Bruyère Research Institute, 2016; RNAO, 2017; Said et al., 2017). In this study, the results from the literature, chart reviews, and interviews/focus group were translated to inform a redesign of an IRF's FPS. Although this work was based on one IRF, the modified SBM can be applied to other studies and facilities to evaluate and improve existing processes.

## Conclusions

By utilizing a translational research lens and a modified version of the SBM, the study team used a novel approach to address the need to reduce falls in an IRF, enabling the facility to enact change through the critical input from associated HCPs. Using a data-driven approach, the FRST was evaluated quantitatively and qualitatively, and specific changes were recommended to the IRF to improve the FRST and FPS. By discussing the use of the FRST with different HCPs, silos of care were recognized as a barrier to the organization. As a result, a multidisciplinary task force was formed to pilot the suggested changes to the

## Key Practice Points

- Nurses play a pivotal role in fall prevention. With their knowledge of fall risk factors and interaction with patient populations, they should be part of the interprofessional team conducting fall risk assessments.
- Breaking down silos between different healthcare professionals and enhanced interprofessional communications may improve FPS in the IRF.
- Rehabilitation nurses may want to consider using the translational approach to identify gaps in their context-specific environment to improve FPS.

FRST. By emphasizing the need for constant improvement with respect to fall prevention and stimulating discussion among the whole healthcare team, the translational approach proved to be an effective means to framing and understanding a healthcare problem.

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### Conflicts of Interests

The authors have no conflicts of interests to declare.

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