THE RELATIONSHIP BETWEEN NURSES' KNOWLEDGE, SELF-EFFICACY, AND LEADERSHIP SUPPORT IN PREVENTING PATIENT FALLS

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Abstract

Incidents of patients falling are a notable issue in public health and a frequent negative occurrence in hospitals, often leading to injuries such as trauma, fractures, or brain damage, which significantly affect patients' overall well-being. At the Security Forces Hospital, the frequency of patient falls is consistent with global norms, but the fact that injuries result from around 30% of cases is problematic. This study applied a quantitative, cross-sectional approach to evaluate nursing staff's understanding of patient fall prevention. The primary objective was to assess the knowledge of patient fall prevention of the nursing staff and whether leadership support and nurses' self-efficacy impacted efforts to prevent falls. The result-oriented findings brought to light crucial areas in which nurses had knowledge gaps regarding fall prevention, with an overwhelming figure of 75.7% of the respondents recognizing non-contributory factors for falls, such as antibiotics, but relatively few (31.3%) who correctly mentioned multifaceted interventions as essential. Such findings show inherent opportunities for developing more effective accident prevention practices to improve patient safety in the hospital. This study reiterates that proactive educational programs and leadership play crucial roles in considerably reducing patient falls.

Keywords: Patient falls, injury prevention, nursing staff, leadership support, fall prevention practices

Introduction

Patient falls are included in the National Database of Nursing Quality Indicators (NDNQI), which monitors and analyzes data for service improvement. Patient falls significantly impact the standard of nursing care in acute care settings (1, 2). A fall is defined as "unintentionally coming to rest on the ground, floor, or other lower level, but not as a result of syncope or overwhelming external force" (1). It is considered the most common adverse event (3,4,5) and is a significant public health issue (6). Currie (1) concluded that falls with both fatal and nonfatal injuries are more prevalent in people older than 65 years of age. Likewise, the Centers for Disease Control and Prevention (CDC) (7) reported that approximately 25% of older adults (65 and older) fall annually, and Spoelstra (8) noted that half of hospitalized patients are at risk of falling during their hospitalization. The CDC reported that in 2018, over 52 million older adults fell and sustained over eight million injuries (9), and projected that by 2030, those figures would rise to 73 million falls and 12 million injuries.

According to Hussein and Mohamed (4), Laoingco and Tabugadar (2), and Montejano-Lozoya et al. (10), falls are typically preventable. The nature and severity of patient falls can vary between populations. Falls can result in injuries such as fractures, sprains, and bruises, which increase a patient's risk of falling and negatively affect the patient's recovery and satisfaction (11). Approximately one-third of hospital patient falls result in minor injuries (11), whereas 3–8% may result in fatal injuries, such as significant fractures or head injuries (12, 8). Such injuries can also result in psychological trauma, motor deficiencies, loss of autonomy (13, 14, 15), financial loss, an increase in the patient's length of hospital stay (12, 16, 4, 14, 10,8), and limitations on their physical activities (2, 15). The number of patient falls at the Security Forces Hospital (SFH) in Riyadh is within the NDNQI's international benchmark. However, approximately 30% of these incidents resulted in injuries.

Background

Age, mental, physical, or emotional impairment, issues with gait and balance, and limb weakness all contribute to a patient's risk of falling. Patient falls can be dangerous for people of all ages, with a higher likelihood of such incidents among the elderly due to physiological changes (4, 2, 6). The likelihood of falling increases as patients age (9, 6). This is a significant public concern, as it can lead to an increase in patient mortality. According to Currie (1), fall-related injuries are the primary cause of accidental death in older adults, resulting in roughly 41 deaths per 100,000 people annually. According to the WHO, falls were the second leading cause of death in 2018 (17). While less than 1% of hospital falls are fatal, this small percentage represents approximately 11,000 fatal hospital falls globally (1). Therefore, patient falls must be avoided whenever possible.

The NDNQI published its guidelines for data collection and submission of patient falls in 2021, highlighting various categories of patient falls, such as assisted falls, observed and unobserved falls, child drops, developmental falls, physiological falls, falls during play, and suspected intentional falls (18). Each category is defined, scored, and described differently in data collection and submission. Not all categories are reported and recorded; some are only reported if an injury results from the fall, while others are noted but not classified as a hospital adverse event based on specific NDNQI criteria. The SFH follows the NDNQI criteria regarding the reporting and recording of patient falls.

Literature Review

Although there is insufficient knowledge about how to prevent falls in hospitals (19), previous research suggests some methods and techniques to minimize the prevalence. Reducing the frequency of such adverse events is challenging, yet if accomplished, it may decrease morbidity, mortality, and healthcare costs (20, 12). According to the research, several factors affect reducing those occurrences, including patient-related factors like advanced age, muscle weakness, poor vision, previous fall history, and fear of falling (21), as well as non-patient-related factors like the nurses' ages, years of experience, self-efficacy, knowledge, and the use of bed or chair alarms. As this paper focuses on nursing staff, non-patient-related hospital factors that contribute to increased patient falls are considered.

Policies and procedures in healthcare settings establish standards for nurses to comply with mandatory protocols regarding fall prevention, assessment, scoring, and documentation, utilizing a recognized fall prevention tool. This compliance is significantly affected by the nurses' age and years of nursing experience. Although Laoingco and Tabugadar (2) did not find a significant correlation between the length of service and nurses' fall knowledge, Huy et al. (17) indicated that nurses with more years of experience had greater fall knowledge and a more positive perspective on fall prevention procedures. Conversely, Pinardi and Permanasari (15) stated that as nurses age and gain expertise in their field, they tend to conduct fall assessments as a routine part of nursing care, resulting in a decline in compliance with conducting appropriate fall prevention assessments, relying instead on their judgment when assessing a patient's dependency.

According to Dykes et al. (22), self-efficacy was first proposed by Bandura in 1977; it is a crucial variable that influences the actions people take and their levels of performance. Their research emphasizes how actions taken compare to the expected outcomes. According to Twibell et al. (5), nurses' confidence in their ability to perform a desired behavior is a component of self-efficacy, followed by the expectation that this will have a positive outcome. The researchers added that the absence of these expectations may decrease the incentive

to act appropriately. Therefore, nurses' confidence and self-efficacy play an essential role in preventing patient falls.

Montejano-Lozoya et al. (10) noticed that nurses' educational programs effectively reduce the incidence of falls, thereby enhancing the quality of nursing care and patient safety. Other studies recommend enhancing nurses' knowledge of medications as part of their training. The CDC (23, 24) stated that evaluating the medication lists of senior patients with a clinical pharmacist trained in medication management may decrease the likelihood of medication-related falls.

Finally, some studies suggest alternate methods that can help nurses lower the probability of patient falls. According to King et al. (14), using a bed or chair alarm or restricting a patient's mobility to prevent falls is ineffective and may worsen the patient's medical condition. In addition, patients who experience frequent falls often discover that medication adjustments and, most significantly, dietary interventions are more effective. This literature review compares the impact of various factors on the probability of collapsing.

Research on fall prevention measures remains necessary (10), because effective strategies that help reduce falls are lacking (25,5), and fall prevention strategies have little impact on fall rates (12, 26, 14). After a thorough description of the identified factors that influence the likelihood of falls, the purpose of this study was to assess nurses' knowledge of patient fall prevention as well as the impact of nurses' self-efficacy and management support on the reduction of these potentially adverse occurrences.

Methods

Research Design

A quantitative cross-sectional design was used to evaluate the knowledge, self-efficacy, and perceived leadership support of nurses in fall prevention at the Security Forces Hospital in Riyadh. The study was devised to provide a "picture" of current practices and attitudes, which, in turn, would lay a basis for targeted programs to decrease the possibility of adverse events and to improve patient safety outcomes. The sample included registered nurses who worked for the Security Forces Hospital Program (SFHP) in Riyadh, Saudi Arabia. Approximately 1,100 registered nurses are employed at SFHP Riyadh. The researchers selected six distinct hospital units with a high incidence of patient falls. A random number generator (RNG) was used to select a sample from the list of all registered nurses working in these units at the time of this study. The RNG assigned each nurse a unique identification number, and then the program randomly picked numbers corresponding to the people invited to participate in the survey. This method minimizes potential unfairness or bias in the selection of candidates. The selected employees

were then invited to participate in the study. The survey was an online questionnaire accessed via a link emailed to the respondents.

Participant Inclusion and Exclusion Criteria

Inclusion criteria selected individuals with at least one year of work experience at SFHP and not currently assigned in primary care clinics, to focus on those with direct care responsibility in areas where falls are more prominent. Exclusion criteria were applied to ensure the reliability of the data. Responses were excluded if they were incomplete (more than 10% of questions unanswered), or if they exhibited patterns indicating a lack of attention or a repetitive pattern of answers (e.g., selecting the same answer for every question). This threshold was determined during the pilot study with the intention of striking a balance between the need for information and the feasibility of survey completion.

Data Collection Instrument

The study adapted three existing survey tools for data collection. The survey began with demographic questions (age, gender, working unit, highest nursing degree, nursing experience, organization experience, and job title), followed by questions regarding fall prevention knowledge, and two scales measuring the nurses' fall prevention self-efficacy and their perception of nursing management support.

The section pertaining to fall prevention knowledge contained two parts. The first section was adapted from the Singapore Ministry of Health Nursing Clinical Practice Guidelines on Prevention of Falls in Hospitals and Long-Term Care Institutions and Dr. Serena Koh's 2009 version. Each of the 13 multiple-choice questions in the survey could offer more than one correct response. This scale aims to measure and assess the gaps in the current fall prevention knowledge of staff nurses. The second section consisted of ten questions, obtained from Dykes et al. (19), designed to assess nurses' knowledge of fall prevention through true or false questions. In their study, this scale's validity was found to be adequate, with a score of 0.73.

The first scale measured the nurses' self-efficacy for fall prevention. Based on the findings of Dykes et al. (22), the validity of this scale is reliable, with a score of 0.89. The fall prevention self-efficacy scale for nurses consisted of 11 questions, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). Before proceeding to the final scale, a question was added to determine whether the staff nurses had received fall prevention training from their organization in previous years. The second scale assessed the level of support that the general nursing administration provides to the staff. This measurement was obtained with a scale used by Demircioglu et al. (27), which has nine questions and response options similar to the previous scale.

Ethical Considerations

Ethical approval for this study was granted by the SFH Research Ethics Committee. Participants were fully informed of the study's purpose, assured of the anonymity of their data, and told that participation was voluntary, with no penalties for refusal. Prior to accessing the survey, the participants were informed in writing that completing the survey would be considered consent to collect their responses. The study adhered to the principles outlined in the Declaration of Helsinki regarding ethical standards in research involving human subjects, including privacy and data protection protocols.

Data Analysis

The responses were collected and uploaded into version 26 of the Statistical Package for the Social Sciences (SPSS). The data were screened and examined for inaccuracies and missing values. Respondents who completed the survey but provided nearly identical responses to most questions were deemed to have offered repetitive responses, thereby diminishing their credibility.

Results

Sample Characteristics

A total of 144 nurses participated in the survey, yielding a response rate of 72% of the target demographic. The dataset was subjected to a cleansing process in which 19 responses from individuals with less than one year of experience in the organization were excluded. This decision was made due to concerns regarding the credibility of their participation. As detailed in Table 1, the sample was predominantly female, with 112 participants (90%). Their average age was 38.4 years, with a standard deviation (SD) of 7.65 years. On average, the participants had 14.5 years of nursing experience (SD 7.14), and had been employed by the organization for an average of nearly seven years (SD 5.9). The vast majority (98%) were employed as frontline nurses. Twenty-seven (22%) possessed a diploma in nursing, 91 (73%) held a bachelor's degree in nursing, and seven (5%) had master's degrees or postgraduate certificates in nursing (Table 1).

Staff Knowledge Test

The fall prevention knowledge questions were designed to evaluate the understanding of registered nurses regarding patient falls and strategies for preventing them. The results demonstrated high levels of fall prevention knowledge among the participants. The multifactorial etiology of falls and the significance of multifaceted interventions were widely acknowledged, with a notable recognition rate of 31.3%. Furthermore, a substantial percentage (75.7%) accurately recognized that antibiotic usage is not a contributing factor to falls in acute hospital environments. In addition, a significant proportion (79.7%) of participants accurately recognized that it was inappropriate to relocate acutely confused patients at a greater distance from nursing stations. Ultimately, a substantial majority (80.9%)

agreed that the responsibility for fall prevention should not rest solely on nurses, and an even larger majority (85.9%) believed that education should be provided throughout prevention programs rather than just at the beginning. These findings highlight the importance of participants acquiring education to ensure that nurses have accurate knowledge to effectively prevent patient falls.

The second section of the fall prevention knowledge survey gauged the nurses' understanding of fall prevention strategies. Significantly, 54% expressed the opinion that hospitals need to create forms for assessing the risk of falls, highlighting a possible deficiency in acknowledging the advantages of standardized instruments. An important discovery was that 97% of the respondents had the mistaken belief that the three-step fall prevention process mainly consists of documentation. This highlights the need for a better understanding of the comprehensive nature of preventive strategies. Although there was strong recognition (90%) that a fall risk screening scale effectively identifies individuals with physiological issues, there was room for improvement in understanding the importance of personalized prevention plans for each patient. This is evident from the misconception (92%) that patients at a low risk of falling do not need such plans. These observations emphasized the importance of focused education in enhancing nurses' comprehension of evidence-based fall prevention strategies.

The self-efficacy survey administered to registered nurses yielded valuable insights into their confidence levels in implementing fall prevention practices. Nurses exhibited considerable assurance in various facets of their responsibilities in averting patient falls. Almost half (49.6%) of the respondents reported having convenient access to information on preventing patient falls, suggesting a high level of readiness in this aspect. Furthermore, a significant number (47.2%) concurred that they are provided with verbal reports regarding their patients' susceptibility to falling, emphasizing the implementation of efficient communication strategies among the healthcare staff. Nevertheless, certain aspects raised concerns, notably that 19% of nurses indicated not having received a verbal report regarding their patients' fall risk, indicating possible deficiencies in the execution of protocols. In general, although nurses showed confidence in certain aspects of fall prevention, specific interventions may be necessary to enhance self-efficacy in areas that need improvement.

The last part of the survey, an assessment of leadership support for fall prevention initiatives, provided insights into the extent of administrative engagement and encouragement within healthcare departments. A significant majority (84.8%) of participants reported receiving fall prevention education or in-service training provided by the general nursing administration in the past 12 months, indicating strong organizational support. Regarding direct managerial support, nurses expressed positive sentiments, with over 50% agreeing that their

Table 1. Sample Characteristics

Category	No. (%)	Mean ± SD (range)
Gender		
Male	13 (10)	
Female	112 (90)	
Age (years)		38.4 ± 8.9 (25–55)
Highest Nursing Degree		
Bachelor	91 (73)	
Diploma	27 (22)	
Master	4 (3)	
Postgraduate certificate	3 (2)	
Work Position/Title		
Assistant Head Nurse	1 (1)	
Head Nurse	1 (1)	
Registered Nurse	7 (6)	
Registered Nurse 1	46 (37)	
Registered Nurse 2	69 (56)	
Working Area		
Emergency Department	53 (42)	
Medical	34 (27)	
OB/Gyn	13 (10)	
Surgical	25 (20)	
Length of time practicing nursing as a career (years)		14.6 ± 9.7 (1–35)
Length of time working at current hospital/organization (years)		6.9 ± 7.1 (1–25)
Received a fall prevention education/in-service within the last 12 months		
Yes	19 (15)	
No	106 (85)	

managers encouraged them to contribute ideas, aided in capability development, and invited diverse perspectives. However, there were areas for improvement, particularly in fostering resilience in the face of difficulties or failures, with only 46.4% of respondents affirming this aspect of their managers' leadership. Additionally, while general nursing administrators were perceived positively in terms of engaging staff in fall prevention strategies and identifying competent individuals, there was room for enhancement in effectively leading and managing change and encouraging innovation and creativity; 51.2% agreed with these responses.

Discussion

The findings of this survey shed light on the current awareness and potential misconceptions among nurses regarding fall prevention strategies in the SFHP in Riyadh. While some aspects of fall prevention are well recognized, such as the multifactorial nature of falls and the importance of staff education, several questions revealed areas needing improvement. One notable observation was the prevalent belief among nurses that hospitals should develop their own fall risk assessment forms. This indicates a potential gap in understanding the value of standardized assessment tools, which have been shown to improve accuracy and consistency in identifying patients at risk of falling. Further education and training on the benefits of standardized assessment tools may be warranted to address this misconception.

Additionally, the survey highlights a common misconception regarding the components of the three-step fall prevention process, with many nurses associating it primarily with documentation. This suggests a need for more transparent communication and training on the comprehensive nature of fall prevention strategies, encompassing screening, personalized prevention plans, and documentation as integral components. Moreover, although most nurses acknowledge the significance of utilizing fall risk screening scales to detect patients with physiological issues, there seemed to be a lack of comprehension regarding the importance of particular prevention strategies for all patients, irrespective of their perceived risk levels. The erroneous belief that low-risk patients do not need prevention plans highlights the necessity for continuous education regarding fall prevention measures for all patients.

These findings highlight the significance of focused education and training programs to improve nurses' understanding and ensure the successful application of evidence-based strategies for preventing falls in healthcare environments. Healthcare institutions can reduce the occurrence of falls and enhance patient safety outcomes by correcting misunderstandings and reinforcing fundamental fall prevention principles.

Limitations and Recommendations

The survey's reliance on self-reported data from registered nurses may introduce participant bias, as respondents may provide answers they perceive as socially desirable rather than reflecting their knowledge or practices related to fall prevention. Another limitation is that the sample population consists exclusively of registered nurses from the SFHP, potentially limiting the generalizability of the findings to other healthcare professionals involved in fall prevention efforts. Finally, although the survey assessed nurses' knowledge and perceptions regarding fall prevention, it focused primarily on specific aspects of fall risk assessment, intervention strategies, and patient education. As such, it may have overlooked other factors influencing fall prevention practices, such as organizational policies, resource availability, and interdisciplinary collaboration.

Future research should include perspectives from a diverse range of healthcare professionals involved in interdisciplinary teams to gain a comprehensive understanding of the challenges and best practices in fall prevention efforts. In future research, performing longitudinal studies to monitor the evolution of healthcare professionals' knowledge, attitudes, and practices regarding fall prevention would facilitate an evaluation of the lasting impact of education and training programs. Furthermore, quantitative surveys could be augmented by incorporating qualitative research methods, such as interviews or focus groups, to investigate the underlying factors influencing healthcare professionals' responses. This might include identifying obstacles to implementing evidence-based fall prevention strategies and identifying factors that contribute to successful interventions.

Conclusion

In conclusion, this study offers significant revelations about the understanding and actions of registered nurses concerning preventing falls in healthcare environments. The survey findings underscore the solid aspects and areas for enhancing initiatives to prevent falls. In general, nurses possess a comprehensive understanding of complex interventions and the significance of personalized care in preventing falls, but there were deficiencies in specific aspects, such as identifying risk factors and utilizing standardized tools for assessing fall risks. It is crucial to address these gaps to improve patient safety outcomes by providing focused education, promoting interdisciplinary collaboration, and offering organizational support. This could enhance the effectiveness of fall prevention strategies. To reduce the occurrence of patient falls and ensure the best possible care, it is crucial to prioritize continuous education, rely on practices supported by evidence, and foster a culture that emphasizes safety in all healthcare environments. Through the ongoing improvement of fall prevention protocols and by promoting a cooperative approach among healthcare practitioners, the organization can work toward the common objective of decreasing falls and the resulting rates of injury and death.

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