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Original Research Article

A study on fall incidences affecting patient's safety in a multispecialty hospital

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ABSTRACT

Background: Falls in healthcare settings are a significant concern, resulting in fear, pain, injuries, extended hospital stays, patient discomfort, and diminished quality of life. Several risk factors for falls have been identified, including age, gender, medications, mental status, chronic conditions, and environmental factors. This study aimed to determine fall risk-related activity patterns in patients during hospitalization and identify and describe the incidences of falls, circumstances of falls, and fall-related injuries.
Methods: A retrospective, time-bound study was conducted, collecting data from fall incidence reports, patient medical records, and nursing department data using a mixed-methods approach (quantitative data) over a 9-month period (January 2023 to September 2023). The study included all fall patients from January 2023 to September 2023, with a total of 12,673 inpatients and 11 reported fall incidences.
Results: The study found that the age group 61-80 years had the highest fall risk incidences, with most falls occurring at night due to patients not wanting to disturb relatives or call nurses for assistance. Additionally, a lack of education regarding fall risk from nurses to patients and relatives was observed, and in some cases, relatives were not present, and nurses were unaware of the patient's solitude.
Conclusions: Fall interventions should be linked to each etiologic factor, and accidental falls can be prevented by ensuring a safe environment. Healthcare and nursing teams play a crucial role in fall prevention, interacting with patients the most, and proper training and autonomy are essential for implementing and assessing individualized preventative measures using information technology systems and tools.

Keywords: Fall, Healthcare, Hospitalization, Patient safety, Prevention, Risk factors

INTRODUCTION

According to the World Health Organization (WHO), a fall is defined as "an event that results in a person coming to rest inadvertently on the ground or floor or other lower level".[1] Patient falls are a significant safety concern in healthcare settings, particularly in hospitals, where patients are more vulnerable due to illness, medications, and limited mobility. Falls are unintentional events where patients lose balance and land on the floor or another lower surface. They are one of the most common incidents in hospitals, affecting a substantial portion of hospitalized patients each year. The consequences of falls can range from minor bruises to severe injuries, including fractures, head trauma, and even death. In addition to physical harm, falls can lead to increased healthcare costs, extended hospital stays, and a decline in patients' overall quality of life.

The frequent occurrence of patient falls in hospitals is a significant concern for healthcare systems. Inpatient falls are the most frequent incidents in hospitals, with 3-10% resulting in physical injuries, such as bone fractures and intracranial hemorrhages.[2] Therefore, prompt

identification of falls that result in injury is crucial. Research has identified several risk factors for falls, including age, gender, specific medications, mental status, chronic conditions, and environmental factors.[3] Despite efforts to prevent falls, these incidents remain common and affect an estimated 700,000 to 1,000,000 hospitalized patients annually.[4]

Certain diseases, such as Alzheimer's disease, Parkinson's disease, and stroke, increase the risk of falls. Effective risk assessment methods are essential, and those based on routinely collected data may be highly effective for hospitalized patients.[5] While many hospitals have implemented fall prevention programs, patient falls remain a persistent issue. Various recommendations have been proposed for managing environmental hazards in healthcare settings, but only bed rails are supported by research evidence.[6] Other suggestions include patient assessments, appropriate footwear, safe flooring, adequate lighting, appropriate staffing levels, and the use of bed alarms.

This makes fall prevention a high priority in healthcare systems worldwide, as addressing this issue can significantly improve patient outcomes and reduce the burden on both patients and healthcare providers.

Objectives

To determine the fall risk related activity patterns in patients during hospitalization. To identify and describe the incidences of falls and circumstances of falls and fall related injury.

METHODS

Study Design

This was a retrospective, and time bound study.

Setting

The study was conducted at City Hospital.

Tools and techniques of data collection

Data was collected through fall incidence reports, patient's medical records, and nursing department records.

Data collection method

A mixed-methods approach was used to collect quantitative and qualitative data.

Study period

Data was collected over a nine-month period, from January 2023 to September 2023, during which a total of 12,673 patients were admitted and 11 fall incidents were reported.

Inclusion criteria

All patients who experienced falls during the study period (January 2023 to September 2023) were included in the study.

Ethical approval

The study was approved by the institutional ethics committee (IEC) of City Hospital.

Statistical analysis

Descriptive statistics were used to analyze the data. Frequency distributions and percentages were calculated for categorical variables using SPSS version 23.

RESULTS

This section presents the analysis and interpretation of the data collected from the fall incidence reports. Section 1: age group distribution of patients. Section 2: monthly patient falls. Section 3: distribution of patients by activity. Section 4: circumstances of patient falls. Section 5: distribution of patients by type of injury.

Section 1: age group distribution of patients

This section describes the distribution of patients across different age groups.

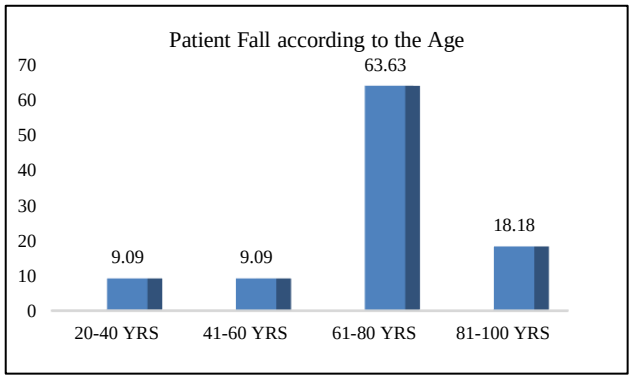

Figure 1: Patient fall according to the age.

The majority of patients (63.63%) were between 61-80 years old, indicating that this age group is most prone to falls. The second-largest group is patients aged 81-100 years, accounting for 18.18% of the total. The youngest age group (20-40 years) and the middle-aged group (41-60 years) have the lowest percentages, with 9.09% each.

Section 2: monthly patient falls

This section shows the number of patients falls that occurred each month during the study period.

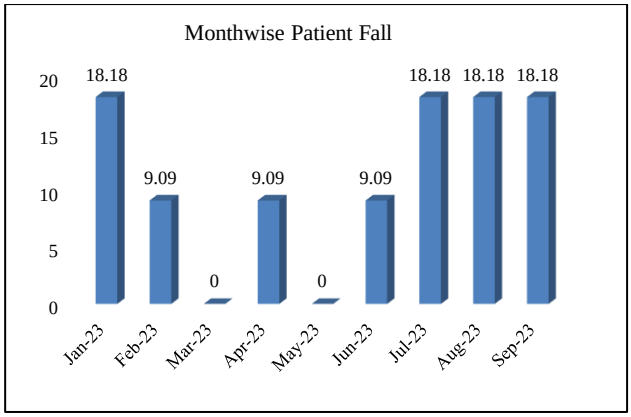

Figure 2: Monthwise patient fall.

Patient falls were highest in January, July, August, and September 2023, with 2 falls each (18.18% of the total). Falls occurred in February, April, and June 2023, with 1 fall each (9.09% of the total). No patient falls occurred in March and May 2023 (0%).

Section 3: distribution of patients by activity

This section categorizes patients according to the activity that were engaged in at the time of the fall.

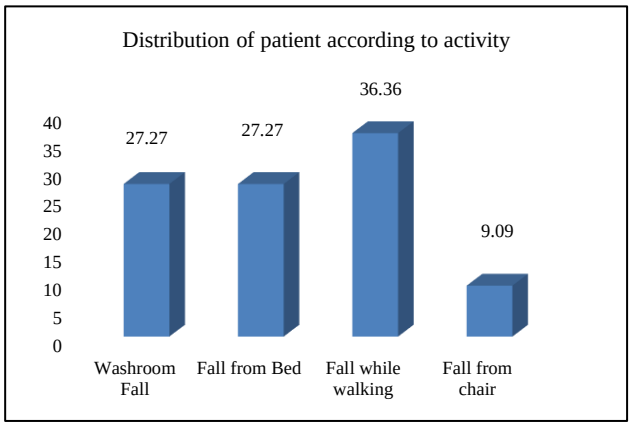

Figure 3: Distribution of patient according to activity.

The majority of patient falls (36.36%) occurred while walking. Falls in the washroom and from bed were equally common, each accounting for 27.7% of the total. Falls from chairs were the least common, accounting for 9.09% of the total.

Section 4: circumstances of patient falls

This section describes the circumstances surrounding each fall.

The Figure 4 reveals that the majority (36.36%) were due to slippery floors, followed by disease conditions (27.27%), medication (18.18%), and side rails being down (18.18%).

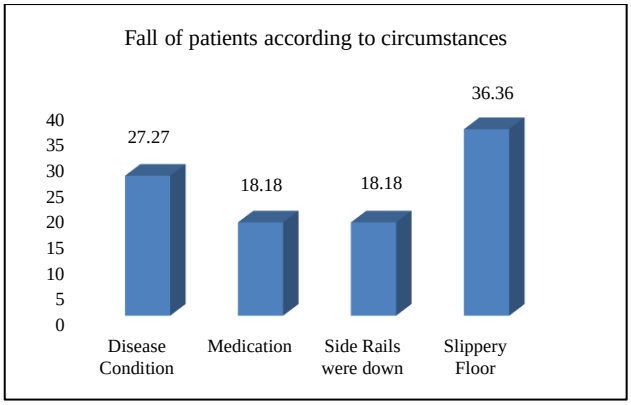

Figure 4: Fall of patients according to circumstances.

Section 5: distribution of patients by type of injury

This section classifies patients according to the type of injury sustained during the fall.

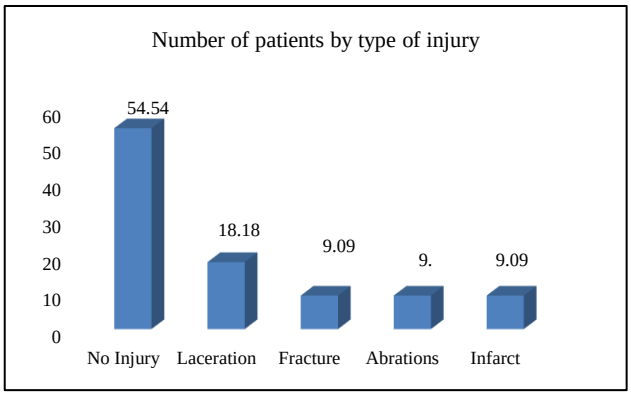

Figure 5: Number of patients by type of injury.

The data reveals that most patients (54.54%) who fell fortunately sustained no injuries, while others experienced a range of injuries, with lacerations being the most prevalent (18.18%), followed by fractures, abrasions, and infarct, each accounting for 9.09% of the total.

DISCUSSION

The data analysis reveals several key insights into patient falls. Firstly, the majority of patients who fell (63.63%) were between 61-80 years old, indicating that this age group is most prone to falls. This is consistent with existing literature, which suggests that older adults are at a higher risk of falling due to factors such as decreased mobility, balance, and cognitive function. According to Akyol, the risk factors for falls in the elderly include increasing age, medication use, cognitive impairment and sensory deficits. To reduce the incidence of patient falls, clinicians and researchers have developed a variety of risk assessment tools to aid in the identification of patients at greater risk of falling.[7]

Notably, most fall incidences occurred at night, suggesting that patients may be more likely to attempt to ambulate to the washroom without assistance due to not wanting to disturb relatives or call nurses for help. Additionally, some patients were alone in their rooms without relatives or nurses aware of their presence, highlighting a lack of surveillance and support. According to Hitcho, et al, they say that many falls were unassisted (79%) and occurred in the patient's room (85%), during the evening/overnight (59%), and during ambulation (19%). Half of the falls (50%) were elimination related, which was more common in patients over 65 years old.[8]

Furthermore, the data showed that falls while walking (36.36%) were the most common, followed by falls in the washroom and from bed (27.27% each). Slippery floors (36.36%) were the leading cause of falls, followed by disease conditions (27.27%), medication side effects (18.18%), and side rails being down (18.18%).

The data also reveals that most patients (54.54%) who fell sustained no injuries, while others experienced a range of injuries, with lacerations being the most prevalent (18.18%). This highlights the importance of prompt medical attention and injury prevention strategies. According to Morse, fall interventions must be linked to each etiologic factor. Accidental falls are preventable by ensuring a safe environment. Slips are preventable, for example, by ensuring that water and urine are immediately wiped up and that slippers and shoes have non-skid soles. Equipment is routinely checked and repaired; bed brakes hold the bed and do not permit it to roll away if someone leans on it.[9]

The study highlights the need for improved education regarding fall risk from nurses to patients and relatives, as well as increased surveillance and support for high-risk patients, particularly at night. Additionally, measures to address environmental hazards such as slippery floors and improve patient safety protocols are crucial to reducing the incidence of falls. According to Stalhandske et al, they say that fall prevention can be achieved with the integration of factors such as optimal use of the hospital environment, constant evaluation and re-evaluation of errors and practices that have proven effective, as well as good communication between healthcare providers in a comprehensive hospital care program, quantifying the risk of particular triggering events for falls and analysing the action taken to mitigate this risk.[10] According to Kafantogia et al, the health care and nursing teams play a most important role in the overall prevention of falls, since they are the individuals who interact with patients the most. Thus, for the implementation of any successful program, the teams must be given the proper training to recognize patients who are at risk of falling and the autonomy to implement and assess the benefits of different and individualized preventative measures with the use of information technology systems and tools.[11] According to Ganz et al then, working alongside all teams responsible for the treatment of the patient as well as the administration, they can bring about positive outcomes. In order to achieve this coordination, an organizational culture and operational practices that promote teamwork and communication, as well as individual expertise are required.[12]

This study has some limitations. The retrospective design and single-center setting may limit the generalizability of the findings. Additionally, the small sample size of fall incidents (n=11) may not be representative of the larger population. Future studies with larger sample sizes and multi-center designs are needed to validate these findings.

CONCLUSION

In conclusion, the study highlights the importance of addressing patient falls in a tertiary care setup, particularly among the elderly population. The findings suggest that falls are a significant concern, with the majority occurring among patients between 61-80 years old, often due to slippery floors, inadequate surveillance, and lack of education. To mitigate this, it is crucial to implement measures such as improved education and awareness, enhanced surveillance, environmental modifications, and standardized safety protocols. Additionally, encouraging patient and family engagement, incident reporting, and continuous quality improvement are vital to reducing fall-related injuries and promoting a safe hospital environment. By prioritizing fall prevention, healthcare providers can significantly enhance patient safety and well-being.

Recommendations

Communicate safety information to clinical and non-clinical staff. Maintain a healthy and safe hospital environment. Provide appropriate nursing care to all patients. Educate patients and their families on fall prevention. Ensure clean floors and toilets to prevent slips and falls. Implement standard safety measures to prevent fall-related injuries. Use incident reporting system for immediate risk assessment and improvement. Continuously review and improve fall prevention strategies. Engage patients and families in fall prevention efforts. Train staff on fall prevention and response.

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REFERENCES

1. World Health Organization. Falls. Available from: http://www.who.int/mediacentre/factsheets/fs344/en/. Accessed on 20 August 2017].
2. Toyabe SI. Characteristics of inpatient falls not reported in an incident reporting system. Glob J Health Sci. 2015;8(3):17.

3. Kerzman H, Chetrit A, Brin L, Toren O. Characteristics of falls in hospitalized patients. J Adv Nurs. 2004;47(2):223-9.
4. Cox J, Thomas-Hawkins C, Pajarillo E, DeGennaro S, Cadmus E, Martinez M. Factors associated with falls in hospitalized adult patients. Appl Nurs Res. 2015;28(2):78-82.
5. Halfon P, Eggli Y, Van Melle G, Vagnair A. Risk of falls for hospitalized patients: a predictive model based on routinely available data. J Clin Epidemiol. 2001;54(12):1258-66.
6. Hignett S, Masud T. A review of environmental hazards associated with in-patient falls. Ergonomics. 2006;49(5-6):605-16.
7. Akyol AD. Falls in the elderly: what can be done? Int Nurs Rev. 2007;54(2):191-6.
8. Hitcho EB, Krauss MJ, Birge S, Claiborne Dunagan W, Fischer I, Johnson S, et al. Characteristics and circumstances of falls in a hospital setting: a prospective analysis. J Gen Intern Med. 2004;19(7):732-9.
9. Morse JM. Enhancing the safety of hospitalization by reducing patient falls. Am J Infect Control. 2002;30(6):376-80.
10. Stalhandske E, Mills P, Quigley P, Neily J, Bagian JP. VHA's national falls collaborative and prevention programs. Advances in Patient Safety: New Directions and Alternative Approaches. (Vol. 2: Culture and Redesign) Rockville (MD): Agency for Healthcare Research and Quality (US); 2008.
11. Kafantogia K, Katsafourou P, Tassiou A, Vassou N. Falls among hospitalized patients. J Frailt Sarcop Falls. 2017;2(3):53.
12. Ganz DA, Huang C, Saliba D, Shier V, Berlowitz D, VanDeusen Lukas C, et al. Preventing falls in hospitals: a toolkit for improving quality of care. Ann Intern Med. 2013;158(5 Pt 2):390-6.

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