

A Descriptive Study to Assess the Knowledge Regarding Prevention of Falls Among Elderly Patients Admitted at NMCH, Jamuhar, Sasaram, Bihar.

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Abstract—Background. Falls are among the most common health problems affecting older adults and are a leading cause of morbidity, mortality, disability, and loss of independence. Age-related physiological changes, including reduced muscle strength, impaired balance, poor vision, cognitive decline, and multiple chronic illnesses, substantially increase the risk of falls. Hospitalized elderly patients are particularly vulnerable because of acute illness, unfamiliar surroundings, polypharmacy, and reduced mobility. Adequate knowledge regarding fall prevention plays a crucial role in minimizing the risk of falls and promoting patient safety.

Objectives - To assess the level of knowledge regarding prevention of falls among elderly patients admitted to the medical wards at NMCH, Jamuhar. To determine the association between the level of knowledge regarding fall prevention and selected demographic variables among elderly patients.

Methodology - A quantitative research approach with a descriptive research design was adopted for the study. The study was conducted among elderly patients admitted to the medical wards of Narayan Medical College and Hospital (NMCH), Jamuhar, Sasaram, Bihar. A random sampling technique was used to select 60 elderly patients. Data were collected using a self-structured demographic proforma and a structured knowledge questionnaire on fall prevention. The collected data were analyzed using descriptive statistics (frequency and percentage) and inferential statistics (Chi-square test).

Results- Among the 60 participants, 10 (16.7%) had poor knowledge, 31 (51.7%) had moderate knowledge, and 19 (31.6%) had good knowledge regarding fall prevention. Statistical analysis revealed no significant association between the level of knowledge and selected

demographic variables, including age, gender, education, religion, and marital status ($p > 0.05$).

Recommendations- The findings suggest the need for structured educational interventions to improve awareness regarding fall prevention among elderly patients. Regular health education sessions, patient counseling, and hospital-based awareness programs should be implemented to enhance patient safety. Future studies with larger sample sizes and in multiple healthcare settings are recommended to improve the generalizability of the findings.

Conclusion- The study concluded that the majority of elderly patients possessed a moderate level of knowledge regarding fall prevention. No statistically significant association was found between knowledge level and the selected demographic variables. The findings emphasize the importance of continuous patient education and preventive strategies to reduce the incidence of falls and improve the quality of care among hospitalized elderly patients.

Index Terms—Elderly patients, Fall prevention, Knowledge, Hospitalized patients, Patient safety, Descriptive study.

I. INTRODUCTION

A fall is an unintentional change in position resulting in coming to rest on the ground, floor, or lower level. Falls are one of the most common and serious health problems affecting the elderly population worldwide. With advancing age, physiological changes such as decreased muscle strength, poor balance, impaired vision, and chronic illnesses increase the risk of falls.

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According to the World Health Organization (WHO), falls are the second leading cause of unintentional injury deaths globally, and about 37.3 million falls occur each year that are serious enough to require medical attention. Older adults, especially those above 60 years of age, experience the highest rates of falls and fall-related injuries.²

In India, the burden of falls among older adults is also increasing with rapid population ageing. According to census-based estimates, India had approximately 138 million elderly people (60+ years) in 2021, and the number is projected to rise to 194 million by 2031, increasing the vulnerability to age-related issues, including falls.³

Knowledge about fall risks and prevention plays a critical role in programs designed to reduce fall incidence among older adults. Research from various countries suggests that while some older adults have general awareness of falls and their consequences, many have limited or only average knowledge regarding specific risk factors and preventive measures.⁴

Falls among elderly patients are a major cause of morbidity, mortality, and loss of independence. Falls can lead to serious physical injuries such as fractures, head injuries, soft tissue damage, and prolonged hospitalization. Psychological consequences such as fear of falling, anxiety, depression, and reduced confidence in mobility are also common. These outcomes negatively affect quality of life and increase healthcare costs. Preventing falls is therefore a priority in geriatric and hospital nursing care.⁵

II. NEED OF THE STUDY

Falls among elderly individuals are a major cause of injury, hospitalization, disability, and loss of independence worldwide. With the rapid growth of the geriatric population, the burden of falls is expected to increase significantly in the coming years. In India, the prevalence of falls among older adults ranges from 29% to 37%, making falls one of the leading causes of functional decline and poor health outcomes among the elderly.⁶

Poor understanding of environmental safety measures, physical activity, and self-care practices further increases the risk of falls among older adults. Hospitals and clinical settings provide an important opportunity for healthcare professionals to educate

elderly patients regarding fall prevention, as they have frequent contact with patients during hospitalization.⁷ Assessment of knowledge regarding fall prevention among elderly patients helps identify existing knowledge gaps and enables healthcare professionals to develop appropriate educational interventions, preventive strategies, and patient-centered care plans. These measures can reduce fall-related morbidity, improve patient safety, and enhance the overall quality of life among elderly individuals.⁸

Falls are one of the most common geriatric health problems and are increasingly recognized as a major patient safety concern in hospitals. Age-related decline in mobility, balance, muscle strength, sensory function, and cognitive ability significantly increases the risk of falls. Hospitalized elderly patients are exposed to additional risk factors such as acute illness, polypharmacy, unfamiliar surroundings, medical procedures, and reduced supervision, making them more vulnerable to accidental falls during their hospital stay.⁹

Globally, falls contribute to substantial morbidity, disability, prolonged hospitalization, loss of independence, and increased healthcare costs. Fall-related injuries such as fractures, head injuries, fear of falling, and psychological distress adversely affect the quality of life of older adults and may lead to institutionalization. Despite being largely preventable, fall-related injuries continue to occur due to inadequate awareness of preventive strategies. Therefore, improving knowledge regarding environmental modifications, safe mobility practices, use of assistive devices, physical activity, and medication-related precautions is essential to reduce fall risk and promote patient safety among hospitalized elderly patients.¹⁰

Title Of Study

A Descriptive Study to Assess the Knowledge Regarding Prevention of Falls Among Elderly Patients Admitted at Narayan Medical College and Hospital (NMCH), Jamuhar, Sasaram, Bihar.

Objectives

- To assess the level of knowledge regarding prevention of falls among elderly patients admitted to the medical wards at NMCH, Jamuhar.

- To determine the association between the level of knowledge regarding fall prevention and selected demographic variables among elderly patients.

Hypothesis

RH₁: There is a significant association between level of knowledge regarding fall prevention with their prevention among the elderly patient selected demographic variables.

III. METHODOLOGY

Research Approach

A quantitative research approach was adopted for the present study.

Research Design

A descriptive research design was used to assess the knowledge regarding prevention of falls among elderly patients.

Research Setting

The study was conducted in the Medicine Ward of Narayan Medical College and Hospital (NMCH), Jamuhar, Rohtas, Bihar.

Sampling Technique

A purposive sampling technique was used to select the study participants.

Sample Size

The study consisted of 60 elderly patients admitted to the medicine ward.

Target Population

The target population comprised elderly patients admitted to the medicine ward of NMCH, Jamuhar.

Variables of the Study

Section A: Demographic Variables

The study included demographic variables such as age, gender/sex, marital status, religion, educational status, occupation/socioeconomic status, and health status. These variables were collected to determine their association with the level of knowledge regarding prevention of falls among elderly patients.

Section B: Structured Knowledge Questionnaire

A self-structured knowledge questionnaire consisting of 25 multiple-choice questions was used to assess knowledge regarding fall prevention among elderly patients. The questionnaire covered environmental

safety, safe mobility, use of assistive devices, hospital safety measures, footwear, bathroom safety, hydration, patient education, and other fall-prevention strategies.

Inclusion Criteria

Participants were included if they:

- Were aged 60 years and above.
- Were admitted to the medicine ward during the data collection period.
- Were able to communicate and respond to the questionnaire.
- We're willing to participate in the study.

Exclusion Criteria

Participants were excluded if they:

- Were critically ill or admitted to the ICU.
- Had severe cognitive impairment (e.g., dementia) or communication difficulties.
- We're unwilling to participate.
- Had hearing or speech impairment that made data collection infeasible.

SYSTEMATIC REPRESENTATION OF RESEARCH DESIGN

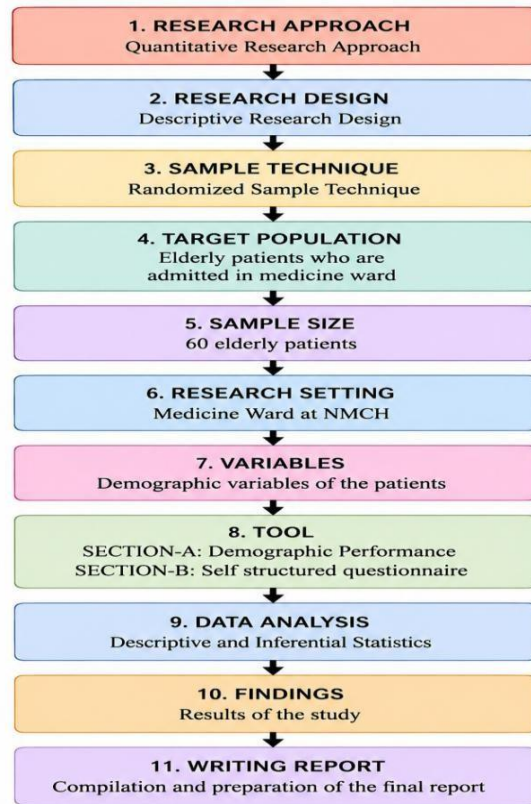


Fig 3.1 Systematic Representation of Research Design

IV. DATA COLLECTION PROCEDURE

Prior permission was obtained from the concerned institutional authority before data collection. Eligible participants were selected according to the inclusion criteria. The purpose of the study was explained, and written informed consent was obtained from each participant. The structured questionnaire was administered individually, and responses were recorded. The collected data were scored according to the predetermined scoring criteria.

Validity of the Tool

The content validity of the tool was established by experts in the fields of Medical-Surgical Nursing, Community Health Nursing, and Geriatric Nursing. Necessary modifications were made based on their suggestions to improve the relevance, clarity, and adequacy of the questionnaire.

Reliability of the Tool

The reliability of the questionnaire was established using the test-retest method. The obtained reliability coefficient was $r = 0.82$, indicating that the tool was reliable and internally consistent.

V. PLAN FOR DATA ANALYSIS

The collected data were coded, tabulated, and analyzed using descriptive and inferential statistics.

- Descriptive statistics (frequency and percentage) were used to describe the demographic characteristics of the participants and to assess the level of knowledge regarding fall prevention.
- Inferential statistics (Chi-square test) were used to determine the association between the level of knowledge regarding fall prevention and selected demographic variables.
- A $p\text{-value} \leq 0.05$ was considered statistically significant.
- The findings were presented using tables and figures according to the objectives of the study.

VI. DATA ANALYSIS

The collected data were coded, tabulated, and analyzed using descriptive and inferential statistics. Descriptive statistics, including frequency and percentage, were used to describe the demographic

characteristics of the participants and their level of knowledge regarding fall prevention. Inferential statistics (Chi-square test) were used to determine the association between the level of knowledge and selected demographic variables. The findings were presented in tables and figures according to the objectives of the study.

Frequency (f) and Percentage (%) were used to describe the demographic characteristics of the participants and the level of knowledge regarding fall prevention.

The Chi-square (χ^2) test was used to determine the association between the level of knowledge regarding fall prevention and selected demographic variables.

The level of statistical significance was set at $p \leq 0.05$. The analyzed data were presented in the form of tables, bar diagrams, and pie charts for easy interpretation.

Sl. No.	Demographical Data	Poor Knowledge (0-12 or less than 50%)		Average Knowledge (13-18 or 51-75%)		Good Knowledge (19-25 or 76-100%)		χ^2 Value	Df & p value	Inference
		No.	%	No.	%	No.	%			
1. GENDER										
1.	Male	06	10%	21	35%	12	20%	1.24	Df-2 p value- 0.45	No significant
2.	Female	04	6.7%	10	16.7%	07	11.6%			
3.	Other	00	00%	00	00%	00	00%			
2. PATIENTS AGE										
1.	60-65 Year	05	8.3%	13	21.7%	08	13.3%	0.96	Df-6 p value- 0.98	No significant
2.	66-70 Year	02	3.3%	08	11.7%	09	6.7%			
3.	71-75 Year	02	3.3%	16	13.3%	08	8.3%			
4.	Above 75 Year	01	1.7%	10	5%	05	3.3%			
3. PATIENTS EDUCATION										
1.	No formal education	04	6.7%	07	11.7%	03	5%	4.12	Df-8 p value- 0.84	No significant
2.	Primary education	03	5%	08	13.3%	05	8.3%			
3.	Secondary education	02	3.3%	10	16.7%	07	11.7%			
4.	Higher Secondary education	01	1.7%	04	6.7%	01	1.7%			
5.	Higher and above education	00	00%	02	3.3%	03	5%			
4. PATIENTS RELIGION										
1.	Hindu	07	11.7%	21	35%	13	21.7%	0.09	Df-2 p value- 0.95	No significant
2.	Muslim	03	5%	10	16.7%	06	10%			
5. PATIENT MARITAL STATUS										
1.	Married	07	11.7%	22	36.7%	12	20%	0.73	Df-2 p value- 0.69	No significant
2.	Widowed	03	5%	09	15%	07	11.7%			
3.	Unmarried	00	00%	00	00%	00	00%			
4.	Divorced	00	00%	00	00%	00	00%			

$P \leq 0.05$ is significant

Table 4.3: Chi Square analysis association between level of knowledge and selected demographic variables.

VII. RESULT

A total of 60 elderly patients participated in the study. Among them, 39 (65%) were male and 21 (35%) were female. Most participants (43.4%) belonged to the 60–65 years age group. Regarding education, 31.6% had secondary education, 26.6% had primary education, 23.3% had no formal education, 10% had higher secondary education, and 8.4% were graduates or above. The majority of participants (85%) were married, and 68.3% belonged to the Hindu religion.

Assessment of knowledge regarding fall prevention revealed that 10 (16.7%) participants had poor knowledge, 31 (51.7%) had average (moderate) knowledge, and 19 (31.6%) had good knowledge. Thus, the majority of elderly patients demonstrated an average level of knowledge regarding fall prevention.

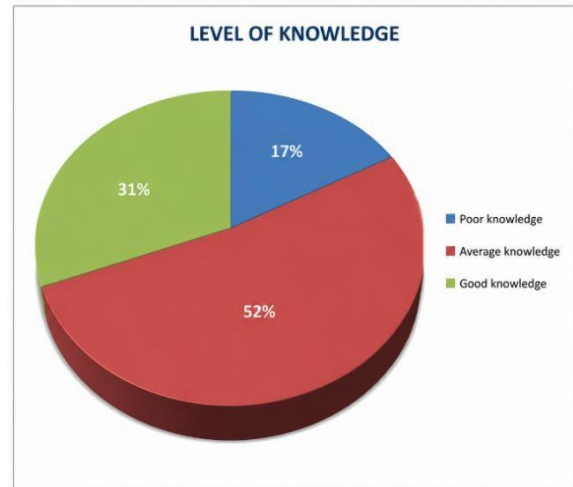
The Chi-square analysis showed statistically significant association between the level of knowledge and the selected demographic variables, including age, gender, education, religion, and marital status ($p > 0.05$). Therefore, the research hypothesis stating that there is a significant association between knowledge regarding fall prevention and selected demographic variables was accepted.

VIII. SUMMARY OF DATA ANALYSIS

The data were analyzed using descriptive and inferential statistics. Descriptive statistics, including frequency and percentage, were used to describe the demographic characteristics of the participants and assess their level of knowledge regarding fall prevention. Inferential statistics (Chi-square test) were used to determine the association between the level of knowledge and selected demographic variables.

The findings revealed that the majority of elderly patients had a moderate level of knowledge (51.7%) regarding fall prevention, followed by good knowledge (31.6%) and poor knowledge (16.7%). No statistically significant association was found between the level of knowledge and the selected demographic variables ($p > 0.05$).

Fig. 4.8: DISTRIBUTION OF LEVEL OF KNOWLEDGE



The pie diagram shows the distribution of level of knowledge among elderly patients regarding prevention of falls. Out of 60 participants, 10 (17%) had poor knowledge, 31 (52%) had average knowledge and 19 (31%) had good knowledge. The majority of the participants (52%) had average knowledge.

Fig 4.8 Distribution of level of Knowledge N = 60

IX. DISCUSSION

The present study was conducted to assess the knowledge regarding prevention of falls among elderly patients admitted to the Medicine Ward of Narayan Medical College and Hospital (NMCH), Jamuhar, Sasaram, Rohtas. A quantitative research approach with a descriptive research design was adopted. Sixty elderly patients were selected using purposive sampling, and data were collected using a self-structured knowledge questionnaire.

The findings revealed that 51.7% of the participants had average knowledge, 31.6% had good knowledge, and 16.7% had poor knowledge regarding fall prevention. These findings indicate that although most elderly patients possessed a moderate level of awareness, there is still a need to improve their knowledge through structured educational interventions.

The findings are consistent with the study conducted by Silva et al. (2023), which reported that the majority of hospitalized elderly patients had moderate knowledge regarding fall prevention, highlighting the need for patient education. Similar findings were reported by Ganesan et al. (2022), who found inadequate awareness among elderly individuals regarding fall-prevention strategies and emphasized

the importance of nurse-led educational programs. The findings also support the World Health Organization (2022) recommendations, which emphasize patient education, environmental safety, and awareness as essential components of fall prevention.

The Chi-square analysis revealed no statistically significant association between the level of knowledge and selected demographic variables such as age, gender, education, religion, and marital status ($p > 0.05$). Therefore, the research hypothesis was rejected. This suggests that knowledge regarding fall prevention was not significantly influenced by the selected demographic characteristics of the participants.

Overall, the study emphasizes the importance of continuous health education, patient counseling, and nursing interventions to improve knowledge regarding fall prevention among elderly patients and promote patient safety during hospitalization.

X. CONCLUSION

The present study concluded that the majority of elderly patients admitted to the Medicine Ward of NMCH, Jamuhar had a moderate level of knowledge (51.7%) regarding fall prevention, while 31.6% had good knowledge and 16.7% had poor knowledge. The findings indicate that although the participants possessed some awareness of fall-prevention measures, further improvement is needed through regular health education and patient-centered teaching. No statistically significant association was found between the level of knowledge and the selected demographic variables, including age, gender, education, religion, and marital status ($p > 0.05$). The study highlights the need for continuous nursing education, structured awareness programs, and effective fall-prevention strategies to enhance patient safety and reduce fall-related complications among hospitalized elderly patients.

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