

Fall Risk Prevention: A Serious Concern for Hospitalized Elderly

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Abstract: ***Introduction:** Older people have a propensity to have falls commonly, with 1 in 3 elders falling at least once a year also, the tendency of older adults to fall raise with age, more than doubling between 70 and 80 years of age especially during hospitalization. **Methods:** Cross-sectional descriptive study was carried out on 410 elderly people ages >_ 60 years in inpatients of AIIMS Rishikesh by using the convenient sampling. Fall risk was assessed by John Hopkins assessment tool. Data were then analyzed by SPSS software 23 descriptive statistics, and Chi-square. **Results:** The mean age for studied population was 65.45 ± 8.42 years, in that 73.65% were women, 92.68% were married, 56.09% stays with spouse, 44.39% of elderly were admitted in general medicine ward, 31.21% were hospitalized about 6 to 9 days. The hospitalized elderly was had Moderate risk for fall the mean score was 42.46 ± 5.76 (Possible range 7-13) and association found in between (p=0.045), gender (p=0.043), spouse status (p=0.001), ward admitted (p=0.001) and length of hospital stay (p=0.020) of hospitalized elderly with level of fall risk. **Conclusion:** Hospitalized elderly had moderate risk for fall during hospitalization and that closely associated with their age, gender, spouse status, disease condition, and length of hospital stay.*

Keywords: Fall risk, elderly, hospitalization,

1. Introduction

Falls incident are increases with age, especially the hospitalized older population. That may leads to injuries, can also intensify fear of falling, which leads to further fall, restricted daily activities, lesser autonomy, diminished social activity, depression and deterioration of quality of life. Hospitalized elderly patients have a high incidence of falls and injuries in due to various reasons. One of the most concerns of older population, particularly those who are hospitalized for long-term care is falls.

Most of the literature said that more than 50 percentages of the elderly patients in hospital are experiencing a fall or multiple falls. Falls deprives older individuals of their quality of life by reducing mobility and independence due to physical injury as well as psychological factors that preclude an individual from reaching their existing potential for the activities for daily living (ADL). Studies consistently revealed fall rates of 24% to 35% higher in the age group over 65 years. O'Loughlin et al found that 29% of elders after 65 years living in a nursing facility fell at least once and 11.5% fell two or more times. Strategies for assessment of fall risk and the prevention and treatment of falls are crucial as these will in turn to improve quality of life and reduce healthcare and costs morbidity.

The devastating effects of falls have on elderly patients and amplified burden on family members and the health care system, if the case is this screening and fall risk assessment are paramount priorities. Screening producing meaningful results may be easily performed in the ambulatory and hospital settings among elderly with simple interventions. In this regard few studies were conducted in India for example in the study conducted by Eileen B. Hitcho MS, Melissa J. Krauss et.al among inpatient 1,300-bed urban academic hospital over 13 weeks. Informant characteristics, fall circumstances and injury data were collected by the use of interview with subjects and nurses and review of adverse event reports collected by medical records. During the study

183 patients fell, average age of patients who fell was 63.4 years (range 17 to 96). Many were unassisted (79%) and take place in the patient's room (85%), mostly in evening/overnight (59%), and at point of ambulation (19%). majority of the falls (50%) were elimination related, which was common in elderly above 65 years old (83% vs. 48%; P < .001). Elimination-related falls increased the risk of fall-related injury (adjusted odds ratio, 2.4; 95% confidence interval 1.1 to 5.3). The medicine and neurology services had the highest fall rates (both were 6.12 falls per 1,000 patient-days), and the highest patient to nurse ratios 6.5 and 5.3, respectively. Hence considering role of falls during hospitalization among elderly the assessment of fall risk in patient department will aid in quality improvement of patient care and also help in preventive aspects.

2. Methods

A cross sectional descriptive study was conducted on hospitalized elders at All India Institute of Medical Sciences (AIIMS) and hospital Rishikesh from February-July 2018 on 410 elderly, in which the participants selected through convenience sampling. The participant were included who are Hospitalized and age above 60 years, and the elderly who have History of more than one fall within 6 months before admission, Patient is deemed high fall risk per protocol were excluded.

The selected participants were asked answer for demographic information includes age, gender, marital status, spouse status, ward admitted, length of hospital stay and assessed for fall risk by John Hopkins assessment tool. The total score of each individual (a score range 1-18) was calculated as the sum of score taken from 7 questions. Fall risk score between of 1-6 considered as low fall risk, scores between 7-13 represented moderate fall risk and score more than 14 reflected high risks (Table1). The tool has well-documented psychometrics, primary developers report an inter rater reliability correlation of $r = 0.96$, a sensitivity (true positive fall risk) of 78%, and a specificity (true negative fall risk) of

83%. Data were then analyzed by SPSS software 23 descriptive statistics, and Chi-square.

Ethical consideration:

The institution review board of All India Institute of Medical Sciences (AIIMS) Rishikesh, approved the study (39/IEC/IM/NF/2017) moreover the written consent was obtained from the participants after explaining the aim of the study. Also they were insured for the confidentiality and anonymity of their information, also they were informed that the participation in the study is voluntary.

3. Results

The mean age for studied population was 65.45 ± 8.42 years, in that 73.65% were women, among whom 92.68% were married, 56.09% stays with spouse, 44.39% of elderly were admitted in general medicine ward, 31.21% were hospitalized about 6 to 9 days. OTHER demographic information is presented in table: 1

Table 1: Demographic information of study participants

Variables		N	%
Age (in years)	60 -65	209	50.97
	65-70	87	21.21
	70-75	76	18.53
	75-80	25	6.09
	80-85	13	3.17
Gender	Male	108	26.34
	Female	302	73.65
Marital status	Married	380	92.68
	Unmarried	30	7.31
Spouse status	With spouse	230	56.09
	Passed away spouse	180	43.90
Ward	General medicine	182	44.39
	Cardiology	39	9.51
	Orthopedic	68	16.5
	Neurosurgery	47	11.46
	General surgery	74	18.04
Length of hospital stay (In days)	3-5	109	26.58
	6-9	128	31.21
	9-12	62	15.12
	12 -15	67	16.34
	More than 15	44	10.73

Among 410 hospitalized elderly mean score 19.51± 5.76 (Possible range 1-6) of low risk, mean score 42.46 ±5.76 (Possible range 7-13) was had Moderate risk and high risk mean score was 20.33± 4.76, and presented in table: 2

Table 2: Mean score of fall risk

Level of fall risk	Mean	S.D	Possible range
Low risk	19.51	9.32	1-6
Moderate risk	42.46	5.76	7-13
High risk	20.33	4.76	14-18

There was also statistically significance association was found in (p=0.045), gender (p=0.043), spouse status (p=0.001), ward admitted (p=0.001) and length of hospital stay (p=0.020) of hospitalized elderly with level of fall risk, but based on other variables no significant association found. (Table: 3)

Table 3: Association of fall risk and demographic information

Variables		Fall risk Mean ±SD	P
Age (in years)	60 -65	42.75± 5.36	0.045
	65-70	42.43± 6.67	
	70-75	39.54± 3.21	
	75-80	41.68± 6.09	
	80-85	38.32± 5.40	
Gender	Male	44.5± 5.08	0.043
	Female	41.13± 5.81	
Marital status	Married	44.8± 55.46	0.196
	Unmarried	41.34± 5.57	
Spouse status	With spouse	43.13± 5.77	0.001
	Passed away spouse	39.90± 4.99	
Ward	General medicine	41.14± 5.18	0.001
	Cardiology	42.49± 6.06	
	Orthopedic	44.58± 4.25	
	Neurosurgery	45.81± 5.09	
	General surgery	43.25± 9.19	
Length of hospital stay (In days)	3-5	43.33± 2.64	0.020
	6-9	42.42± 5.86	
	9-12	42.33± 6.44	
	12 -15	41.55± 6.08	
	More than 15	50.09± 3.47	

4. Discussion

Due to the growing number of hospitalized elderly and prominent prevalence of fall during hospitalization in this age group, this study was conducted to assess the fall risk of elderly admitted in AIIMS Rishikesh. The mean score of fall risk was 42.46 ±5.76 that indicates moderate risk for fall in studied population. Studies conducted by Eileen B. Hitcho MS, Melissa J. Krauss et.al, Hui-Chi Huang showed that the fall risk among hospitalized elderly was undesirable and have higher risk with contributing clinical factors (i.e.) can be due to age, medical condition, co-morbidity, medication, which is consistent with present findings.

Association score of hospitalized elderly who were, females, staying without spouse status, medical condition and length of hospital stay was statistically highly significance than others which confirms results achieved by Li-YunTsai , Shiow-LuanTsay, Ruey-KuenHsieh, et al and shows association was found who were staying with spouse and receiving psychological support and engorgement from partner, who are staying more than 5 days in hospital were having higher risk for falling which may reflect outcome of medicine and general weakness.

5. Conclusions

Falls will leads to injuries, which have an unconstructive and severe impact on elderly hospitalized patients to their health and quality of life. Most of the hospital elderly have risk of fall, this fall risk have significant association with their clinical factors, Therefore paying more attention to this age group in planning and preventing fall. Nurses need to instruct and follow fall prevention measures at an early stage of elderly patient hospitalization. This study should provide a reference for nurses in assessing fall risks and reducing resultant falls and injuries among elderly patients.

6. Study Limitation

This study was accomplished only in AIIMS Rishikesh for the period of 4 months, moreover it is limited to assessment of fall risk and associated factors not any other preventive aspects.

7. Conflict of interest

The authors declare that there is no conflict of interest

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