ORIGINAL ARTICLE

FREQUENCY OF FALLS AMONG GERIATRIC POPULATION IN THE TERTIARY CARE HOSPITALS IN PESHAWAR

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ABSTRACT

Objective: To evaluate the frequency of fall among elderly population in Peshawar.

Material & Methods: A cross-sectional study design with a purposive sampling technique was used. The study sample was 280 subjects. The data collection took place in Peshawar and was collected from tertiary care hospitals. A modified questionnaire was used to collect the data. Study duration was 6 months.

Results: The study recruited 280 participants results showed 216 (77.1%) reported to experience fall. The most common age group that had fall was between 55-65 years that is 157 out of 280. There was significant association of fall with fracture (P-value0.02). The association of the use of pills with fall was also significant (P-value=0.032).

Conclusion: The study concludes that fall is a major problem faced by elderly population. Results in serious injuries and complications and fall are associated with several intrinsic and extrinsic risk factors.

Key Words: Fall, Fracture, Geriatric, Hematoma, Population

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INTRODUCTION

Fall is an event due to which a person come to rest unintentionally on ground, floor or a lower level.[1] The high percentage of older population around the globe critically faces serious problems like fall and gait instability.[2] The leading causes of injuries are such of nature which happened due to fall in various places.[3] especially the factor of fall have serious implication on health professionals in their development of surveillance system and prevention strategies.[4] The major cause of fall in elderly are consider morbidity and disability.[5] One of the most important reasons is vision impairment in older adults.

The primary reason and causes of fall in elderly people can be of multiple factors which may result from combinations of extrinsic and intrinsic factors, activity, lower limb disability, palm mental reflex, postural hypotension, use of medication, cognitive and visual impairments, impairments of balance and mobility, foot problems and environmental threats.[6] The extrinsic factors consist of several environmental factors that are bathroom slippery floor and lack of accessories for support in bathroom for example grab bars and toilet seats. The other risk factor may involve raise bed, insufficient lighting, slipping floor and lockless bed wheels. The most common intrinsic factors include age, visual problems, nutritional deficiencies, use of drugs like benzodiazepines which causes the syncope, dizziness, predisposition, fractures and night fall, foot problems and general pains which causes difficulty in walking.[7]. The significant trend is obvious in 21st century and it is evident that the ratio of fall mostly persists in aged population. While the statistics shows approximately 12.3% of global population in fall factor is either 55 years or more.[8] Each year in united states 1800 cases of falls consist of fatal cases and mostly elder are seen.[9] In hospitals the ratio of fall is mostly prevalent and seen in

emergency rooms and 70% of elder people fall either on entrance, stairs, counter, and in wards to treat their injuries.[10] approximately 40 to 60% of falls leads to injuries, whereas 30 to 50% are those cases which are minor injuries, around 5 to 6% of fall comprises of injuries without any fracture, while at the other hand 5% of fall cases are reported being injured and fractured.[11]

Stewart Williams et al conducted a cross sectional survey among adults aged 50 years and greater to evaluate relation between fall and fall related injuries and disabilities. The result showed the prevalence of fall associated injuries ranging 6.6% in Fedia, 1.0% in South Africa and 4.0% across pooled countries. The fall associated injuries rated 73.3% in Russia federation to 44.4% in Ghana. It was more common in women participants living in rural areas.[12]

Mariam Mehmood et al carried out a cross sectional study at Faisalabad, Pakistan. 77 subjects met the inclusion criteria and participated in the study. Time up and go test was used to assess the general risk of fall among patients. The result shows the overall prevalence rate of 44.16% of fall in community dwelling older adults ageing 65. Ageing was the only risk factor determinant of fall [13] .

Santosh.K.Verma conducted a cross sectional survey at United States, among community dwelling adults. The results shows 12% of community dwelling US adults reported fall in last year. 9.9 million fall related injuries occurred each year. 32.3% falls happened to older adults 35.3% middle aged adults and 32.3% younger adults had falls. The most common victims were women. The cost of yearly fall belonging injuries in fatality, hospitalization and treatment in emergency department was 111 billion united state dollars.[14]

The study's objectives are to ascertain the prevalence of falls among the elderly and to identify the most frequent variables contributing to falls among this population, as there aren't many population-based research on Pakistan's older population. This study will aid in developing fall victimisation techniques, lessening the incidence of falls among the elderly, and designing programmes to lower risk factors, modify the environment, and promote fall-related preventative measures.

MATERIAL AND METHODS

A cross sectional study design was considered to conduct the study from December 2022 to May 2023. Lady Reading Hospital, Khyber Teaching Hospital and Hayatabad Medical Complex were the study centers. A total of 280 participants of both genders having age of 55 and above were included in the study having all types of fall, while the participants having cancerous conditions, cardiac insufficiency and mental retardation were excluded from the study. Purposive sampling technique was used for the recruitment of participants. Participants with all type of fall.

Before data was collected, the entire questionnaire was created with the assistance of subject matter experts and approved by the members of the ethical committee. After obtaining informed consent, the participants were given the questionnaires. The data collector spoke forward and asked inquiries. The lead researcher was there to help if someone needed help understanding. At the beginning of the survey, participants were given a brief introduction and their handwritten informed permission was obtained. The self-administered tool was explained to the research investigators, who were then instructed to fill it out. The body weight in kilo grams divided by the square of the height in meters was the formula used to determine the relationship between a person's BMI and fall risk in the elderly. Underweight was defined as below 18 BMI, Normal was defined as being between the ranges of 18 and 25 BMI, overweight as being between the ranges of 26 and 29 BMI while obese as being equal to or greater than 30 BMI.

The data was analyzed in SPSS-23. The information was examined to gauge recurrence of result (fall among geriatrics) in terms of frequency, percentages and appropriate graphical presentation.

RESULTS

The study recruited 280 participants from tertiary care hospitals of Peshawar including males and females the age of the participant ranged from 55 onward. The group 1 included participants from 55-65, the group 2 included participants from 66-75, group 3 included from 76-85, group 4 included 86-95 and group 5 included 95-105

The study included both genders. They responded to questionnaires equally. The males were more in number than females as 141 were males and 139 were females

As the study recruited 280 participants the number of participants who had fall history was 216 with the frequency of 77%

Different type of injuries occur due to fall among which the most common was fracture with the frequency of 131 out of 280 the second most common was sprain and strain with the frequency of 48. The number of times people had fall history in previous one year was as such that 47 participants had suffered fall 1 time in previous one year, 33 suffered 2 times, 10 had fallen for 3 times and 126 had fallen for numerous times in last one year. **(Table 1)**

Of the total participants, 205 (73.2%) were not using glasses and only 75 (26.8%) were using glasses. Geriatric population generally have hearing problems, the frequency of people who suffered from hearing problems was 163 (58.2%). The participants who had fall history mainly suffered from fractures that is among 216 cases of fall 132 participants had fractures. This means there was significant association of fall with fracture (p-value 0.02). **(Table 2)** Use of different type of medications is always associated with fall history as sometime people take medicines like antidepressants that can contribute to fall. The association of use of pills with fall was also significant. **(Table 3)**

Table 1: Clinical characteristics of the participants

Variable	Yes n (%)	No n (%)	Total
History of fall	216(77.1%)	64(22.9%)	280(100%)
Type of injury			
Fracture	132(47.1%)	16(5.71%)	148(52.8)
Hematoma	14(5%)	16(5.71%)	30((10.7)
Sprain/strain	48(17.1%)	16(5.71%)	64(22.8%)
Others	22(7.9%)	16(5.71%)	38(13.6%)
Number of falls in one year			
1	47(16.8%)	16(5.71%)	63(22.5%)
2	33(11.8%)	16(5.71%)	49(17.5%)
3	10(3.6%)	16(5.71%)	26(9.31%)
Numerous	126(45)	16(5.71%)	142(50.71)

Table 2: Association of fall with type of injury

		Type of Injury				Total	P-value
		Fracture	Hematoma	Sprain/strain	Other		
History of fall	**Yes**	132(61.11%)	14(6.48%)	48(22.22%)	22(10.2%)	216	0.02

Table 3: Association of fall with number of pills

		Number of Pills				Total	P-value
		2	3	4	More		
History of fall	**Yes**	66(30.5%)	38(17.6%)	24(11.1%)	88(40.7%)	216	0.032

DISCUSSION

Falls are generally considered as unexpected accidents but statistics have shown that fall incidence differ significantly from the person distribution. This could indicate that fall occur as a result of some casual process but do not occur by chance.

The results of this study showed the frequency of fall to be 77%, that were approximate to the results of Joshi et al who reported the prevalence of fall to be 51.5% of fall among elder in northern area of India.[15] A review article on fall among Indian older adults showed the prevalence of fall to range from 14% to 53% which was quite similar to the results of current study.[16] Whereas Mariam mehmood et al carried out a study at Pakistan and the results of their study showed the prevalence of fall to be 44%.Zunaira hashmi et al said the prevalence to be 45%.[17]

The results of the current study showed a high association of age with fall 56.1% subjects were b/w the range of 55-65 years old. Similarly Pu-Lin yu et al also showed that age over 60-70 years was a prominent risk factor of fall.[18] A study by Fernando vinholes siqveria identified older age to be a prominent risk factor.[19] Another study also revealed that old age was a very common risk factor of fall. Shirin Wadhwaniya et alalso explained that at old age chances of fall increases.[20]

The result of this study revealed the majority of the victims were males. William.P.Berg et al. also showed similar results that fall was common among men[21] Another study also showed the virtually high percentage of male gender as a victim of fall.[11]

The current study showed that fracture was the most occurring injury as a result of fall. Similarly Zunaira Hashmi et al reported that most common consequence of the fall was fracture.[17] Varas-Fabra et al also explained fracture to be 44.7%.[22] The second most common occurring condition as a result of fall was sprain and strain. Whereas other studies also showed the advancing prevalence of lower limb injuries.[20] Which was in line to our study.

The current study showed that a greater number of participants uses glasses and has vision problems. Similar to this Assantachi et al showed that impaired vision and use of spectacles were associated with fall.[23] Other studies showed that impaired visual acuity and depth perception were associated, with an increased risk of falling [4, 24]

The current study showed that 58.2% of the participants were facing hearing problems and as a consequence fall occurred. This was in line to the study done by Bamani Gopinath which showed that hearing disability was a risk factor for fall.[25] Another study also favored the fact that deafness was a leading risk factor of fall.[23]

Puroshottam et al suggested that people who used antidepressants for longer period of term were also at increased risk of fall as similar to the current study in which many people were dependent on antidepressants.[26] William Berg et al showed in his study that hazardous obstacles present in the homes were also a risk factor for fall as similar to this study in which use of rugs and throws caused fall and fall related injuries in older people.[27]

CONCLUSION

The percentage of fall in this study was 77% which means that many people in the old age had tendency of fall. In this study there was a noteworthy relation of fall with fracture. In this study there were more females than males. The most common risk factor that contributed to fall injury was dizziness.

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