

Prevalence and identification of risk factors of fall in elderly population

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Background -

The Geriatric populations are having common problems related to their health in which common is fall. A fall is when a sudden, unintended loss of balance leaves the individual in contact with the floor or another surface such as a step or chair. This happens because of Fear of fall in among these geriatric peoples.

Objectives – To find out the prevalence and identification of risk factors of fall in elderly population.

Method – This was an observational study in which total 40 participants were selected, according to inclusion and exclusion criteria by purposive sampling and data was collected.

Result - Out of 40 participants the mean age was 69 years and the fear of fall in these participants were moderate according to MFES (Modified Fall Efficacy Scale) and there were more falls seen in females as compared to males. **Conclusion** – With the help of this research we concluded that there were a high prevalence of fear of falling among elderly population.

Keywords –

Prevalence, Fall, Modified Fall Efficacy Scale

Introduction -

By 2050, the worldwide population of older adults may grow to almost 2 billion, with 80% living in developing countries. This is alarming as over half of the world's older adults live in Asia. In India, a 'senior citizen' or 'older adult' is defined as a person aged 60 years and older. This is the fastest growing population in India, increasing from 6.7% in 1991 to 10% in 2021. Between 2001 and 2051, the number of old-old (age 70 years and older) is projected to increase 5-fold, and that of the oldest-old (age 80 years and older) is expected to increase 4-fold; these increases are faster than for any other age-groups.^[1]

Elderly people have common geriatric problems like impaired mobility, falls, impaired cognition, urinary incontinence, etc.^[2] Out of this; falls are common events in the lives of older people and can result in a range of

adverse outcomes, from minor bruises to fractures, disability, dependence and death. A “fall” is when a sudden, unintended loss of balance leaves the individual in contact with the floor or another surface such as a step or chair.^[3] In a community based study it was found that over 50 percent of falls among elderly persons result in at least some minor injury. Up to 2 percent of falls were found to result in the fracture of hip; other fractures (in the arm and pelvis) could occur in up to 5 percent of falls.

Serious injuries (head and internal injuries, laceration) could occur in up to 10 percent of falls.^[4] There are many factors lead to or cause the fall in the elderly, these factor that cause or lead to falls are classified into two i.e. intrinsic factor and extrinsic factors (Fig. no. 1). Falls are a complex interaction between intrinsic and extrinsic risk factors.^[5] Over 400 risk factors for falling have been reported.

There is uncertainty surrounding some of these risk factors, and one explanation is that risk of falls and injurious falls varies with functional status. Frail older people are at high risk of falling and of injuring themselves, but at the other end of the spectrum, healthy people who engage in large quantities of diverse and challenging physical activities, also have a disproportionately high risk of falling.

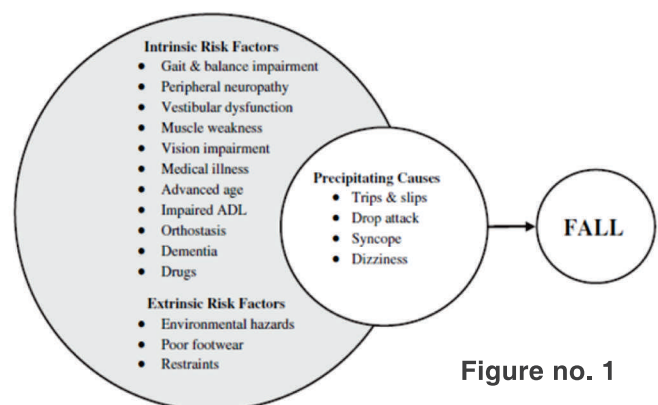


Figure no. 1

Interestingly fear of falling also contributes to the falls Elderly with fear of falling often change their gait, decrease their activity, or attempt to use assistive devices to prevent falling. The decrease in activity and walking is perhaps the worst consequences of a fear of falling leading to de-conditioning and overall decrease in strength.^[6,7] Developing a fear of falling is more prevalent with increasing age and fall history ,but it is not only limited to individuals with a history of falls.^[8]

Modified fall efficacy scale (MFES) is used for to

measure the fear of falling in elderly population. This questionnaire measures the level of concern about falling during social and physical activities indoors and outdoors in each item scored on a 10 visual analogous scale (0 – not confident / not sure, 5 – fairly confident / fairly sure, 10 – complete confident / complete sure).^[9,10]

The purpose this is to find out the Prevalence and identification of risk factors of fall in elderly population.

Material And Methodology –

It was an observational study which was conducted at Matoshree Geriatric Home Care, Vilad Ghat, Ahmednagar. Permission to carry out Research was obtained from Institutional Ethical committee. Proper instruction and explanation about study was given to community elderly individuals participants. All participants were community elderly individuals with Age group between 65 yrs to 75yrs and Mini Mental State Examination score > 24 and both genders were included, while the participant who was not able to follow commands, any severe medical conditions like neurological condition, cardiac condition etc., any recent fracture & recent surgery were excluded from our study. Total 40 participants were included for the study; the material used was pen, paper and MFES (Modified Fall Efficacy Scale).

After given an introduction about study to participants, with the help of interview therapist has asked questionnaire according to assessment proforma and MFES (Modified Fall Efficacy Scale) and data has been collected.

Result -

Total 40 participants had given information about their fall and related other history. the age distribution was shown in (Table and Graph no. 1) which shows that (Mean age 69 years) According to their history, participants had medical conditions like DM (22.35%), HTN (21.33%), Asthma etc. while total 8 participants didn't have any medical history (Table and Graph no. 2). Four participants were not taking any medication, while 12 participants were taking two medication daily (Table and Graph no. 3). According to fall history there were 21 participants had 1 fall in previous year while 13 participants had more than 2 falls in previous year (Table and Graph no. 4). Females 52.50% were having more falls as compared to males, in which total 32 falls were recorded in females as compared to males (Table and Graph no. 5).we had measured the Fear of falls in these participants with the help of Modified Fall Efficacy Scale Score (MFES), the mean score for

MFES was 5.85 (Score 5 - 6) it indicates moderate fear of fall among older participants (Graph no. 6). Total 33 participants were having Fear of fall, which is 82.5 %.

Table No. 1

Age Distribution	
65	4
66	6
67	4
68	4
69	3
70	6
71	2
72	4
73	2
74	2
75	3

Graph No. 1

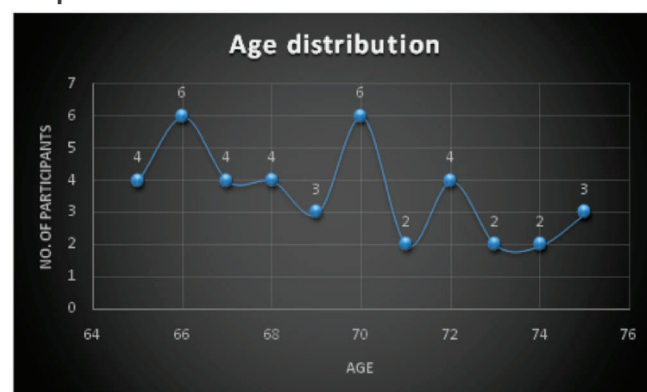
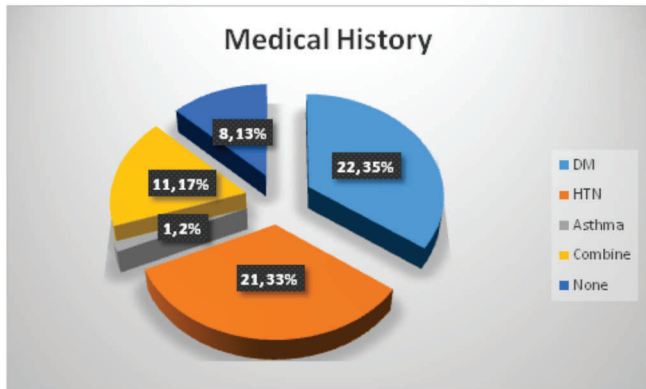


Table No. 2

Medical History	
DM	22
HTN	21
Asthma	1
Combine	11
None	8

Graph No. 2



Graph No. 4



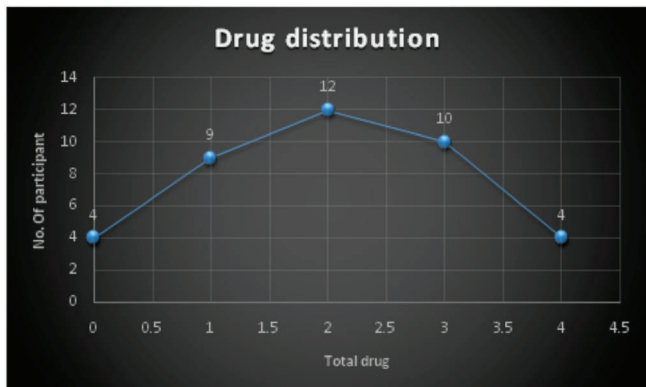
Table No. 3

No. of Drug	No. of Participants
0	4
1	9
2	12
3	10
4	4

Table No. 5

Fall Distribution	
Female	Male
32	21

Graph No. 3



Graph No. 5

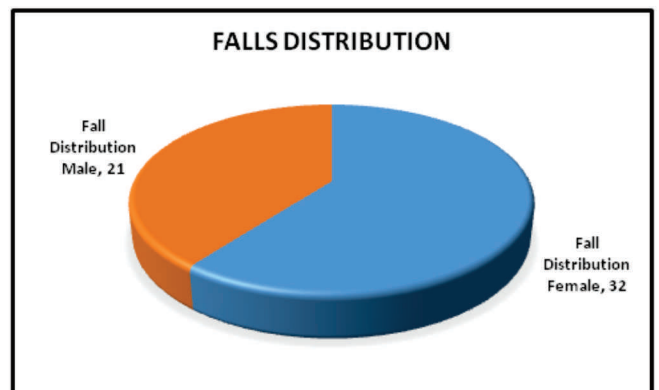
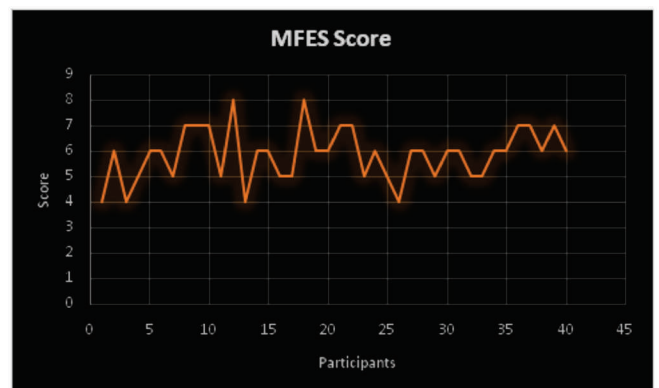


Table No. 4

No. of fall	No. of Participants
0	6
1	21
2	8
3	4
4	1

Graph No. 6



Discussion - Falls are the accidents with the highest mortality rates, particularly in the age group of 85 or over. In 2006, with approximately 76.6 million (above 7.7% of total population) India alone accounted for the one-seventh of world elderly. India, the world second most highly populated country, has experienced a dramatic demographic transition in the past 50 years, entailing almost a tripling of the population over the age of 60 years^[11]

The result of this study had shown that, there is a prevalence of fear of fall in among older population. The score indicates moderate fear of fall in older population (Mean score is 5.85). According to Kumar et al, the older people age above 60 years are having a fear of fall and which will affect their quality of life also. According to Stevens and Mack et al, the proportion of fall-related injuries among older adults in Ecuador were similar to that reported among persons aged 65 years or older in the USA. Moreover, the increased prevalence of falls and fall-related injuries with advancing age and among women is consistent with other published studies. Possible explanations for the higher incidence of fall-related injuries among women have been related to levels of physical activity, muscle weakness and loss of lower body strength, bone mass, circumstances surrounding the fall, and willingness to seek medical attention.^[12,13]

The finding also demonstrated that the ability to maintain balance during functional activities could be present irrespective of fall history in elderly people. People with fear of falling might avoid falls, despite having impaired balance or being at risk for falls, by limiting their participation in daily functional activities. So Kumar and Tiwari et al concluded that the percentage of fear of falling (N = 23, 44.2%) was greater than the history of falls (N=18, 34.6%). Among these 66.67% were females and 33.33% were males. This suggests that the elderly develop the fear of falling with or without the history of falls.^[11]

Conclusion -

These intrinsic and extrinsic factors are most common etiology of falls. Recurrent falls are an important cause of morbidity and mortality in elderly. Falls associated with injuries are common in elderly population and which hampers the physical activity of elderly peoples.

So this study concluded that in elderly population there is high prevalence of fall according to MFES i.e. moderate fear of fall, which restrict their day to day activities.

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