

Original Research Article

Assessment of risk of fall in elderly people in the urban field practice area of Community Medicine Department, Andhra Medical College, Visakhapatnam, Andhra Pradesh

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ABSTRACT

Background: More than 1/3rd of older adults fall each year and 10-20% of falls cause serious injuries. Vast majority of these falls (>99.9%) are unintentional. This research is focused to identify prevalence of the risk of fall among elderly and associated factors were assessed in the present study. We are going to assess the risk of falls and associated factors among elderly.

Methods: A cross-sectional study conducted in urban field practice area of Community Medicine Department, Andhra Medical College among people of age >60 years during November 2017. A sample size of 100 is obtained by taking prevalence of falls among elderly on the last 6 months as 36.8% and absolute precision is 10%. A structured interview schedule has been adopted for the study which was developed by Peninsula Health Falls Prevention Services.

Results: Mean age is 69±7 years. 65% are females. 20% have medium to high risk of fall. 17% have severely impaired cognitive status. 19% have history of fall one or more times in last 3–12 months.

Conclusions: 20% risk of fall may not be neglected as fall in elderly can lead to disability. It is recommended to health care providers to assess the risk of fall among elderly patients seeking their services using fall risk assessment tool (FRAT) and advice accordingly.

Keywords: Elderly people, FRAT, Risk of fall, Fall risk assessment, Psychological score

INTRODUCTION

Falls are the major health problems among older adults of age >65 years.¹ Primary sequelae of falls include fall related injuries, such as fractures and head injuries, and post-fall anxiety. These lead to loss of independence through disability and fear of falling.² More than a third of older adults fall each year and 10–20% of falls cause serious injuries.¹ Serious falls do not appear to be amenable to low-intensity environment or behavioural efforts.³ These falls may result serious injuries in 24%

and fractures in 6% of elderly population.⁴ Although there are extensive literatures on interventions to prevent falls provides many insights, there is no clear message about how to prevent falls in older adults.. Multi-factorial risk assessment of falls followed by targeting of interventions to an individual's risk factors is an attractive strategy as it could reduce several components of fall risk and would be expected to lead to greater reductions in falls than dealing with risk factors in isolation.⁵ Since many falls that lead to injuries occurring in the community, this study specifically examines some

primary prevention strategies like usage Fall risk assessment tool (FRAT) that have to be implemented to prevent or reduce falls and injuries in the elderly in particular.⁶ This research is focussed on risk of fall in persons aged ≥ 60 years and feasibility of using FRAT tool in assessing fall risk in the community. The findings from this study will be useful at the policy level to complement knowledge and awareness about this important public health issue.

Objectives

- To assess the risk of fall in the elderly people (≥ 60 yrs).
- To find the determinants of “RISK of FALL”.

METHODS

A community based, cross-sectional analytical study conducted among 100 elderly people of age >60 years in the urban field practice area Department of Community Medicine Andhra Medical College, Visakhapatnam during November 2017. Based on prevalence as 36.8%, absolute error=10, nonresponse rate as 10% the sample size was calculated as 99, based on the formula $4PQ/d^2$, which was rounded off to 100.⁷ A structured interview schedule has been adopted for the study-fall risk assessment tool (FRAT) which was developed by Peninsula Health Falls Prevention Services, Australia.⁶ The interview schedule was designed based on study objectives. A house to house survey was done and data was collected.

FRAT consists of three parts.

Part 1 is fall risk status and it has four components:

1. Recent falls
2. Medications
3. Psychological
4. Cognitive Status

Maximum total fall risk score is 20. Different weight age is given to each component.

Inference of fall risk status score: low risk: 5-11, medium risk: 12-15, high risk: 16-20

Part 2 contains risk factor checklist and Part 3 is action plan for interventions.

Inclusion criteria

Participants with age ≥ 60 years were the study population.

Exclusion criteria

Those who are completely bedridden.

Permissions and approval

Informed verbal consent was taken from the Study Participants. Permission was taken from Head of the Department, Community Medicine, Andhra Medical College and Medical Officer, Urban Health Centre, Allipuram, Visakhapatnam.

Data Entry was done using MS Excel and data analysis was done using SPSS Software 20 demo version.

RESULTS

The mean age of the individuals was 69.4 years ± 7.4 years.

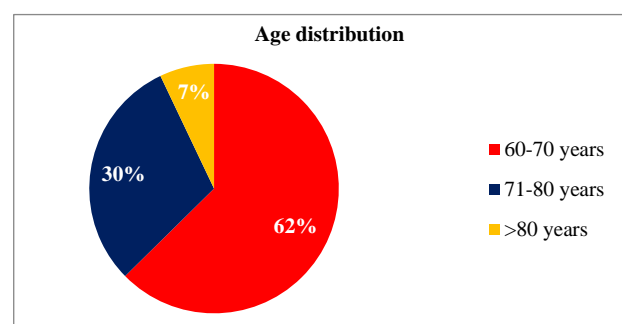


Figure 1: Age distribution of study population.

Majority of study population are in range of 60-70 years.

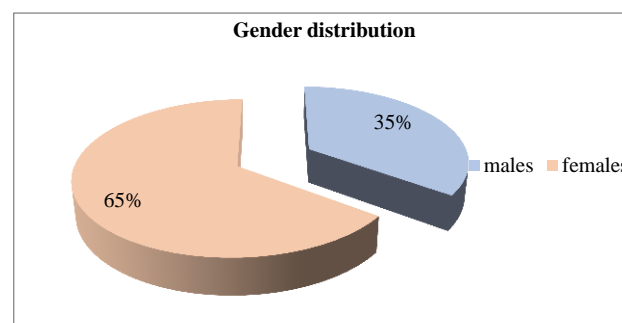


Figure 2: Gender distribution of study population.

Females are more in number among study population.

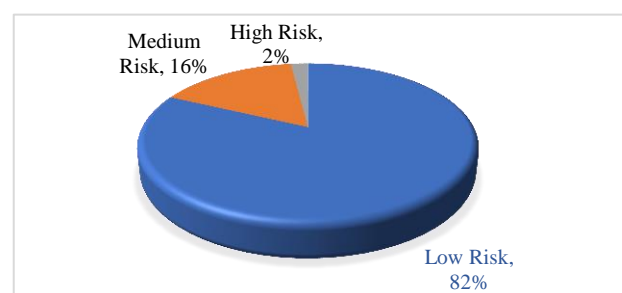


Figure 3: Distribution of study population according to the risk of fall.

16% study population have moderate risk and 2% have high risk of fall.

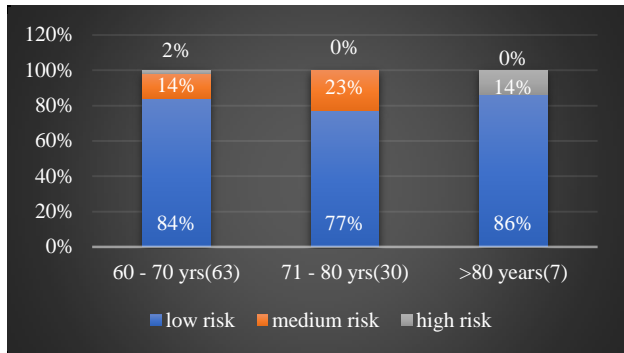


Figure 4: Distribution of fall risk among different age groups.

Among 60-70 years, 14% have medium risk of fall where as 2% have high risk.

23% have medium risk of fall among 71-80 years.

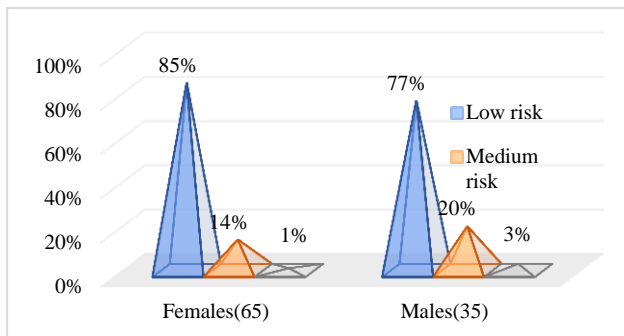


Figure 5: Distribution of fall risk according to gender.

There is no significant association of gender with risk of fall with chi-square value 0.891, degree of freedom (df)=2 and 'p' value-0.640.

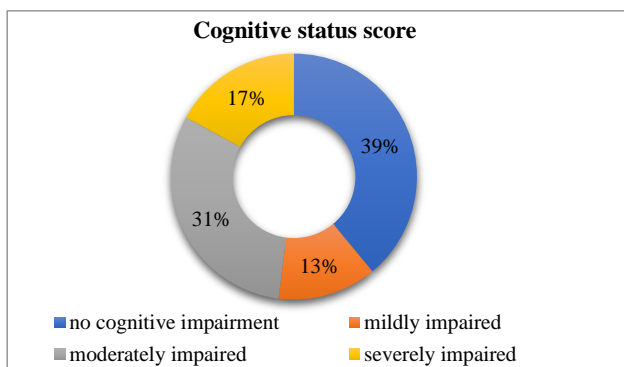


Figure 6: Distribution of study population according to the cognitive status score.

31% of study population have moderately impaired cognitive status, while 17% have severely impaired cognitive status.

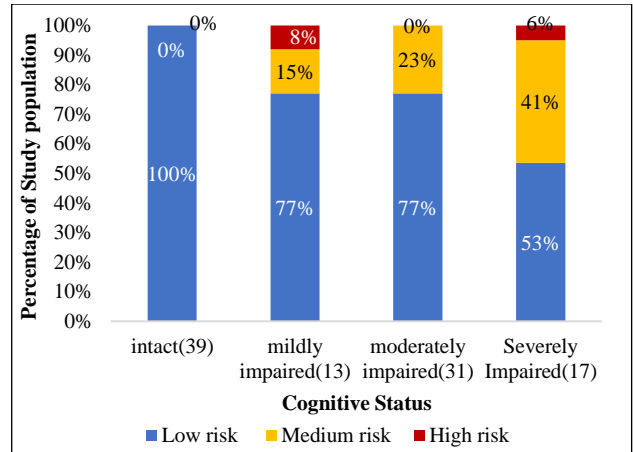


Figure 7: Distribution of fall risk among individuals with different cognitive status score.

There is significant association between cognitive status and risk of fall with chi-square value as 22.016, df=6 and 'p' value as 0.001.

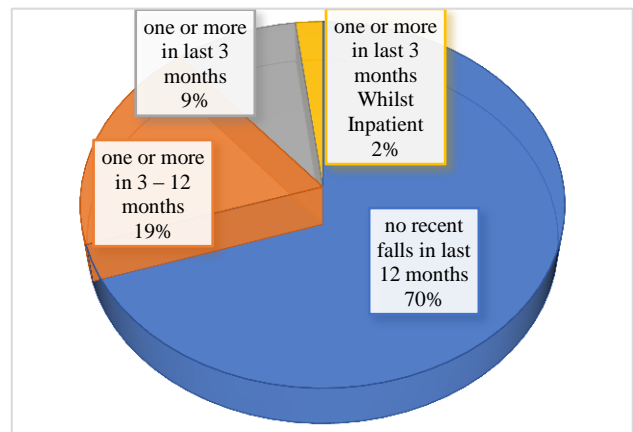


Figure 8: Distribution of individuals according to the recent fall status.

70% don't have history of recent fall in last one year, 19% have history of fall once or more than once in past 3 to 12 months.

Table 1: Risk factors vs. fall risk status.

Risk factors	Fall risk status			Total
	Low (%)	Medium (%)	High (%)	
Nutrition	20 (64.5)	9 (29)	2 (6.4)	31
Visual	12 (57)	7 (33.3)	2 (9.5)	21
Mobility	5 (33.3)	8 (53.3)	2 (13.3)	15
Transfers	2 (25)	4 (50)	2 (25)	8
Continenace	1 (14.3)	5 (71.4)	1 (14.3)	7
Unsafe footwear	0 (0)	4 (66.6)	2(33.3)	6
Behaviour	2 (50)	1 (25)	1 (25)	4
Environment	1 (25)	2 (50)	1 (25)	4

Among the study population the fall risk status is mostly effected by poor nutrition (31), visual impairment (21) and poor mobility (15).

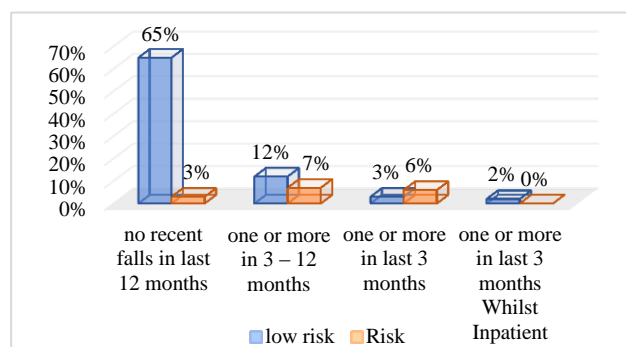


Figure 9: Distribution of fall risk among individuals with recent falls.

There is significant association of history of recent fall and risk of fall with chi-square value as 31.346, df as 8 and 'p' value as 0.001.

DISCUSSION

The study showed that among 100 elderly population, 18% of the population are having risk of fall. In a study of falls among elderly persons in rural area of Hararyana, by Sirohi et al, the prevalence of fall risk among elderly was 36.8% out of the study population of 496.⁷ It was 57.7% in another study by Alshmmari et al.⁸ Risk of fall among the study population with impaired cognition was found to be 11.4% in Sirohi et al study, which was found to be 8% in the present study.⁷

The high risk of fall was higher among women (9%) in the present study. Similar finding was also found in a study done by Alshammare et al (64.6%).⁸

The risk of fall was more among the age group of 60-69 years in the present study. Similar result was also found in a study done by Alshammare et al.⁸

The history of fall among elderly in the last 3months to 12months was 7% in the present study which was 45.7% in the study "prevalence and correlates of fear of falling among elderly population in urban area of Karnataka, India by Mane et al.⁹

CONCLUSION

According to the present study, there is no significant association between age of the individuals and fall risk status among study population. Females have greater (10%) risk of fall when compared to Males (8%) and this difference is not statistically significant. The risk of fall was higher among those who had history of fall in the previous 3-6 months. Poor nutrition, impaired vision and reduced mobility were few important factors found

responsible for risk of fall among elderly in the present study.

Recommendations

A modified FRAT can be used in primary health care setup to assess fall risk among elderly and preventive measures can be advised, thus preventing morbidity among elderly.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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