

Assessment of Functional Research Test In Geriatrics Age Group 60-69

Authors: Dr. Bhagyashri Sonawadekar (PT)¹ Dr. Megha Joshi – Parashar (PT)²,

*1. Dr. Bhagyashri Sonawadekar (PT) Assistant Professor,
Department of Physiotherapy Tilak Maharashtra Vidyapeeth Pune,
Email: bhagyashreedeore16@gmail.com (Corresponding author)*

*2. Dr. Megha Joshi - Parashar (PT) Assistant Professor,
Department of Physiotherapy Tilak Maharashtra Vidyapeeth Pune,
Email: dr.megha2007@gmail.com*

ABSTRACT

Background: Aging is associated with increased morbidity and mortality, as there are drastic differences in physical, psychological and social components. Any changes in these components lead to instability and incompetence to maintain upright posture and ultimately lead to falls and improper gait. Due to these abrupt falls, the elderly face many problems and complications. Balance confidences are an important indicator of functional status and independence in older adults. There are various assessment tools with which balance can be assessed in this study functional reach test is used for the same. Functional reach test can be used to identify the likelihood that individual will fall and thereby helping the individual overcome his balance problems by rehabilitating him and preventing the risk of repeated falls. Hence, need for study id to use of functional reach test which helps to assess the balance in the geriatric individuals and determines whether the individual is at a risk for falling. Total 30 participates were included in the study, out of which 15 male and 15 female were assessed by using functional reach test. Mean, standard deviation and percentage were used for analysis of descriptive data of patients. 33.33% were not at a risk of fall and 66.66% were at risk of fall. Amongst males, 73.33% were at risk of fall and 26.66% were at no risk of fall, while amongst 15 female participants, 60% were at risk of fall and 40% were at no risk of fall. Therefore, it can be concluded that majority of geriatric individuals were at a risk of fall in the future, amongst which males were at a higher risk of fall than females.

Keywords: Geriatric, Functional Reach Test, Balance, Risk of fall

BACKGROUND

India is presently stratified second in terms of population within the world and aged population remains presently the second largest population within the world. With the accrued range of geriatric population, a stronger interest within the issue of balance management and gait management has emerged (1).

Aging is related to accrue morbidity and mortality, as conjointly there square measure forceful variations in physical, psychological and social parts. A decrease in any of those parts ends up in instability and incompetence to keep up upright posture and ultimately ends up in falls and improper gait. Thanks to these abrupt falls, the older face several issues and complications. regarding third of community-dwellers over the age of sixty five, encounter falls and half those can repeat these events.(2) third of the injuries and deaths square measure as a results of falls(1)One-third to half of the population over age sixty five reports some difficulties with balance or walking.

The performance of all activities of daily living needs smart balance management whereas at rest or once moving from one position to another (2). Maintenance of balance needs the coordination of sensory, neural and contractile organ system (2). Several of those system endure deterioration as individual's age (3, 4). This has the potential to have an effect on balance, prohibit safe quality, increase the probability of a fall and adversely have an effect on quality of life (3, 5).

Balance and falls square measure a {significant} health concern for older adults and their impact may be a significant public pathological state. Balance is outlined because the act of maintaining associate degree upright posture in standing or locomotion⁶.

Balance is controlled by numerous systems that depend upon proprioception operate, vision, and interception to keep up posture, navigate in one's surroundings, coordinate motion of body components, modulate fine control, and initiate the vestibulo-oculomotor reflexes. Vestibular system, visual coordination, joint interception square measure the vital parts of balance. Balance confidences square measure a crucial indicator of useful standing and independence in older adults. Balance confidence is agreeable to alter and able to distinguish between elders at numerous levels of useful mobility (6)

There square measure numerous assessment tools with that balance may be assessed like regular up and go check, useful reach check, two-dimensional reach check, Berg balance scale etc. during this study useful reach check is employed for constant.(7) The useful Reach check was initial developed by Pamela dancer and colleagues in 1990. It's a fast and straightforward, single-task dynamic check that defines useful reach as "the peak distance one will reach forward on the far side length, whereas maintaining a set base of support within the standing position" (Duncan et al., 1990). It a dynamic

instead of a static check and measures an individual's "margin of stability" also as ability to keep up balance throughout a useful task. The check has been shown by dancer to be prophetic of falls in older adults (8)

Falls square measure one in every of the key health care considerations for older adults and their impact may be an important public pathological state. Annually, regarding third of community-dwellers over age sixty five fall, and half those can have a repeat fall (9), (10, 11). Falls square measure liable for common fraction of all unintentional injury deaths in older adults (12, 13). Concern of falling affects confidence in activity daily activities, inflicting self-limitation and a less active manner (14). This ends up in muscle atrophy and loss of strength, particularly within the lower extremities, that exacerbates the danger for falls (15).

Useful reach check was developed as a clinically possible live of the margin of stability in balance assessment. The forward reach was chosen because the check task as a result of it's a typical useful movement. Useful reach check may be wont to establish the probability that individual can fall and thereby serving to the individual overcome his balance issues by rehabilitating him and preventing the danger of recurrent falls. Thence use of useful reach check helps to assess the balance within the geriatric people and determines whether or not the individual is at a risk for Falling. Hence awareness regarding balance impairments ought to be unfold which is able to stop the danger of falling thereby making the necessity of the study to alleviate risk of falling within the future. Therefore the aim of the study is to assess the balance in geriatric individuals using Functional reach test.

MATERIALS AND METHODOLOGY

Study design: Prospective study

Sampling Technique: Convenient sampling

Sample size: 30

Target study sample: Male and females of age group 60-69

Inclusion Criteria:

- Age group 60-69 years
- Both males and females participants
- Willing to participate

Exclusion Criteria

- Individuals with any physical disability.
- Wheelchair-bound/Bed ridden/immobile.
- Having cognitive impairments

Tools And Materials:-

- Pen
- Paper
- Measuring tape
- Consent form

Outcome Measure

Functional reach test:

Using a yardstick mounted on the wall at shoulder height, raise the topic to position body about to, however not touching the wall with arm extended and hand fisted. Note of the beginning position by decisive what range the MCP joints line up with on the rule. Have the topic reach as so much forward as attainable in a very plane parallel with the mensuration devise. Instruct subject to “Reach as so much forward as you'll go while not taking a step.” they're unengaged to use varied reaching methods. Note of the top position of the MCP joints against the ruler, and record the distinction between the beginnings and finish position numbers. If the feet move, that trial should be discarded and perennial. Guard the topic because the task is performed to stop a fall. Subjects area unit given 2 follow trials, then their performance on a further 3 trials is recorded and averaged.

The average scores are as follows:-

AGE GROUP 60-69 YEARS	FUNCTIONAL REACH TEST Score
MALES	14.98 inches
FEMALES	13.81 inches

Methodology:

All the participants were explained the purpose and procedure of the study and written informed consent form were signed by them to voluntarily participate in the study. All the participants were selected according to inclusion and exclusion criteria. 30 participants were assessed for their balance by using the Functional Reach Test and were accordingly asked to perform specific task on balance.

Data Analysis:

The statistical analysis was done using SPSS v17. Mean, standard deviation and percentage were used for analysis of descriptive data of patients. Thus percentage values were calculated for the risk of fall.

RESULTS

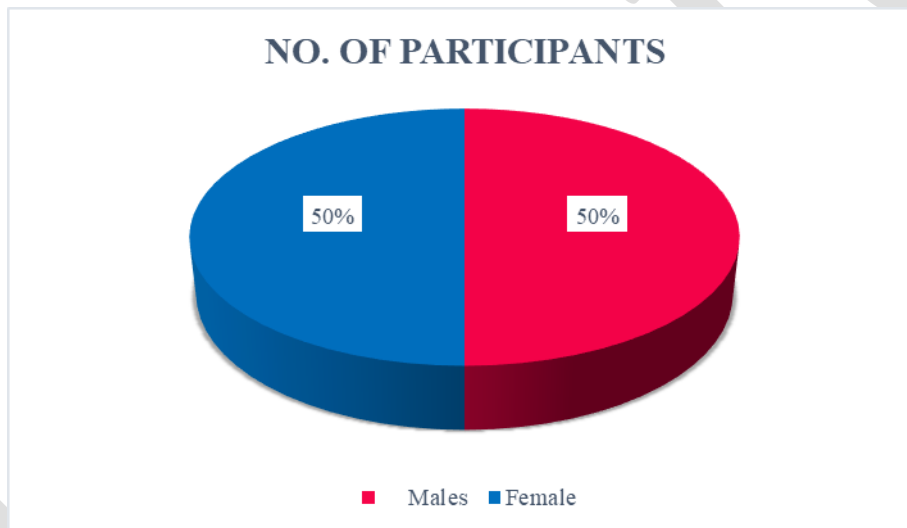
TABLE NO. :-1

Shows the number of participants involved in the study.

GENDER	NO. OF PARTICIPANTS
Males	15
Females	15
Total	30

DIAGRAM NO. :-1

Shows the number of participants involved in the study.



RESULT:-The above pie diagram shows that out of 30 participants, 15 were males and 15 were females.

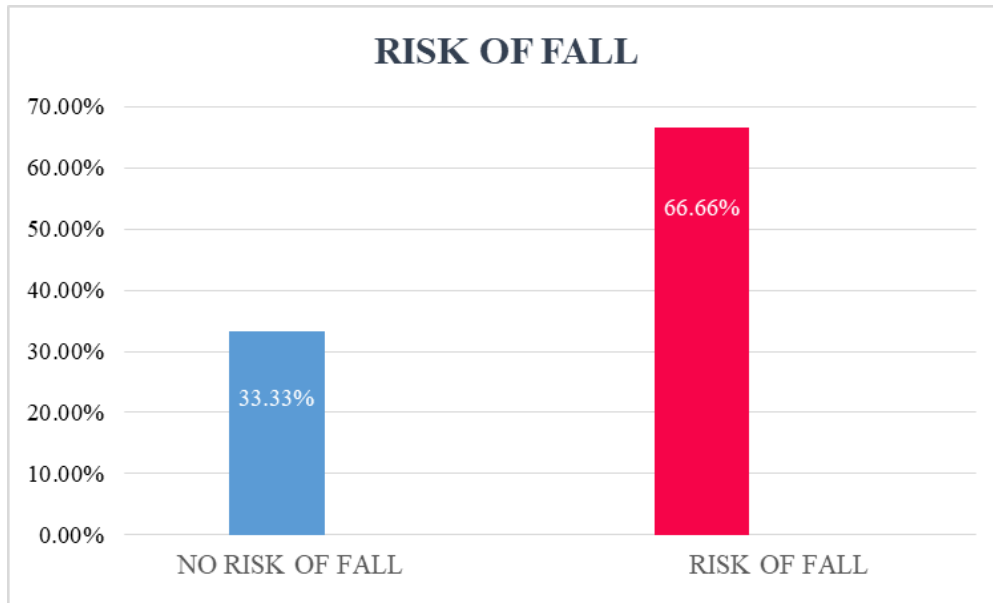
TABLE NO. :-2

Shows the percentage (%) of geriatric individuals having risk of falls.

RISK OF FALLS	NO. OF PARTICIPANTS
No risk of fall	10
Risk of fall	20

DIAGRAM NO. :-2

Shows the percentage (%) of geriatric individuals having risk of falls.



RESULT:-The above graph shows that out of 30 participants, 33.33% were not at a risk of fall and 66.66% were at risk of fall. Therefore, it found that majority of geriatric individuals were at a risk of fall in the future.

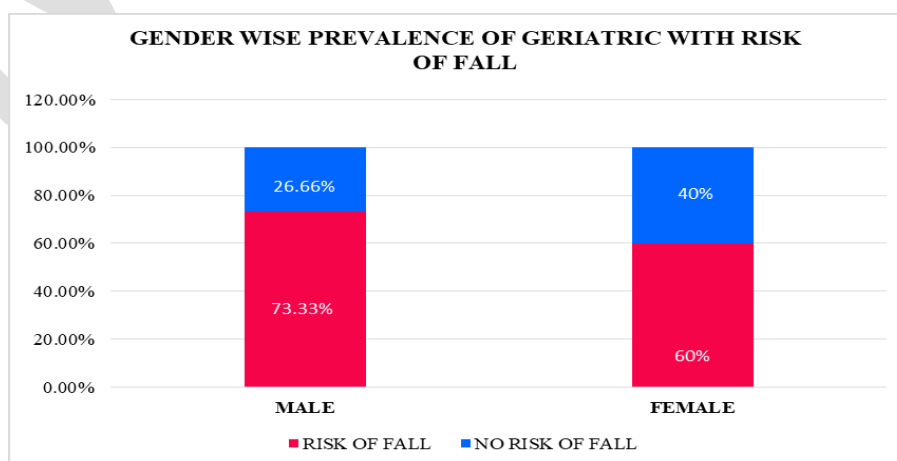
TABLE NO. :-3

Shows the gender wise distribution of prevalence of geriatric individuals with risk of fall.

GENDER	RISK OF FALLS	%	NO RISK OF FALLS	%
Males	11	73.33%	4	26.66%
Females	9	60%	6	40%

DIAGRAM NO. :-3

Shows the gender wise distribution of prevalence of geriatric individuals with risk of fall.



RESULT:-The above graph shows that out of 15 males, 73.33% were at risk of fall and 26.66% were at no risk of fall. While in 15 female participants, 60% were at risk of fall and 40% were at no risk of fall. Therefore it concluded that males were at a higher risk of fall than females.

DISCUSSION

This study was done to search out the balance management referring community-dwelling older people for an in depth physiotherapy analysis supported established clinical assessment measures, with useful reach tests measurement balance demonstrating the foremost promising results. Risk of falling is very important to assess as a result of it's a possible confound in measurement bodily property performance. Deterioration in balance could result from activity restriction mediate by the concern of falling a serious drawback, once predicting fall risk, is that the complex mechanisms of falls. The influence of environmental factors and therefore the issue in daily tasks performed got to be thought of furthermore because the individual physiological factors. To be ready to cope well in daily-life things the balance demands within the atmosphere and within the tasks performed should be matched by the balance capability of the elder.

The study delineate that among thirty participants, 33.33% were at no risk of fall and sixty six.66% were in danger of fall. Therefore, it found that majority of geriatric people were at a risk of fall within the future. Within the male feminine discrimination, 73.33% male were in danger of fall and twenty six.66% were at no risk of fall hour feminine were in danger of fall and 40% were at no risk of fall. Thus it over that males were at a better risk of fall than females.

Very few people with a poor bodily property management can be fine conscious of their balance lacking standing. They will in all probability strive to not challenge themselves on the far side their limits and so, in spite of their low physical capability, they could not be in high risk of falling. To avoid falling its necessary to possess the physiological capability to barter the threatening balance demands of a given task and context. Studies have shown that there's a robust link between muscle mass (and lack of it) in older adults and therefore the incidence of falls and balance issues. So because of ageing there's reduced muscle mass that successively ends up in disturbances in balance.

CONCLUSION

Therefore, functional reach test in geriatric individual showed that 33.33% had good balance while 66.66% had poor balance control due to which maximum geriatric population is at risk of fall in future among them males are major suspects.

Limitation of study

- Small sample size was taken.
- No special statistical test was used.
- Human error could be possible.

ABBREVIATIONS

FRT- Functional reach test

ACKNOWLEDGEMENTS

We genuinely thank all the research participants.

REFERENCES

1. UffeLaessoe, Hans C Hoeck, Ole Simonsen, Thomas Sinkjaer and Michael Voigt. Fall risk in an active elderly population – can it be assessed *Journal of Negative Results in Bio-Medicine* 2007 doi:10.1186/1477-5751-6-2 available
1. Huxham F, Goldie PA, Patla, AE. Theoretical consideration in balance assessment. *Australian Journal of Physiotherapy*. 2001;47:89-100.
2. Berg K. Balance and its measure in elderly: a review *Physiotherapy Canada*. 1989b;41(5):240-5.
3. Alexander NB. Postural Control in Older Adults. *Journal of the Geriatrics Society*. 1994;42(1): 93-108.
4. Patla A Frank JS, Winter DA. Balance control in the elderly: implication for clinical assessment and rehabilitation *Canadian Journal of Public Health*. 1992;83 Suppl2: s29-s33.
5. Cheryl Hawk, John K Hyland, Ronald Rupert, Makasha Colonvega and Stephanie Hall . Assessment of balance and risk for falls in a sample of community-dwelling adults aged 65 and older. 27 January 2006 doi:10.1186/1746-1340-14-3.
6. LAURENCE Z. RUBENSTEIN Falls in older people: epidemiology, risk factors and strategies for prevention *Age and Ageing* 2006; 35-S2: ii37–ii41 doi:10.1093/ageing/afl084.
7. Duncan et al *J Gerontol* 47:M93-8, 1990 & Isles et al *J Am Ger Soc* 52:1367-72, 2004
8. Tinetti ME, Speechley M, Ginter SF. Risk factors for falls among elderly persons living in the community. *N Engl J Med*. 1988;319:1701–1707.
9. Blake AJ, Morgan K, Bendall MJ, Dallosso H, Ebrahim SB, Arie TH, Fentem PH, Bassey EJ.

Falls by elderly people at home: prevalence and associated factors. Age Ageing.

1988;17:365–372. [PubMed]

10. Downton JH, Andrews K. Prevalence, characteristics and factors associated with falls among the elderly living at home. *Aging (Milano)* 1991;3:219–228. [PubMed]
11. Baker SP, Harvey AH. Fall injuries in the elderly. *Clin Geriatr Med.* 1985;1:501–512. [PubMed]
12. Moreland J, Richardson J, Chan DH, O'Neill J, Bellissimo A, Grum RM, Shanks L. Evidence-based guidelines for the secondary prevention of falls in older adults. *Gerontology.* 2003;49:93–116. doi: 10.1159/000067948. [PubMed] [Cross Ref]
13. Maki BE, Holliday PJ, Topper AK. Fear of falling and postural performance in the elderly. *J Gerontol.* 1991;46:M123–31. [PubMed]
14. Wolfson L, Judge J, Whipple R, King M. Strength is a major factor in balance, gait, and the occurrence of falls. *J Gerontol A Biol Sci Med Sci.* 1995;50 Spec No:64–67. [PubMed]