



# The Prevalence Of Fall Using Time Up And Go Test In Community Dwelling Elderly Adults In Jalna District.

Neha Nilesh Lavhade <sup>1</sup>- Assistant Professor at Ojas college of Physiotherapy , Jalna

Monali Jadhav <sup>2</sup>- Assistant Professor at Ojas college of Physiotherapy, Jalna

## Abstract:

Introduction: Falls are a common complication as people grow older. As many as one-third of community-residing people over the age of 65 fall each year<sup>1</sup>. That number grows to 60% once a person begins living in a nursing home or assisted living facility. Falling can cause pain, fractures, soft tissue injuries, and functional limitations. It can also cause feelings of helplessness, depression, and loss of confidence in those who have fallen.

Aim: To see the Prevalence of Fall Using Time Up and Go Test in older adults.

Study design: Cross sectional study.

Study setting: Senior Citizen Club, Old Age Home

Study population: Patient Aged 60 and more

Both genders.

Sample size: 150

Outcome Measures: Time Up and Go Test.

Procedure : Consent was taken from participants. The participants were selected on basis of inclusion and exclusion criteria. Outcome measures were taken .Three trials were performed and the mean time was calculated. The data is analysed and recorded.

Result: The analysis was done using GraphPad InStat 3.

For analysing the correlation between the time up and go test score and Age Pearson correlation test was applied.

Conclusion: There is increase number of risk of fall in community dwelling elderly adults jalna district and further management has to be done to reduce the fall risk.

## Introduction:

Globally, the population is ageing and the World Health Organisation (WHO) predicts that, by 2050, the population aged 60 years or more will be double and those aged 80 years or more will number 400 million persons. This extension of the lifespan is looked upon as a triumph of medical advances, stemming from access to better treatments as well as a focus on preventive therapies<sup>4</sup>

Aging causes various structural and functional changes in body which can lead to balance disorders and increases the risk of falls. Structural and functional changes in the foot has been seen which includes deformities , increased soft tissue stiffness , decreased range of motion, and decreased strength, increased risk of falls , reduced joint mobility, reduced gait speed, and less efficient and stable walking, ultimately worsening the quality of life of older individuals<sup>3</sup>

The World Health Organization [WHO] (2017) defines a fall as “an unexpected event where the participant comes to rest on the ground, floor, or lower level”. Falls are a common complication as people grow older. As many as one-third of community-residing people over the age of 65 fall each year<sup>1</sup>. That number grows to 60% once a person begins living in a nursing home or assisted living facility. Falling can cause pain, fractures, soft tissue injuries, and functional limitations. It can also cause feelings of helplessness, depression, and loss of confidence in those who have fallen<sup>2</sup>.

The Timed-Up and Go test is the most used test worldwide. This test measures the dynamic balance and functional mobility in older adults, as well as in the neurological population. The TUGT is a simple test that can be performed anywhere and consists of a patient getting up from a chair from the sitting to the bipedal position, walking three meters, turning, returning, and sitting on the chair again. The variable measured is the total time taken by the test, and then the score assigned in seconds is observed, which is correlated with the risk of falls <sup>6</sup>.

### **Need of Study:**

As stated by Grimmer M, Riener R in today's culture, the number of persons aged 60 and up is rapidly increasing. Every year, over one-third of the older individuals in a community die, and the rates of death are increasing with age. In the health of senior people, balance and gait speed are essential factors. Gait speed and balance issues are widespread in the elderly, and they are a leading cause of falls in this group. They are associated with increased morbidity and mortality, as well as reduced level of function. Falls have been linked to problems with balance and gait. The present study helps us to determine the prevalence of fall in community dwelling elderly adults in jalna district.

**Aim:.** To see the Prevalence of Fall Using Time Up and Go Test in older adults.

### **Objectives:**

The Prevalence of Fall Using Time Up and Go Test in older adults.

### **Methodology:-**

Ethical clearance: Ethical committee approval was obtained before the commencement of the study.

Study design: Cross sectional study.

Study setting: Senior Citizen Club, Old Age Home

Study population: Patient Aged 60 and more

Both genders.

Study duration: 3 months.

Sample size: 150

### Inclusion Criteria:

1. Community dwelling elderly individuals with more than 60 years of age.
2. Older adults who is resident of jalna district.
3. Elderly with mini mental score  $\geq 25$ .

### Exclusion Criteria:

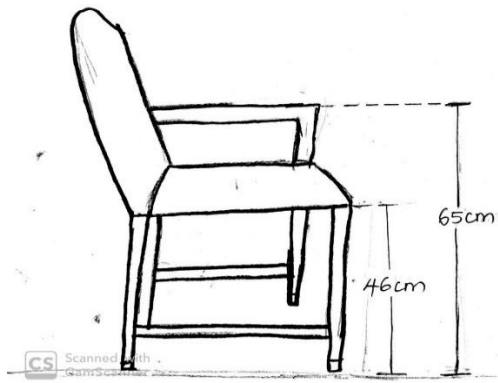
- Elderly individuals having the following;
  1. Cognitive impairment.
  2. Current history of dislocation of lower limb.
  3. Fractures of lower limb, within 6 months prior to inclusion.
  4. Neurological disorders.
  5. Malignancy.
  6. Bone diseases.
  7. Excessive pain
  8. Hypermobility of ankle joint.
  9. Recent injury to ankle joint.

### Outcome Measures:-

1. Time up and Go Test.

The subjects were asked to sit on a corner chair, and the time it took for the subjects to get up and touch the wall 3 meter in front them, return and sit on a chair again was measured. Three trials were performed and the mean time was calculated. Subjects scoring greater than 13.5 were considered as high risk fallers.

Reference: Shumway-Cook A, Brauer S, Woollacott M. Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test. Physical therapy. 2000 Sep 1;80(9):896-903.



## Procedure

**Recruitment of samples:** Samples were recruited according to inclusion and exclusion criteria.

## Material used:

Chair, Paper, Pen, Stop Watch.

## Evaluation:

- Instructions were given to the participants about study and its benefits and risk in their own language.
- Consent was taken from participants.
- The participants were selected on basis of inclusion and exclusion criteria.
- The subjects were asked to sit on a corner chair, and the time it took for the subjects to get up and touch the wall 3 meter in front them, return and sit on a chair again was measured.
- Three trials were performed and the mean time was calculated.
- Subjects scoring greater than 13.5 were considered as high risk fallers and were included in the study<sup>5</sup>
- The data is analysed and recorded.

## STATISTICAL ANALYSIS

The analysis was done using GraphPad InStat 3.

For analysing the correlation between the time up and go test score and Age Pearson correlation test was applied.

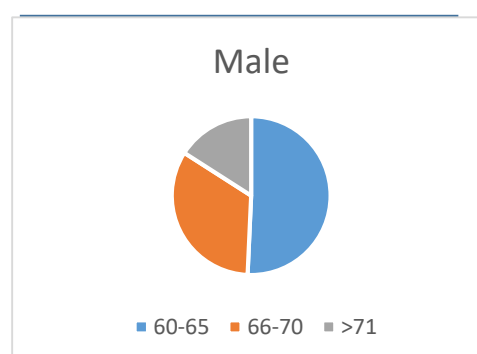
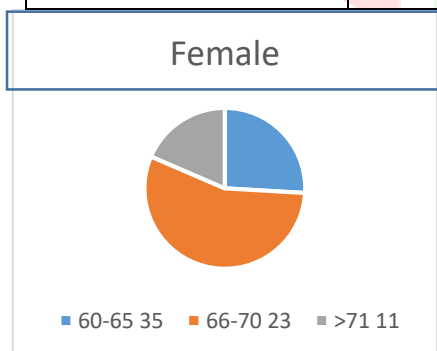
## Result Analysis

Table no. 1. Baseline Characteristics (mean±SD)

Age	69± 4.7
Height	150.81± 25.04
Weight	51.26 ± 5.02
BMI	26.4± 2.46

Table no. 2 Age wise distribution.:

Age groups	60-65	66-70	>71
	Mean	Mean	Mean
Male	35	23	11
Female	21	45	15

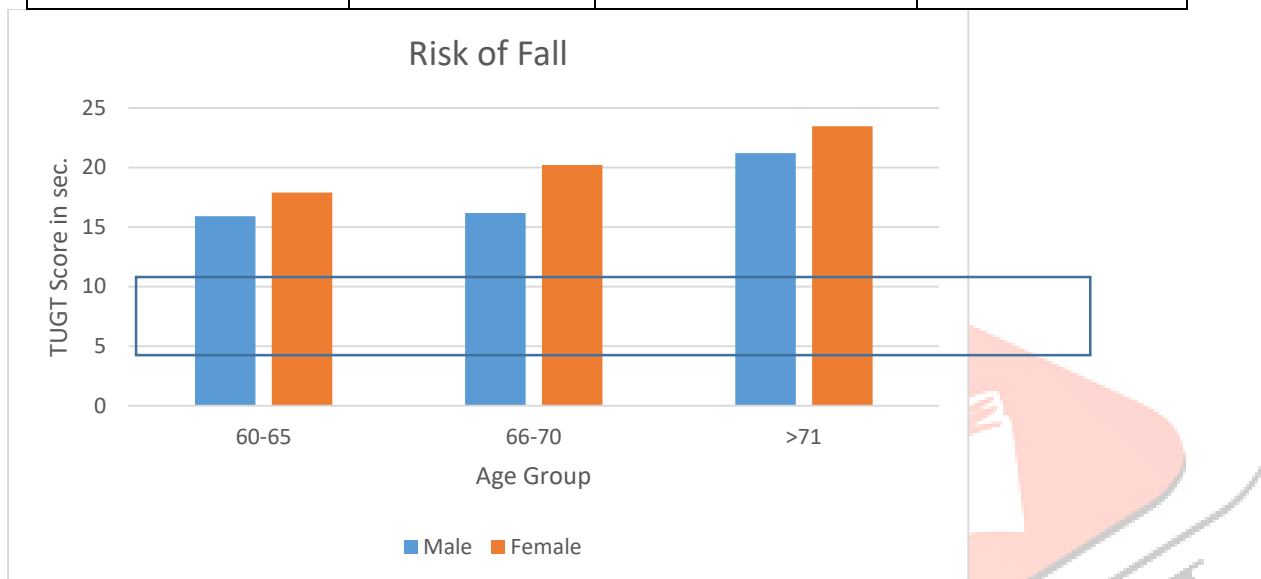


Graph 1: no. of males

Graph 2: no. of females

Table no. 3 : TUGT Score.:

Age groups	60-65	66-70	>71
	Mean Score	Mean Score	Mean Score
Male	15.9	16.17	21.1
Female	17.89	20.2	23.45



Graph 3 : TUGT Score in Different Age Group

## Discussion

The study was intended to see the Prevalence of Fall Using Time Up and Go Test in older adults. It has been found that there is increase number of risk of fall in jalna district.

According to a study by Pavlos Morfis et al. from 2021, ageing and changes in gait characteristics are related to falling in the elderly. In their study they observed alterations in the walking pattern of elderly, they indicate decreased plantar flexion peak ankle in late stance compared to young participants. This condition is likely to contribute to older person's shorter step length. Thus has a risk of fall. This is due to the age-related changes in gait that are brought on by diminished muscle strength and restricted range of motion in the lower limb joints as a result of physiological and neuromuscular changes <sup>8</sup>.

Joint physiology changes with age, including a decrease in cartilage water content, synovial fluid volume, and proteoglycans. Crosslinking occurs in the collagen fibres of cartilage, resulting in increased stiffness. These changes could explain why elderly adults have a restricted range of motion in their lower extremity joints<sup>3</sup>. A study by Chiara Mecagni, Janet et.al (2000) indicated a direct relationship between Dynamic balance and a low range of motion in joints. Reduced range of motion results from the tissues around the joints, particularly in the lower extremities, which affect the dynamics of this muscle in walking and increases the risk of falling.

## Conclusion

Thus it has been concluded that there is increase number of risk of fall in community dwelling elderly adults jalna district and further management has to be done to reduce the fall risk.

## Limitation

Risk Factors were not included in the study.

## Future Scope

Management for Reducing the fall risk can be included in future studies.

## References:

1. Karlsson MK, Vonschewelov T, Karlsson C, Coster M, Rosengen BE. Prevention off ails in the elderly: a review. Scand J Public Health. 2013;41(5):442-54.
2. Clemson L, Cumming RG, Kendig H, Swann M, Heard R, Taylor K. The effectiveness of a community-based program for reducing the incidence of falls in the elderly: a randomized trial. JAm Geriatr Soc. 2004;52(9):1487-94.
3. Da Silva LS, Fukuchi RK, Watanabe RN, Fukuchi CA, Duarte M. Effects of age and speed on the ankle-foot system's power during walking. Scientific reports. 2020 Sep 10;10(1):1-8.
4. Singh S, Bajorek B. Defining 'elderly' in clinical practice guidelines for pharmacotherapy. Pharmacy practice. 2014 Oct;12(4).



5. Shumway-Cook A, Brauer S, Woollacott M. Predicting the probability for falls in community-dwelling older adults using the Timed Up & Go Test. *Physical therapy*. 2000 Sep 1;80(9):896-903.
6. Ahmed M. Negm, Alexandra Papaioannou, in *Osteosarcopenia*, 2022.
7. David Barry BS, BAppSci (Hons), DC, ND, in *Textbook of Natural Medicine (Fifth Edition)*, 2020
8. Morfis P, Gkaraveli M. Effects of aging on biomechanical gait parameters in the healthy elderly and the risk of falling. *Anthropol. Sci.* 2007;115:67-72.
9. Mecagni C, Smith JP, Roberts KE, O'Sullivan SB. Balance and ankle range of motion in community-dwelling women aged 64 to 87 years: a correlational study. *Physical Therapy*. 2000 Oct 1;80(10):1004-11.

