



**ORIGINAL RESEARCH PAPER**

**Anaesthesiology**

**ASSESS THE EFFECT OF LOW INTENSITY EXERCISE ON RISK OF FALL AMONG ELDERS AT THIRUVALLUR GOVERNMENT DISTRICT HEADQUARTERS.**

**KEY WORDS:** Elderly people, low intensity exercise, Risk of fall.

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**ABSTRACT**

The ageing process is associated with changes in gait and balance and functional status. Analysing these motor functions may contribute towards identifying situations with the potential risk of falling. Such events are serious public health issues, because of their frequency and the physical, psychological and social consequences that they may cause risk of fall problems are common with advancing age. Disorders of balance and gait are particularly important in the elderly because they compromise independence and contribute to the risk of falls and injury. 60 (30 experimental group and 30 control group) patients (post-natal mothers) who met the inclusion criteria were selected by using non probability convenience sampling technique. After selecting the sample, the investigator explained the purpose of the study and informed consent was obtained. Demographic variables were collected, pre-test and post-test was done by using Tinetti Balance Assessment Tool (experimental and control group). For experimental group, low intensity exercise was demonstrated to do the exercise daily. Control group receives the routine hospital care. At the end of the four weeks post-test was done for experimental and control group. The data were tabulated and analysed by descriptive and inferential statistics. The result shows that in experimental group pre-test 24(80%) have high risk of fall, and 6(20%) have moderate risk of fall and in control group 22(73.33%) have high risk of fall and 8(26.67%) have moderate risk of fall. Post-test in experimental group 6(20%) have moderate risk of fall and 24(80%) have low risk of fall, were as in control group 20(66.67%) have high risk of fall, 10(33.33%) have moderate risk of fall. The calculated 't' value is significant at P< 0.005. The study indicates that low intensity exercise reduces the risk of fall among elders.

**INTRODUCTION:**

According to data from world population prospects, the 2017 revision, the number of older persons – those aged 60 years or over is expected to more than triple by 2100, rising from 962 million globally in 2017 to 2.16 billion in 2050 and 3.1 billion in 2100. Globally population aged 60 or over is growing faster than all younger age groups. The ageing process is associated with changes in gait and balance and functional status. Analysing these motor functions may contribute towards identifying situations with the potential risk of falling. Such events are serious public health issues, because of their frequency and the physical, psychological and social consequences that they may cause risk of fall problems are common with advancing age. Disorders of balance and gait are particularly important in the elderly because they compromise independence and contribute to the risk of falls and injury. The decline of muscles strength in elderly persons appears to be an important factor underlying poor balance as well as potential and actual falling. A fall is an unintentional event that results in the person coming to rest on the ground or another lower level. Falls are the leading cause of nonfatal injuries and the second leading cause of all unintentional injury deaths. Falls leads to a higher risk of decreased functional independence and an increased need for hospitalization and institutionalization, thereby burdening the health services. Elderly people demonstrate decreased postural control capacities and so they are more prone to get falls. According to the Journal of Gerontology: 5.1 deaths per 100,000 persons annually. Among elderly men and women falls account for 87% of all fractures. More than 1/3 of adults 65 and older fall each year. Falls are the second leading cause of injury deaths. Every hour there are 2 deaths and 251 emergency department visits for the falls related injuries among older adults. Only 50% of those with a fall injury can live independently – 40% of nursing home admissions related to fall. Exercise is a regular structured program of physical activity. Physical activity is an activity in daily life that may be categorized as occupational, sports, conditioning, household, or other. Exercise intensity is typically measured in metabolic equivalent task. MET is rate of expenditure at rest. Activities with METs between 3.0 and 6.0 are considered to have moderate intensity, whereas exercise intensities above 1.5 METs and below 3.0 METs are considered to be low. Low

intensity exercises for older adults include light walking, stretching, lifting, hand weights, sit-ups, and push-ups against the wall. The moderate intensity exercise includes running, tennis, and aerobics. The low intensity exercises lower in injury risk and generally more affordable to older adults as it does not receive the same attention as those of moderate intensity exercises.

**OBJECTIVES:**

- 1) To assess the risk of fall among elders before administration of low intensity exercise.
- 2) To determine the effect of low intensity exercise on risk of fall among elders compared with control group.
- 3) To associate between the posttest risk of fall with the selected demographical variables in experimental group

**METHODS AND MATERIALS:**

A descriptive and inferential study was chosen to assess the effectiveness of low intensity exercise on risk of fall among elders at Thiruvallur District Head Quarters. 60 samples were selected who comes under the inclusive criteria by using non-probability convenient sampling technique. Data was collected by using demographic variables which includes age, educational status, family type, haemoglobin level etc... and by Tinetti Balance Assessment Tool. The tools were translated to Tamil language. Informed consent was obtained and data was collected from the sample. The data were analysed by inferential statistics.

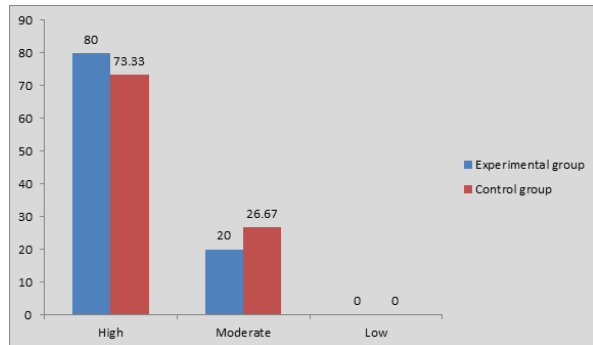
**RESULTS:**

**Table 1: Determine the effectiveness of low intensity exercise on reduction of risk of fall among elders in experimental group.**

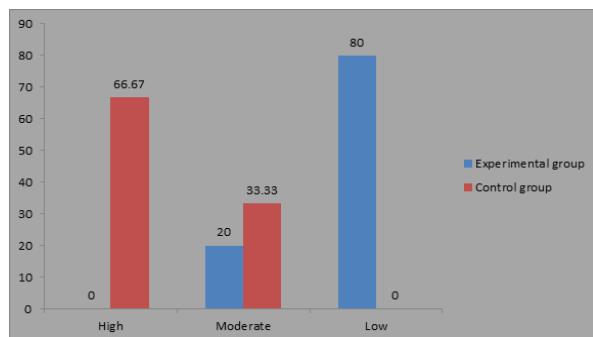
Experimental Group						Paired 't' test
Pre test		Post test		Effective score		
Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	t=17.38 P=0.05
12.97	3.54	24.27	1.40	11.3	2.14	

Note \*\*\* - P< 0.05 Level of Significant

The above table reveals that there was a reduction on risk of fall after low intensity exercise. It shows that low intensity exercise was effective in reducing the risk of fall among elders ( $P < 0.05$ ).



**Figure 1:** Distribution of risk of fall among elders in pre test for experimental and control group. The above figure reveals that in experimental group, 24(80%) have high risk of fall, and 6(20%) have moderate risk of fall, whereas in the control group 22(73.33%) have high risk of fall and 8(26.67%) have moderate risk of fall.



**Figure 2:** Distribution of risk of fall among elders in post test for experimental and control group. The above figure reveals that in experimental group, 6(20%) have moderate risk of fall, and 24(80%) have low risk of fall, whereas in the control group 20(66.67%) have high risk of fall and 10(33.33%) have moderate risk of fall.

**DISCUSSION:**

The aim of the study was to assess the effectiveness of low intensity exercise on risk of fall among elders in Thiruvallur Government District Headquarters.

1. The first objective was to assess the effectiveness of low intensity exercise on risk of fall among elders before administration of low intensity exercise.

The findings of the study reveals that out of 60 samples in experimental group, 24(80%) have high risk of fall, and 6(20%) have moderate risk of fall, whereas in the control group 22(73.33%) have high risk of fall and 8(26.67%) have moderate risk of fall in pre test. In post test out of 60 samples in experimental group, 6(20%) have moderate risk of fall, and 24(80%) have low risk of fall, whereas in the control group 20(66.67%) have high risk of fall and 10(33.33%) have moderate risk of fall.

2. The second objective was to determine the effectiveness of low intensity exercise on risk of fall.

The findings of the study reveals out of 60 samples in experimental group, 6(20%) have moderate risk of fall, and 24(80%) have low risk of fall, whereas in the control group 20(66.67%) have high risk of fall and 10(33.33%) have moderate risk of fall after administration of low intensity exercise, and the calculated 't' value for the experimental

group was  $t=17.38$  which is found significant at  $P < 0.05$ . Then the calculated 't' value for control group was  $t=7.41$  which is found significant at  $P < 0.05$  level, but less significant than experimental group. So low intensity exercise is effective on reduction of risk of fall among elders.

3. To find out the association between the risk of fall after administration of low intensity exercise with selected demographic variables.

The findings of the study reveal that the demographical variables (age, sex, educational status, marital status, occupation, presence of any diseases, and history of falls) had not statistically significant association with risk of fall.

**HYPOTHESIS:**

There is a significant reduction on risk of fall after administration of low intensity exercise. Hence the stated hypothesis was accepted

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