

Correlation of Parameters of Fitness Test among Male Adults In India

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Abstract: The objective of this study is to evaluate the physical functional capacity of elderly male people. For this study, 26 male adults of different age groups doing regular walking and minimum fitness exercises at various places of Hyderabad are selected randomly. The age group was 60-64, 65-69 and 70-74. The fitness variables are tested by using Rikil and Jones senior citizen test for assessing the functional fitness of older adults. This test is easy- to-understand and effective test to measure aerobic fitness, strength and flexibility using minimal and inexpensive equipment. The individual fitness test items involve common activity such as getting up from chair, walking, lifting, bending and stretching. For testing the data mean, standard deviation and F ratio is applied. As per the Jones and Rikli norms (2001) the functional fitness in senior adults of Hyderabad is below average in almost all age groups in every fitness test battery. Statically there is no significant difference among three age groups as the significance values are below $p=0.05$ level.

Key words: Rikil and Jones senior fitness test; Physical exercises; male adults; Statistical analysis

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I. Introduction

The culture of physical exercises and fitness forms its roots right from early childhood. This involves teaching and practicing the art of taking care of one's body and health daily. In the scenario, with the changing demographic profile, disease burden and rising health care costs on account of non-communicable and chronic diseases, it's critical to move towards the delivery of a more holistic comprehensive primary health care.

Helping to delay physical frailty and improve functional mobility among older adults are two of the most important goals of senior fitness instructors. Many would say the quality of life in later years depends largely on being able to continue doing what you want, without pain, as long as possible. Designing effective exercise programs that can help older adults maintain or improve their mobility requires two prerequisites: 1) an understanding of the physical attributes needed for mobility tasks in later years. 2) The ability to assess physical attributes, so that client weaknesses can be detected and then targeted for personalized programming.

As an older adult, regular physical activity is one of the most important things that contribute to good health. It can prevent many of the age-related health problems. It also helps build muscles stronger to do day-to-day activities without depending on others. Therefore, the senior fitness test is practical and suitable set of tests for clinical use and it is appropriate for healthy elderly people. The purpose of this study is to measure physical fitness in older male people of Hyderabad, India. The researcher selected the Rikil and Jones senior citizen test for assessing the functional fitness of older adults which is easy to understand and effective test to measure aerobic fitness, strength and flexibility using minimal and inexpensive equipment.

II. Methodology

Selection of Subjects: For this study 26 male adults of different age groups doing regular walking and minimum fitness exercises at various places of Hyderabad are selected randomly. The first age group was 60-64, it consists of nine (9) subjects with average age of 61.44 ± 1.49 , the second age group was 65-69 having eight (8) subjects with average age of 66.75 ± 1.55 and third age group was 70-74 of nine subjects with average of 72.89 ± 0.94 .

Selection of variable: The scholar selected the Rikil and Jones senior citizen test for assessing the functional fitness of older adults which describes easy to understand and effective test to measure aerobic fitness, strength

and flexibility using minimal and inexpensive equipment. The individual fitness test items involve common activity such as getting up from chair, walking, lifting, bending and stretching.

Criterion measures:

Sl.No.	Variable /testing component	Type of test	Units of measurement
1	Chair stand test	Lower body strength	In centimetres
2	Back scratch test	Upper body flexibility	In centimetres
3	Chair sit and reach test	Lower body flexibility	In centimetres
4	8 foot up and go test	Agility	In seconds
5	Arm curl test	Upper body strength	Repetition in 30 seconds
6	Step test	Aerobic Endurance	Repetitions in 2 minutes

Research design:

The researcher collected raw data by administering six tests of Rikil and Jones senior citizen test(2001). The tests were developed to be safe and enjoyable for older adults while still meeting scientific standards for reliability and validity.

Administration of tests

1. Chair stand test

Purpose: To assess lower body flexibility

Description

From a sitting position at front of chair, with leg extended and hands reaching toward toes.

Risk zone: Minus (-) 4 inches or more

Score: The number of inches (cm) (+ or -) between extended fingers and tip of toe.

2. Back scratch test

Purpose: To assess upper body (shoulder) flexibility

Description: With one hand reaching over the shoulder and one up the middle of the back.

Risk zone: Minus (-) 4 inches or more

Score: The number of inches (cm) between extended middle fingers (+ or -).

3. Chair sit and reach test

Purpose: To assess lower body flexibility

Description: From a sitting position at front of chair, with leg extended and hands reaching toward toes.

Risk zone: Minus (-) 4 inches or more

Score: The number of inches (cm) (+ or -) between extended fingers and tip of toe.

4. 8 foot up and go test

Purpose: To assess agility/dynamic balance

Description: Number of seconds required to get up from a seated position,

Risk zone: More than 9 seconds.

Score: Walk 8 feet (2.44 m), turn, and return to seated position.

5. Arm curl test:

Purpose: To assess upper body strength

Description: Holding a hand weight of 5 lbs (2.27 kg) for women; 8 lbs (3.63 kg) for men.

Risk zone: Less than 11 curl using correct form for men and women.

Score: Number of bicep curls that can be completed in 30 seconds

6. Step test:

Purpose: Alternate aerobic endurance test

Description: Raising each knee to a point midway between the patella (kneecap) and iliac crest (top hip bone).

Score is number of times right knee reaches the required height.

Risk zone: Less than 65 steps for men and women.

Score: Number of full steps completed in 2 minutes.

Statistical analysis: For Analysis of data the ANOVA was applied to analyse the differences among the group means. The level of significance was set at .05 levels.

Table No.1 Mean values of senior fitness variables among three age groups.

Age group		CS	BS	CS & R	8 Foot UP & GO		AC	ST
					1st	2nd		
60-64	Mean	13.78	-6.78	-3.33	6.79	6.41	19.22	34.67
	S.D	1.72	7.32	4.88	2.07	1.50	6.97	11.88
65-69	Mean	12.63	-10.00	-6.38	6.70	6.66	16.88	33.50

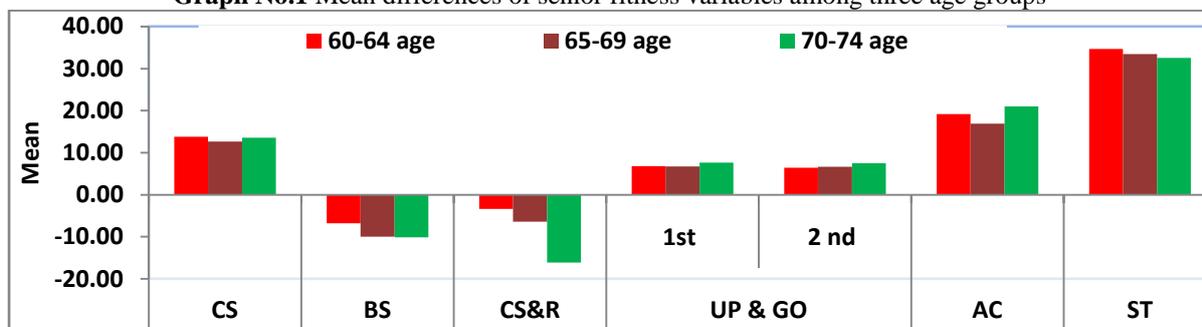
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	S.D	2.66	20.68	18.43	1.56	1.44	6.76	10.02
70-74	Mean	13.56	-10.11	-16.11	7.64	7.49	21.00	32.56
	S.D	4.41	9.68	22.90	1.85	1.74	10.10	9.82

*CS- Chair stand test, *BS- Back scratch test, *CS&R-Chair sit and reach test, *UP&GO-8 foot up and go test, *AC-Arm curl test, *ST-Step test.

Above table shows the adult fitness test means and standard deviation of three age groups. In chair stand test for testing lower body Strength was above average in two age groups i.e., 65-69 and 70-74 as per Jones and Rikli norms(2001)of 12-18 (65-69 age group) and 12-17 (70-74 age group) however in first age group i.e., 60-64 lower body strength was below average than 14-19. In back scratch test for testing flexibility for upper body was below average in all age groups as per the norms of Jones and Rikli (-6.5- +00, -7.5- -1.0, -8.0- 1.0) the values of subjects was highly deviated from the mean. In Chair sit and reach test for testing lower body flexibility was below average three age group as per the norms of Jones and Rikli(-2.5- +4, -3.0-+3.0, -3.5-+2.5) the values of the subjects was away from the mean. In 8 foot up and go test for testing agility was below average in three age groups as per the norms of Jones and Rikli (5.6-3.8, 5.7-4.3, and 6.0-4.2) the values of the subjects was near to the mean. In Arm curl test for testing upper body strength was above average in almost all group then norms (16-22, 15-21, 14-21). In Step test for testing alternate aerobic endurance test was below average in all age groups then norms (87-150, 86-116, 80-110).

Graph No.1 Mean differences of senior fitness variables among three age groups



Above graph shows the mean values of senior fitness variables. The red color bar represents the 60-64 age group and maroon color bar represents 65-69 age group and green color indicates 70-74 age group. In chair stand test (CS) second age group leg body strength was low than rest of groups. In back scratch test (BS) 60-64 age group flexibility was good than rest of age groups. In chair sit-& reach test (CS&R) the 60-64 age group had higher flexibility than other groups. In 8 foot up&go test (UP&GO) typically all age groups had almost same quality of agility. In arm curl test the 70-74 age group had higher upper body strength than other age groups and in 2mintues step foot test the 60-64 age group had higher aerobic endurance than rest of the age groups.

Table-2: Analysis of variance among three groups

FITNESS VARIABLES	F	Sig
CS CHAIR STAND	0.299	0.744
BACK STRETH TEST	0.3	0.744
CHAIR SIT & REACH TEST	1.467	0.251
UP & GO 1st	0.665	0.524
UP & GO 2nd	1.14	0.337
BICEP CURL	0.516	0.603
STEP TEST	0.089	0.915

Above table shows the differences among groups on independent variable. The results of each fitness variable statistically not significant at p=0.05 level. Hence the results states that the each functional fitness of older adults had below average in almost all age groups.

III. Conclusions:

The Rikli and Jones test battery had a high reliability in evaluating the physical functional fitness of older adults. In this study on each fitness variable had no significant difference among adults of Hyderabad because the statistical F results was below $p=0.05$ level among three age groups. As per the norms of the Jones and Rikli norms (2001) the performance of fitness in senior adults was below average in almost all age groups in every test battery. The reason for below average fitness among senior male adults may be attributed on previous life style, diseases, habits, previous fitness and other factors.

IV. Recommendations:

- 1) The researcher recommended that adults who had below average physical fitness, experiment with modified life style and diet pattern.
- 2) Furthermore, an increase in energy expenditure through physical activity decreases risk.
- 3) It is recommended to conduct the same type of research on female adults and also compare with male adults.

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