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Effectiveness of stretching exercise on physical fitness performance

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Abstract

The study will be constituted on 30 Chaudhary Devi Lal University Students. Out of which 20 males and 10 female students Department of Physical Education. The experimental method was adopted for this study. The investigator defined the population for the study as 30 Chaudhary Devi Lal University Students. The pre and post test data of all the subjects was collected. The post test data was collected after 3 weeks of pretest data during this period certain stretching exercise were given to the subjects. The data was computed using mean and S.D. of the measured scores. The pre and post test data was analyzed using T-test and the level of significance was set at 0.01.

Tools: Sit and Reach Flexibility Test, Side-Bending Flexibility Test, AAHPERD Functional Fitness Test. According to the results of pre and posttest after taking the test by AAHPERD Functional Fitness Test, hypotheses are significant difference in the stretching ability of the male players, the stretching ability of the female players, the components of sit and reach flexibility test on the male players, and the components of side bending test on the female players.

Sit and reach flexibility test: Measurement of the flexibility to Sit and Reach Flexibility Test. Table no. 31 show the data Sit and Reach Flexibility Test.

Side-bending flexibility test: Measurement of the side bending flexibility test. Table no 32 show the result of Side-Bending Flexibility Test. AAHPERD Functional Fitness Test.

Keywords: physical fitness, flexibility test, fitness test

Introduction

Physical fitness is the ability to carry out the daily task with vigor and alertness, without undue fatigue and with ample energy to enjoy the leisure time and pursuits to meet unforeseen emergency situations. Physical fitness is a broad term which literally means a hale and healthy physique. The physical level of an individual indicates as to how one fits into group. The purpose of physical fitness is to create consciousness and enthusiasm among people and to stimulate these interest for physical welfare which will help them to have a better and more healthful living.

Physical fitness means the ability of an individual to live a happy and well balanced life. It involves not only physical, but intellectual, emotional, social and spiritual aspects of an individual. Interaction and interdependence of these phases of adman's health are such that any deviation from normal in any aspect of these components of fitness will make amen unable to meet the demands placed on him by his worker way of life.

Physical fitness includes speed, flexibility, power, strength, co-ordination, muscular endurance, cardiovascular endurance and agility. These characteristics are all equalized with the healthy functioning of the body. Another but a different and important components of physical fitness is the athletic skill. The various aspects of physical fitness and the skills are inter-related.

Procedure

The study will be constituted on 30 Chaudhary Devi Lal University Students. Out of which 20 males and 10 female students Department of Physical Education. The experimental method was adopted for this study. The investigator defined the population for the study as 30 Chaudhary Devi Lal University Students. The pre and post test data of all the subjects was collected.

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The post test data was collected after 3 weeks of pre-test data during this period certain stretching exercise were given to the subjects. The data was computed using mean and S.D. of the measured scores. The pre and post test data was analyzed using T-test and the level of significance was set at 0.01.

Tools: Sit and Reach Flexibility Test, Side-Bending Flexibility Test, AAHPERD Functional Fitness Test.

Results

Table 1: The comparison of pull ups between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
PULL - UP (60 sec)	4.17	2.42	7.90	3.41	-3.73	1.60	-12.81	29	0.00**

**Significant at 0.01 level

Note: M = Mean, SD = Standard deviation, df = Degree of freedom

Table 1. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 4.17, SD = 2.42 and post-test score M = 7.90, SD = 3.41. The Pair difference value M = -3.73, SD = 1.60. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a t-test, was t (-12.81). According to these results, there is

statistically significant difference between the pre-test and post test scores of pull ups of these two groups at the 0.01 level ($p = 0.00$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 2: The comparison of sit ups between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
Sit up (60 sec)	29.47	9.74	31.93	8.96	-2.47	6.76	-2.00	29	0.06*

**Significant at 0.01 level

Note: M = Mean, SD = Standard Deviation, Df = Degree of Freedom

Table 2. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 29.47, SD = 9.74 and post-test score M = 31.93, SD = 8.96. The Pair difference value M = -2.47, SD = 6.76. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a

t-test, was t (-2.00). According to these results, there is statistically significant difference between the pre-test and post test scores of Sit ups of these two groups at the 0.01 level ($p = 0.06$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 3: The comparison of shuttle run between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
Shuttle Run (60 sec)	1.47	0.35	1.38	0.37	0.10	0.45	1.15	29	0.26*

**Significant at 0.01 level

Note: M = Mean, SD = Standard deviation, df = Degree of freedom

Table 3. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 1.47, SD = 0.35 and post-test score M = 1.38, SD = 0.37. The Pair difference value M = 0.10, SD = 0.45. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a

t-test, was t (1.15). According to these results, there is statistically significant difference between the pre-test and post test scores of Shuttle Run of these two groups at the 0.01 level ($p = 0.26$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 4: The comparison of standing line jump between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
Standing line Jump (M)	1.73	0.37	2.24	0.18	-0.52	0.36	-7.77	29	0.00**

**Significant at 0.01 level

Note: M = Mean, SD = Standard deviation, df = Degree of freedom

Table 4. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 1.73, SD = 0.37 and post-test score M = 2.24, SD = 0.18. The Pair difference value M = -0.52, SD = 0.36. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a

t-test, was t (-7.77). According to these results, there is statistically significant difference between the pre-test and post test scores of Standing Line Jump of these two groups at the 0.01 level ($p = 0.00$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 5: The comparison of 50-yards dash between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
50-Yard Dash (Sec)	7.42	0.66	6.82	0.73	0.60	0.48	6.80	29	0.00**

**Significant at 0.01 level

Note: M = Mean, SD = Standard deviation, df = Degree of freedom

Table 5. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 7.42, SD = 0.66 and post-test score M = 6.82, SD = 0.73. The Pair difference value M = 0.60, SD = 0.48. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a

t-test, was t (6.80). According to these results, there is statistically significant difference between the pre-test and post test scores of 50- Yard Dash of these two groups at the 0.01 level ($p = 0.00$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 6: The comparison of 600-yards run between pre and post-test for pair different

	Pre		Post		Pair difference		t-value	df	p-value
	Mean	SD	Mean	SD	Mean	SD			
600 yard run (Sec)	1.96	0.45	1.68	0.40	0.27	0.40	3.73	29	0.00**

**Significant at 0.01 level

Note: M = Mean, SD = Standard deviation, df = Degree of freedom

Table 6. The value on the pre-test, post-test and Pair difference. The average pre-test score group was M = 1.96, SD = 0.45 and post-test score M = 1.68, SD = 0.40. The Pair difference value M = 0.27, SD = 0.40. The value of the Degree of Freedom is 29. The difference between pre-test and post-test of these two groups, analyzed independently using a

t-test, was t (3.73). According to these results, there is statistically significant difference between the pre-test and post test scores of 600 yard Run of these two groups at the 0.01 level ($p = 0.00$; $p < .01$). The p-value is less than the 0.01 level of significant. So, the result of the t test analysis indicated that the researcher must aspect hypothesis.

Table 7: Sit and reach flexibility test

	Very poor	Poor	Fair	Average	Good	Excellent	Super
Female	< -15	-15 to -8	-7 to 0	+1 to +10	+11 to +20	+21 to +30	> +30
Male	< -20	-20 to -9	-8 to -1	0 to +5	+6 to +16	+17 to +27	> +27

Table 7. Result Analysis Measure the sit and reach flexibility test. The measurements are in cm. Very Poor, Poor, Fair, Average, Good, Excellent, Super, Female < -15 -15 to -8 -7 to 0 +1 to +10 +11 to +20 +21 to +30 > +30 and the Male < -20 -20 to -9 -8 to -1 0 to +5 +6 to +16 +17 to +27 > +27.

female players.

Table 8: Percentile values for side-bending distance, cm (in) points by age range and repetitions

Percentile	Age range		
Male	21-23	24-25	26-27
80th	24.1 (9.5)	23.1 (9.1)	20.6 (8.1)
60th	22.1 (8.7)	21.6 (8.5)	18.7 (7.4)
40th	20.2 (8.0)	19.8 (7.8)	17.1 (6.7)
20th	18.5 (7.3)	15.5 (6.1)	14.7 (5.8)
Female			
80th	23.7 (9.3)	22.5 (8.9)	20.1 (7.9)
60th	21.8 (8.6)	19.9 (7.8)	18.6 (7.3)
40th	21.1 (8.3)	18.6 (7.3)	16.9 (6.7)
20th	17.8 (7.0)	16.1 (6.3)	15.6 (6.5)

Table no 8, can be used to determine percentile rank based on gender, age-range, and distance of the side bend.

Discussion

According to the results of pre and posttest after taking the test by AAHPERD Functional Fitness Test, hypotheses are significant difference in the stretching ability of the male players, the stretching ability of the female players, the components of sit and reach flexibility test on the male players, and the components of side bending test on the

Conclusions

Sit and reach flexibility test

Measurement of the flexibility to Sit and Reach Flexibility Test. Table no.31 show the data Sit and Reach Flexibility Test.

Side-bending flexibility test

Measurement of the side bending flexibility test. Table no 32 show the result of Side-Bending Flexibility Test.

AAHPERD functional fitness test

American Alliance for Health, Physical Education, Recreation & Dance (AAHPERD) Functional Fitness Test was designed for adults over the age of 60 years. The test items are designed to measure the fitness capacity of the low fitness elderly who are not yet frail, and described in a test manual by Osness (1996). The tests measure body composition, flexibility, agility, coordination, upper body strength and aerobic endurance. The tests were designed so that they could be administered by professional and clinicians in the field who lack specialized measurement equipment training and resources. Also read a discussion about testing the elderly.

- Pull-up
- Sit-up
- Shuttle run
- Standing ling jump
- 50-yard dash
- 600yard run

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