International Journal of
Recent Research and Applied Studies

Analysis of Physical Fitness Regimen among the Athletes and Non-Athletes of Bangalore - An Experimental Study

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Abstract

Physical Fitness plays a key role in enhancing the performance of an Individual. Physical Fitness depends on the activity which an individual regularly practices. Different games require different physical fitness. Today many people suffer from diabetes and heart diseases, these are caused due to in active or sedentary life style. Regular physical fitness programme reduces coronary heart diseases and diabetes. Regular Physical activity enhances and maintain the muscular strength, muscular endurance and flexibility. The Purpose of the study is to identify how the regular physical activity enhances the physical fitness among athletes and non- athletes. For the study 300 subjects, from that 150 are taken act as a Sports Persons (athletes) group and 150 act as a Non-Sports Persons group (Non- athletes). Statistical Techniques like Mean, Standard Deviation, T-test and Level of Significance at 0.05 are used for the study.

Keywords: Physical Fitness, Athletes and Non- Athletes.

Introduction

Physical Fitness is the most important components to tone the human body for good looking, feeling good and to live long. Now a days Obesity, Over Weight, Diabetes and Cardiac Arrest are one of the major problem's in the country. To avoid these problems to the younger generation physical fitness is most important. If the younger generation involve in the physical activity with the combination of proper nutrition they can avoid most of the physical problems. The Health Benefits of Physical Activity or Physical Fitness are very high and it increases the efficiency of heart and lung capacity, reduces cholesterol levels, increases muscle strength and reduces blood pressure. There are psychological benefits, if a person involves in the regular physical activity improves the quality of sleep, Increases the mental sharpness, improves the ability to cope with stress.

Methodology

This study was designed to compare the Level of Physical Fitness among the athletes and non- athletes. To achieve this purpose over all 300 students were selected from the secondary school boys in that, 150 athletes and 150 Non-athletes from different sports and games from CBSC Board, State Board and ICSE Board were randomly picked as subjects. Both the groups were given regular physical activity for five days a week and one hour every day. Athletes were taken as an observation group and Non-Athletes were taken as an experimental group. The groups were tested with the help of AAHPER youth physical fitness test. The Subjects were tested below mentioned tests. Statics are used t-test to find 0.05 significant levels.

Sl No.	Variables	Test	Unit
1	Abdominal Muscular Endurance	Sit-Up	Numbers
2	Speed	50 mts dash	Seconds
3	Explosive Power Leg	Standing Broad Jump	Meter
4	Respiratory Endurance	800mts Walk/Run	Minutes / Seconds
5	Agility	Shuttle Run	Seconds
6	Flexibility	Sit and Reach	Meter
7	Strength	Pull-Ups	Numbers

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Figure I
Agility (Shuttle Run)
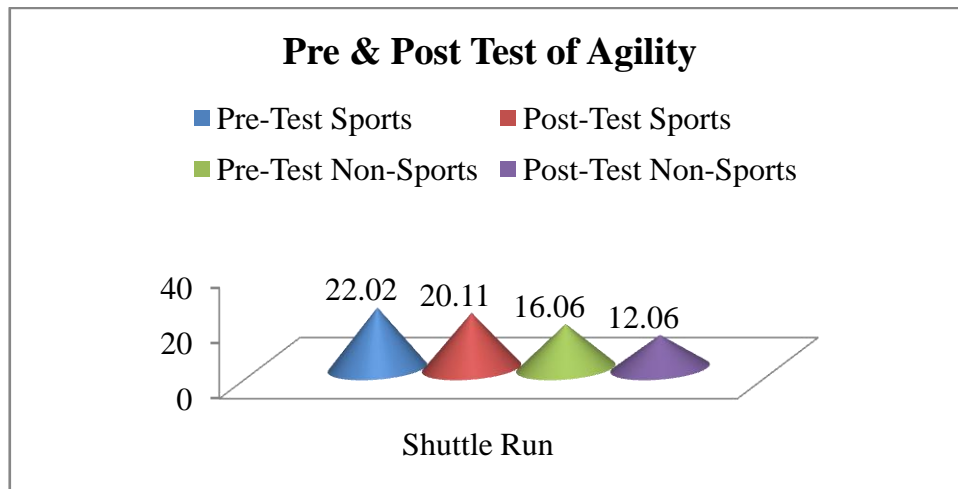
		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	22.02	106.6	1.647	**
	Post-test	A	150	20.11	103.11		
Non-Sports Persons	Pre-Test	B	150	16.06	1.03	1.147	NS
	Post-test	B	150	12.06	1.95		

**=0.05, NS=No Significance (critical value = 1.645)

From Table 1

It is observed from the above table that the sports persons group's the agility mean score of the pre-test is 22.02, which has decreased to 20.11 in the post-test, where among the non-sports person, the pre-test mean is 16.06 and post-test mean score of agility is 12.06 respectively. It is also evident from the above table that the obtained t-value 1.645 is greater than the critical value 1.645 even at 0.05 level of significance in the sports persons group and t- value of non-sports person is 1.14 is less than the critical value 1.645 at 0.05 level of significant.

Discussion on agility

The study shows that there is a significant improvement in the Agility Performance of Sports Persons and there was no significant improvement in the Non-Sports Persons. It may be because of very less duration for agility training.

Figure II
Speed (50 mts Dash)
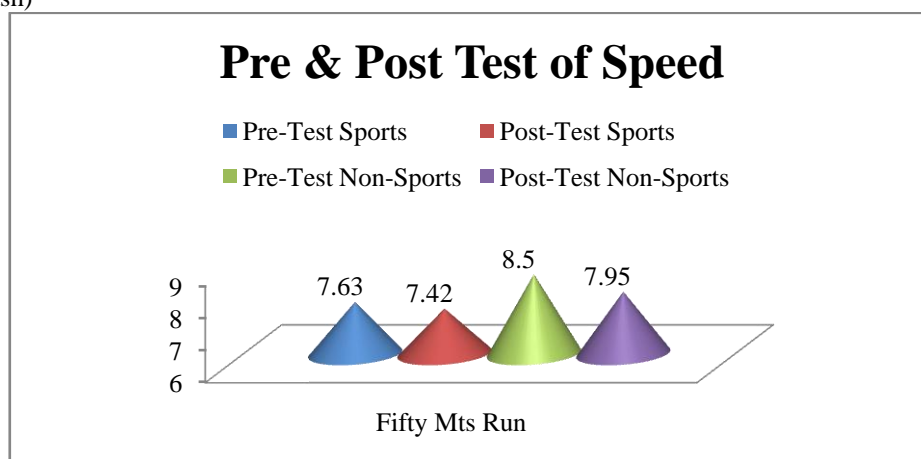
	Test	Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	7.63	0.24	1.99	**
	Post-test	A	150	7.42	0.23		
Non-Sports Persons	Pre-Test	B	150	8.50	0.35	3.81	**
	Post-test	B	150	7.95	0.32		

**=0.05, NS=No Significance ,(critical value = 1.645)

From Table 2

It is observed from the above table that sports persons group's speed mean score of pre-test is 7.63, which has decreased to 7.42 in post-test, where among the non-sports person the pretest mean is 8.50 and post-test mean score of speed is 7.95 respectively. It is also evident from the above table that the obtained t-value 1.99 is greater than the critical value 1.645 even at 0.05 level of significance in sports person and t- value of non-

sports person is 3.81 is greater than the critical value 1.645 at 0.05 level of significant.

Discussion on speed

The study shows that there is a Significant Improvement in the speed performance of Sports Persons and Non-Sports Persons. It may be due to the regular speed training, stretching and genetic factor of sports person.

Figure III
Explosive strength (Standing Broad Jump)
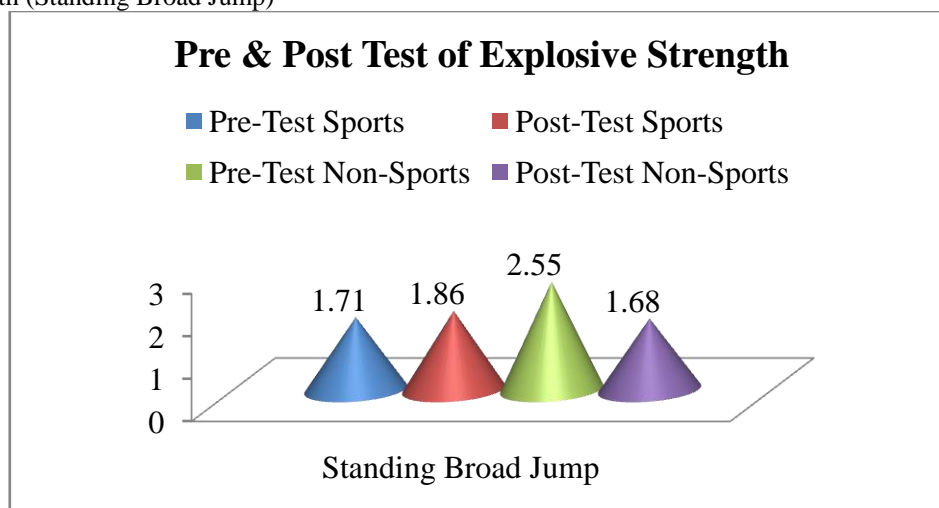
		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	1.71	0.22	2.456	**
	Post-test	A	150	1.86	0.37		
Non-Sports Persons	Pre-Test	B	150	2.55	0.20	0.6737	NS
	Post-test	B	150	1.68	0.21		

**=0.05, NS=No Significance,(critical value=1.645)

From Table 3

It is observed from the above table that the sports persons group's explosive strength mean score of the pre-test is 1.71, which has decreased to 1.86 in post-test, where among non-sports person the pretest mean is 2.55 and post-test mean score of agility is 1.68 respectively. It is also evident from the above table that the obtained t-value 2.456 is greater than the critical value 1.64 even at 0.05 level of significance in the sports
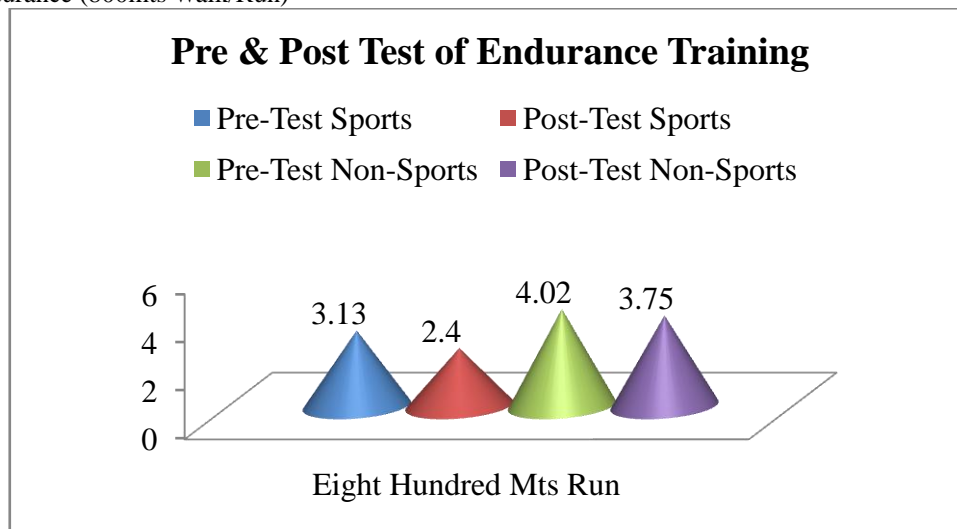
person and t- value of non-sports person is 0.67 is less than the critical value 1.64 at 0.05 level of significant.

Discussion on Standing Broad Jump

The study shows that there is a significant improvement in the explosive strength performance of Sports Persons and there is no significant improvement in Non-Sports Persons. It may be because of irregular explosive strength training.

Figure IV
Respiratory Endurance (800mts Walk/Run)

Pre & Post Test of Endurance Training

■ Pre-Test Sports   ■ Post-Test Sports
■ Pre-Test Non-Sports   ■ Post-Test Non-Sports

Eight Hundred Mts Run

		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	3.13	0.36	3.649	**
	Post-test	A	150	2.40	0.13		
Non-Sports Persons	Pre-Test	B	150	4.02	0.41	1.6717	**
	Post-test	B	150	3.75	0.13		

** = Significant 0.5, (critical value=1.645)

From Table 4

It is observed from the above table that sports persons group's Endurance Training mean score of pre-test is 3.13, which has decreased to 2.40 in post-test, where among non-sports person the pre-test mean is 4.02 and post-test mean score of agility is 3.75 respectively. It is also evident from the above table that the obtained t-value 3.64 is greater than the critical value 1.64 even at 0.05 level of significance 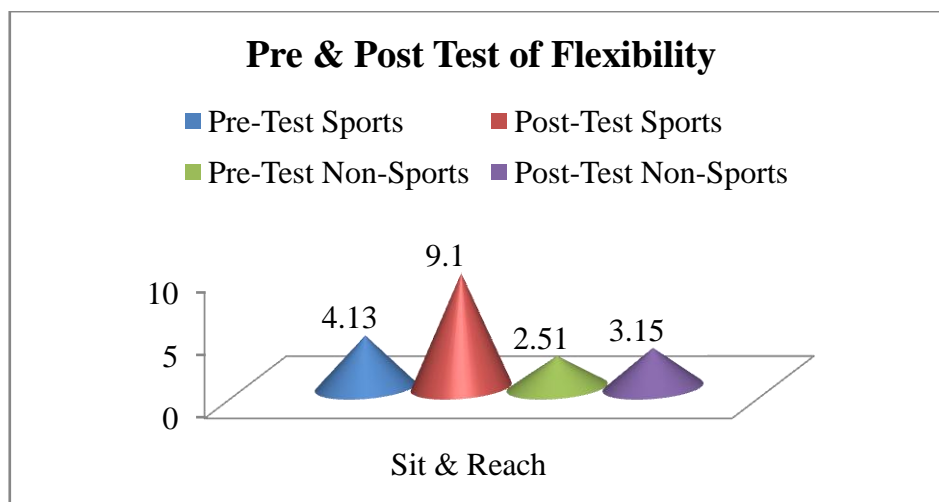in sports person and t- value of non-sports person is 1.67 is more than the critical value 1.64 at 0.05 level of significant.

Discussion on 800mts Walk/Run

The study shows that there is a significant improvement in 800mts walk/run. It is due to the regular Physical Activity which would have strengthened the left vertical muscle. Hence there is a significant improvement in the Respiratory Endurance.

Figure V
Flexibility

Pre & Post Test of Flexibility

■ Pre-Test Sports   ■ Post-Test Sports
■ Pre-Test Non-Sports   ■ Post-Test Non-Sports

Sit & Reach

		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	4.13	1.68	2.5187	**
	Post-test	A	150	9.10	1.90		
Non-Sports Persons	Pre-Test	B	150	2.51	1.09	3.758	**
	Post-test	B	150	3.15	1.14		

**=Significant 0.05 (critical value=1.645)

From Table 5

It is observed from the above table that sports persons group's Flexibility mean score of the pre-test is 4.13 which has increased to 9.10 in the post-test, where among the non-sports person the pre-test mean is 2.51 and post-test mean score of agility is 3.15 respectively. It is also evident from the above table that the obtained t-value 2.5187 is greater than the critical value 1.645 even at 0.05 level of significance in sports person and t- value

of non-sports person is 3.758 is less than the critical value 1.645 at 0.05 level of significant.

Discussion on flexibility

The study shows that there is a significant improvement in the Flexibility. It is due to the regular physical activity which would have improved the range of motion. Hence there is a significant improvement in Flexibility.

Figure VI
Strength
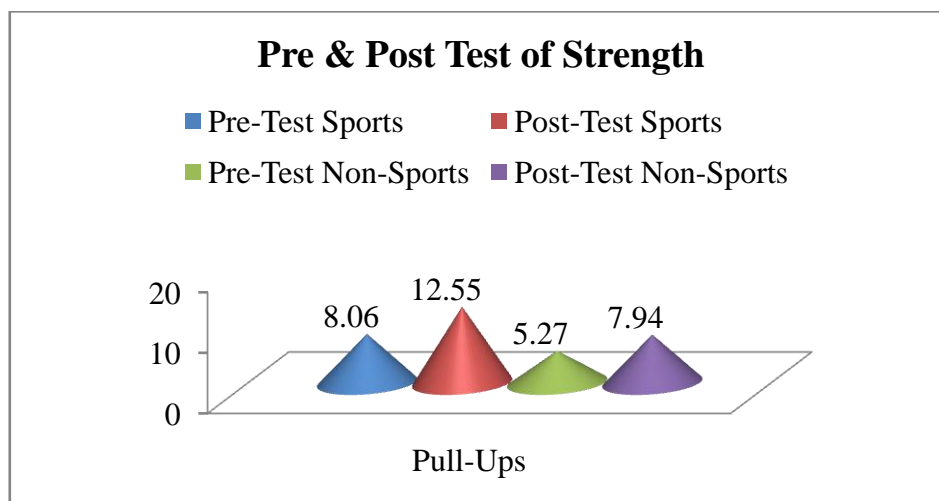
		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	8.06	1.1	2.395	**
	Post-test	A	150	12.55	1.93		
Non-Sports Persons	Pre-Test	B	150	5.27	1.65	2.283	**
	Post-test	B	150	7.94	1.11		

**=0.05

From Table 6

It is observed from the above table that sports persons group's Strength mean score of the pre-test is 8.06, which has increased to 12.55 in post-test, where among the non-sports person the pre-test mean is 5.27 and post-test mean score of agility is 7.94 respectively. It is also evident from the above table that the obtained t-value 2.39 is greater than the critical value 1.64 even at 0.05 level of significance in sports person and t- value of non-sports person is 2.283 is less than the critical value

1.64 at 0.05 level of significant.

Discussion on Strength

The study shows that there is a significant improvement in strength. It is due to the repeated stretching after regular strength training, which has increased the strength of the upper extremity muscle. Hence there is a Significant Improvement in the Strength.

Figure VII
Abdomen Muscular Endurance

Pre & Post Test of Abdominal Muscular Endurance
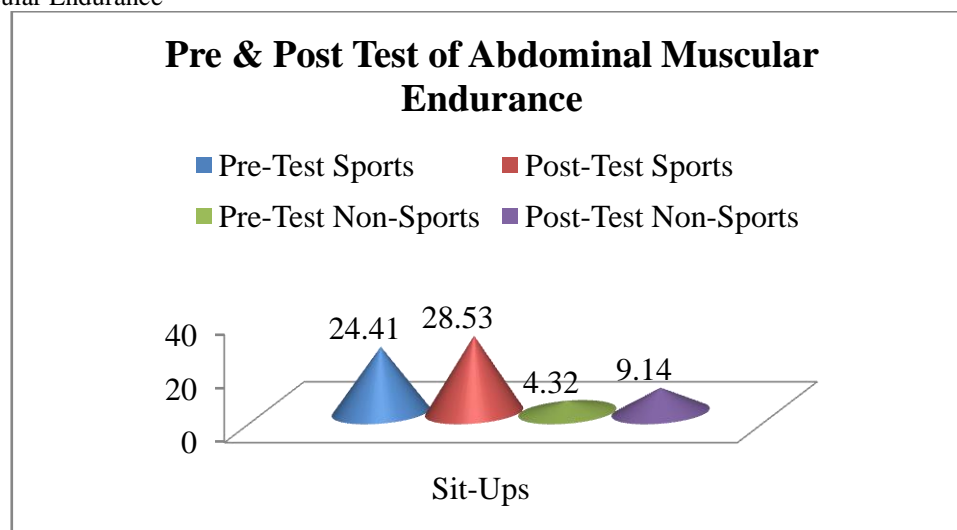
		Group	N	Mean	Standard Deviation	t-test	Significant Level
Sports Persons	Pre-Test	A	150	24.41	10.17	1.979	**
	Post-test	A	150	28.53	11.46		
Non-Sports Persons	Pre-Test	B	150	4.32	1.99	0.789	NS
	Post-test	B	150	9.14	3.96		

**=0.05, NS=No Significance

From Table 7

It is observed from the above table that the sports persons group's the Abdominal Muscular Endurance mean score of the pre-test is 24.41, which has increased to 28.53 in the post-test, where among the non-sports person the pre-test mean is 4.32 and post-test mean score of agility is 9.14 respectively. It is also evident from the above table that the obtained t-value 1.979 is greater than the critical value 1.645 even at 0.05 level of significance in sports person and t- value of non-sports person is 0.789 is less than the critical value 1.645 at 0.05 level of significant.

Discussion on Abdominal Muscular Endurance

The study shows that there is significant improvement in Abdominal Muscular. It is due to the repeated core strengthening after regular Physical Activity which has increased the strength of core muscle group. Hence there is a significant improvement in the Abdominal Muscular Endurance.

Conclusion

It was conclude that after twelve weeks of study the performance of the athlete and non- athlete has increased. The primary outcome of the study concludes that there is a significant improvement in both the athlete and non -athlete due to the regular physical activity.

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