Effect of Six Week Specific Training Program on Selected Physical Fitness Variables of Basketball Players

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ABSTRACT

To systematize the study, ten male basketball players of ABN academy, Noida were randomly selected as subjects for the study. A total of 10 male players age ranged between 15-19 years, of ABN academy Noida, were selected as subject for the study. Variable are selected for the purpose of study, speed, agility, explosive strength-(shoulder and leg). The criterion measure chosen for testing the hypothesis in this study will be : 50 m dash (sec.), 10 x 4 shuttle run (sec.), standing broad jump (mt.), medicine ball through (mt.). The training was carried out for a period of six weeks, three days a week excluding the time consumed for conducting pre-test and post-test. The scholar demonstrated the training for group. Each subject of the training group performed their respective training. Sufficient and required recovery was provided between the tests. The effect of six-week specific training program on selected fitness variables of male basketball players by employing the paired t-test method and for testing the hypothesis the level of significance was set at 0.05. The result of the study indicated that there is no significant effect of given training programme on speed because speed is more a heredity factor than training. But as per the result of the study there is a significant effect on leg explosive strength, agility and shoulder strength.

Keywords- speed, agility, explosive strength.

I. INTRODUCTION

Basketball is one of the world's most popular and widely viewed sports. The National Basketball Association (NBA) is the most popular and widely considered to be the highest level of professional basketball in the world. One of the most important aspects of performance enhancement, other than the skill is the ability to produce power (Ebben et al., 1998). Moreover, the high intensity movements of basketball players are closely related to the development of strength, speed and agility (Hedrick, 1993; Castagna et al., 2007; Meckell et al., 2009). Explosive strength, take-off power, speed, and agility are abilities that make an important contribution to efficient movement with and without the ball, thus play an important role in basketball technique and tactics (Erculj et al., 2010). The level of these abilities, that is, the 2 motor potential, is most often measured using various motor tests with and without the ball (Colli et al., 1987). In basketball practice, motor tests are the most suitable and applicable because they are implemented in conditions similar to those of training or competition (Erculj et al., 2010). Therefore, to attain optimum performance in activities where speed is the main factor, above mentioned components should be woven together. Physical performance in basketball is measured as the product or outcome of standardized motor tasks requiring speed endurance, agility exercise, mobility and explosive strength. At the elite level, research has identified the intermittent high-intensity exercise as predominant and fitness improvements to this activity pattern have further been defined as power endurance (Thomas et al., 2000; Trinicetal et al., 2001; Siegleretal et al., 2003). In elite basketball games, available time motion analysis research shows that adult athletes performed per game 105 high-intensity bouts (85% maximum heart rate, HR) while covering a distance of 991m (in high-intensity) executing 50-60 changes in speed and direction and 40-60 maximal jumps (McInnes et al., 1995; Janeira et al., 1998).

II. PROCEDURE

To systematize the study, Ten male basketball players of ABN Academy, Noida were randomly selected as subjects for the study. A total of 10 male players age ranged between 15-19 years, of ABN academy Noida, were selected as subject for the study.
variable are selected for the purpose of study.

- **Speed**
- **Agility**
- **Explosive strength**
  -Shoulder
  -Leg

Table 1: Training schedule

	1st week	2nd week	3rd week	4th week	6th week	7th week
Tuesday	Speed (55-60%) intensity Four corner run 3×50 dash Zig-Zag run	With (60-65%) intensity	With (65-70%) intensity	With (70-75%) intensity	With (75-80%) intensity	Optimum effort of intensity
Thursday	Strength 55-60% intensity (leg) (alternate days) Plyometric exercises Squat with and without weight Burpee jump Skipping	With 60-65 % intensity (Shoulder)Biceps curl, medicine ball throw, bench press, push-ups, pull ups	With (65-70%) intensity	With (70-75%) intensity	With (75-80%) intensity	Optimum effort of intensity
Saturday	Agility (55-60%) intensity Shuttle run Move on sign and signals Lateral quickness Chasing the ball and go for shot	With (60-65%) intensity	With (65-70%) intensity	With (70-75%) intensity	With (75-80%) intensity	Optimum effort of intensity

Criterion Measures

Table 2: The criterion measure chosen for testing the hypothesis in this study will be

Variable	Criterion measure
Speed	50 m dash (sec.)
Agility	10 x 4 shuttle run (sec.)
Leg explosive strength	Standing broad jump (mt.)
Shoulder explosive strength	Medicine ball through (mt.)

Statistical procedure

The effect of six-week specific training program on selected fitness variables of male basketball players by employing the Paired T-Test method and for testing the hypothesis the level of significance was set at 0.05.

III. RESULTS

The statistical analysis of data collected, results and findings of data and discussion of findings has been presented. The Paired T-Test method was used to find out the effect of six week specific training program on selected fitness variables of male basketball players for testing the hypothesis the level of significance was set at 0.05.

Table 3: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Leg Explosive Strength (Standing Broad Jump)

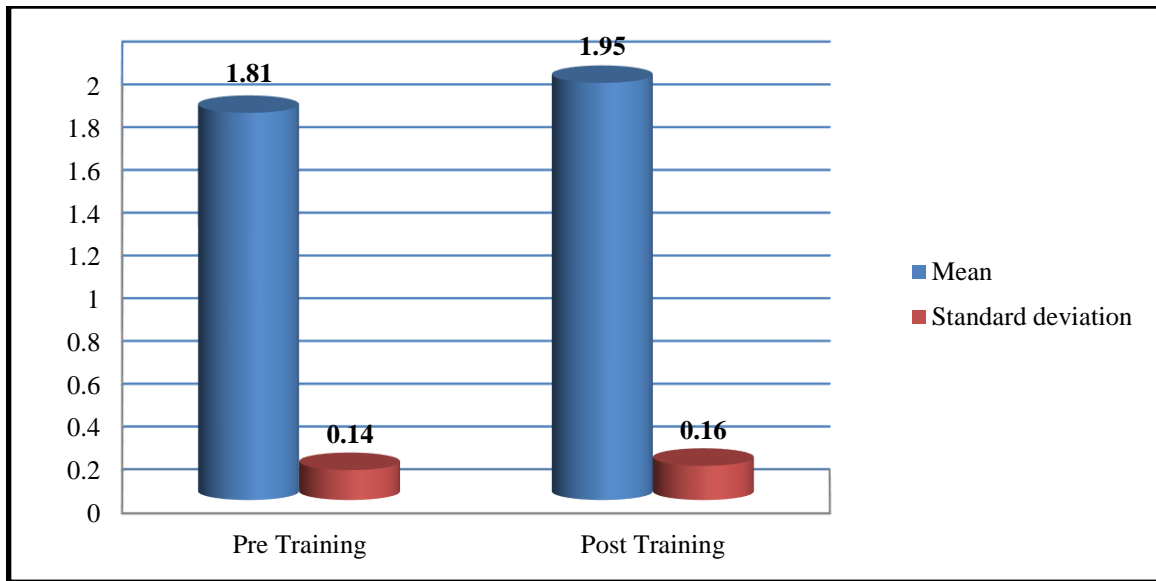| Paired Samples Statistics			
	Mean	N	Std. Deviation
Standing Broad Jump Pre-Data	1.81	10.00	.14
Standing Broad Jump Post Data	1.95	10.00	.16

Figure 1: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Leg Explosive Strength

Table 4: Paired Samples Test for Leg Explosive Strength (Standing Broad Jump)

	Paired Differences			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
standing broad jump pre data – standing broad jump post data	0.15	0.06	0.02	8.22	9.00	.00

Table 5: Mean Value and Standard Deviation of Pre Training and Post Training Performance for Agility (Shuttle Run)

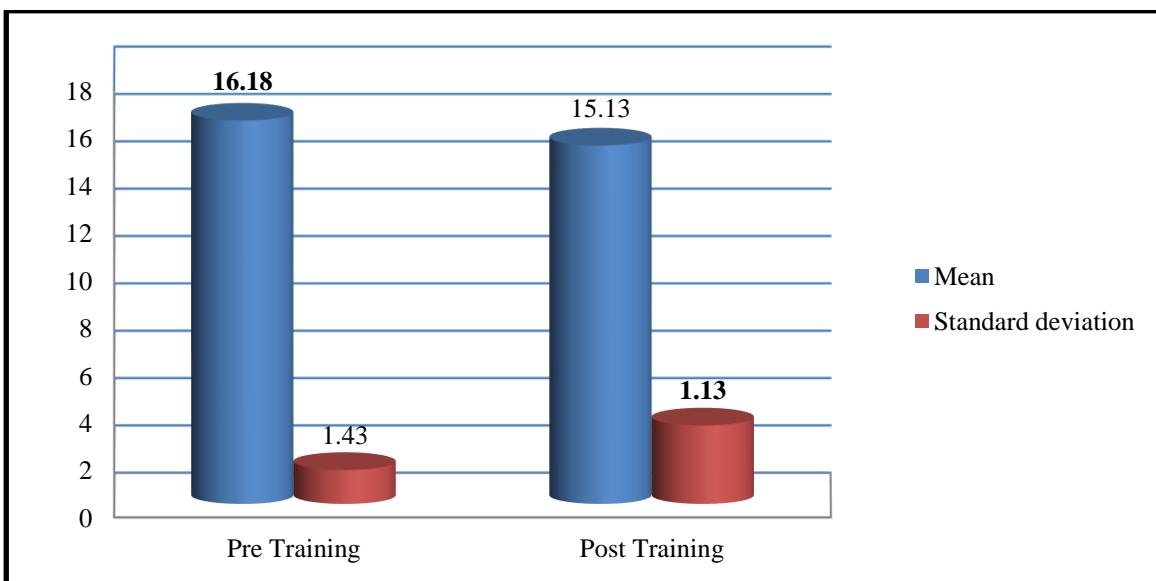| Paired Samples Statistics			
Recovery method	**Mean**	**N**	**Std. Deviation**
Shuttle Run Pre-Data	16.18	10.00	1.43
Shuttle Run Post Data	15.13	10.00	1.13

Figure 2: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Agility (Shuttle Run)

Table 6: Paired Samples Test for Agility (Shuttle Run)

	Paired Differences			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
Shuttle Run Pre-Data – Shuttle Run Post Data	1.05	0.85	0.27	3.92	9.00	.03

Table 7: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Speed (50m Dash)

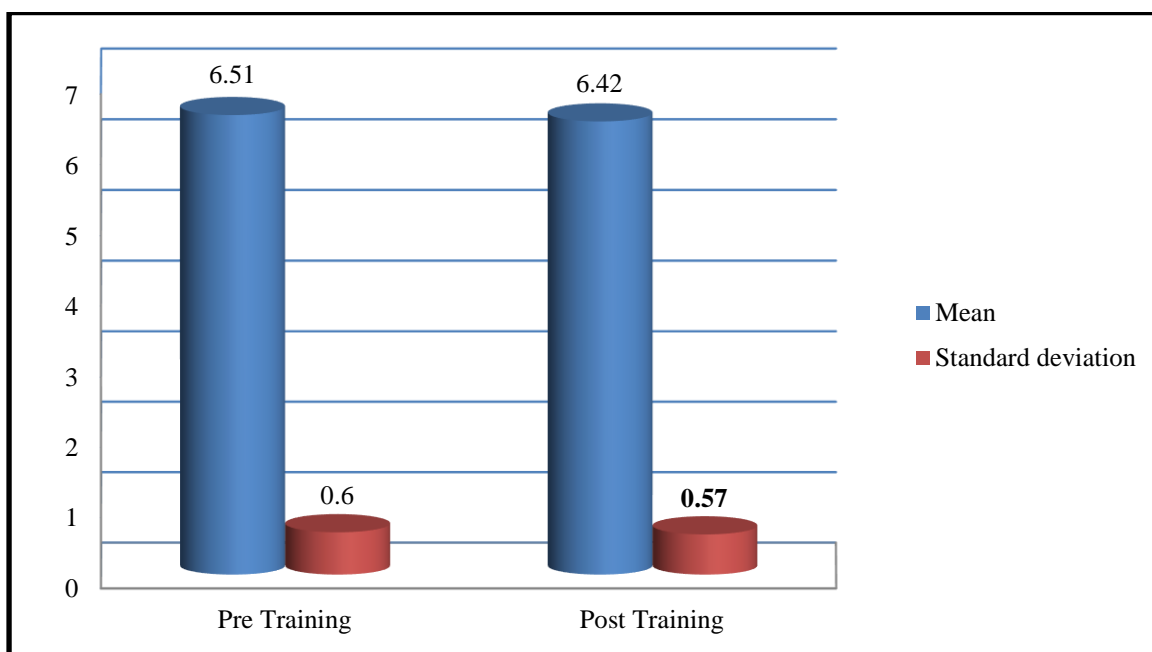| Paired Samples Statistics			
Recovery method	Mean	N	Std. Deviation
Speed Pre-Data	6.51	10.00	0.60
Speed Post Data	6.42	10.00	0.57

Figure 3: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Speed (50m Dash)

Table 8: Paired Samples Test for Speed (50m Dash)

	Paired Differences			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
Speed Pre-Data – Speed Post Data	0.08	0.16	.05	1.66	9.00	.13

Table 9: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Shoulder Strength

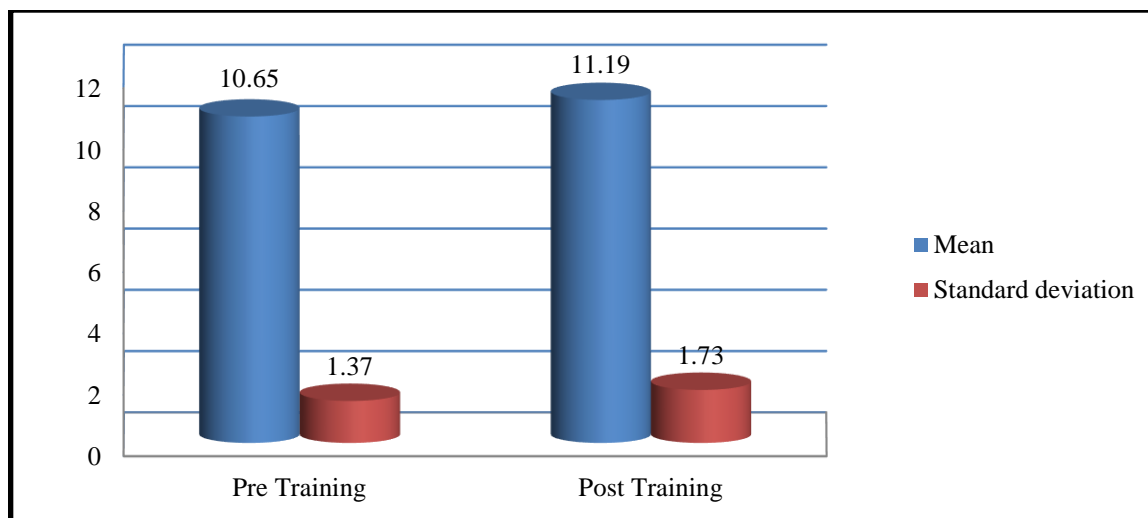| Paired Samples Statistics			
Recovery method	Mean	N	Std. Deviation
Shoulder Strength Pre-Data	10.65	10.00	1.37
Shoulder Strength Post Data	11.19	10.00	1.73

Figure 4: Mean Value and Standard Deviation of Pre-Training and Post Training Performance for Shoulder Strength

Table 10: Paired Samples Test for Shoulder Strength

	Paired Differences			t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean			
Shoulder Strength Pre-Data - Shoulder Strength Post Data	0.54	0.50	0.16	3.45	9.00	.01

IV. DISCUSSION

The present study was mainly designed to investigate the effect of six-week training programme on explosive leg strength, agility, speed and shoulder strength among basketball players. The result of the study indicated that there is no significant effect of given training programme on speed because speed is more a heredity factor than training. But as per the result of the study there is a significant effect on leg explosive strength, agility and shoulder strength.

The findings of the study are supported by: Demirhan Bilal (2014) and Nummela A et al. (2002).

The hypothesis for the study stated was that there will be significant effect of six week training programme on leg explosive strength, speed, agility and shoulder strength among basketball players. After analyzing the data of pre training performance and post training performance, the researcher found significant effect on leg explosive strength, agility and shoulder strength for but there is no significant effect found for the speed. So, on the basis of findings the hypothesis was not rejected at 0.05 level of significance for leg explosive strength, agility and shoulder strength but it was rejected for speed demands.

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