



EFFECT OF SPECIFIC TRAINING ON MOTOR FITNESS PARAMETERS OF COLLEGE LEVEL MEN BASKETBALL PLAYERS

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ABSTRACT

Basketball is the most practiced game in the world. Basketball is considered an intermittent high intensity sport that requires a well-developed physical fitness to be successfully played. Authors consider lower-limbs explosive power and aerobic fitness as main factors in basketball physical performance and training. Specifically, a good level of lower-limbs explosive power is considered useful to perform powerful accelerations and winning jumps during the game. The study was designed to investigate the "effect of specific training on motor fitness parameters of college level men basketball players". To achieve these purpose of the study, 30 college level basketball players were randomly selected from, Coimbatore district. They were divided into two groups. The group I was considered as experimental group and group II was considered as control group. The investigator did not make any attempt to equate the group. The control group was not given any exercise and the experimental group was given specific training for five days per week. The experimental group was given training for the period of 8 weeks of specific training. The following criterion variables were chosen namely speed, and leg explosive power. All the dependent variables were assessed before and after the training period of 8 weeks. The collected data on motor fitness parameters due to effect of specific training was analyzed by computing mean and standard deviation. In order to find out the significant improvement if any, 't' test was applied. 0.05 level of confidence was fixed to test the level of significance. The study revealed that the motor fitness parameters were significantly improved due to the influence of specific training of college level men basketball players.

KEYWORDS: 1. Specific training 2. Motor fitness parameters 3. Speed 4. Explosive power.

INTRODUCTION :

Basketball is one of the dynamic sports games. The player requires the ability to oppose, gain better speed, explosive strength, agility, balance, vertical jump, good movement with the ball and without, the precision throwing the ball into the basket, the performance of technical and tactical tasks, and above all intelligence.

According to **Gabrijelic 1977**, basketball is a complex sport that consists of complex and simple motions in terms of cooperation, collaboration, performed by members of the team in the game (**Blaskivic, 1980**). Basketball is characterised by speed and repeated changes in the direction of activities and movement, especially since May 2000 when the rules were modified (**Delextrat and Cohen 2008**). Basketball is considered an intermittent high intensity sport that requires a well-developed physical fitness to be successfully played (**McInnes et al., 1995**). Authors consider lower-limbs explosive power (**Hoffman et al., 1999 and Hoffman and Maresh 2000**) and aerobic fitness (**Stapff 2000**) as main factors in basketball physical performance and training. Specifically, a good level of lower-limbs explosive power is considered useful to

perform powerful accelerations and winning jumps during the game (**Tenunbaum et al., 2000**). This is of particular interest to game outcome because most scoring attempts develop very rapidly during the game.

Basketball consists of short bursts of intense activity with rest intervals that may be very brief (Dead ball situations) or prolonged (Timeouts, half times). A typical basketball game lasts about 1 hour 45 minutes. Based on these characteristics, it has been estimated that basketball is 80% anaerobic and 20% aerobic (**Brittenham, 1996**). It has been suggested that of the time spent training, 85% should be devoted to anaerobic training with the remaining 15% of the time devoted to a combination of aerobic and anaerobic training (**Wathan and Roll, 1994**). In addition to this many of the conditioning workouts will include repeated intervals of sprints, defensive shuffles, or any number of other drills designed to improve the lactate tolerance of the athlete. These drills involve high intensity efforts (>100% Vo₂ max) lasting between 10 and 90 seconds with rest intervals proportional to the work intervals (**Reaburn and Jenkins, 1996**). Successful basketball players have highly developed skills, but athletic ability, particularly speed, power and coordination may limit a player from reaching his or her potential (**Brittenham, 1996**).

When designing a program to develop basketball specific speed and agility, the majority of the training should focus on improving the capacity to accelerate the body (**Reaburn and Jenkins, 1996**).

Basketball requires all four species of speed: reaction speed, explosive speed, velocity and skill (**Helin, et al., 1982**). Speed is known to be strongly inherited as part of neuromuscular system and achieving biological structural changes is the easiest during early in the childhood. Because the basic work developing the coordination is done in childhood, it is clear that training in childhood plays a crucial role in speed development. (**Mero 2004**).

It was hypothesized that the effect of specific training on motor fitness parameters of college level men basketball players.

To achieve this purpose of the study thirty college level men basketball were randomly selected from Coimbatore district as subjects. They were divided into two groups. The group I was considered as experimental group and group II was considered as control group. The investigator did not make any attempt to equate the group. The control group was not given any exercise and the experimental group was given specific training for five days per week. The experimental group was given training for the period of 8 weeks of specific training. They understood the purpose of study, all procedures involved, voluntarily accepted to undergo all the training procedures. The evaluated parameters were speed (50 m dash), and explosive power (Vertical jump). The parameters were measured before and after the specific training program.

The core weight training exercises are presses (e.g., bench press, incline press, military press, etc.), pulls (e.g., power clean, squat clean, power snatch, split snatch, high pull), and squats (e.g., squats, step-ups, lunges, leg press, ram rack). Other lifts include rotator cuff exercises, crunches, pull-ups, biceps curls, leg curls, etc. After the first two weeks, add more weight on heavy and moderate days. Interval training might include striding the straights and walking at the turns on a 400-m track or running repeatedly 200-400 meter strides on a track. Basketball may include informal pick-up games or structured practices aimed at developing skills.

Summary of mean and 't' test for the pre and post tests on speed and explosive power of control and experimental groups

Parameters	Group	Test	Mean	Standard	Mean Difference	't' ratio
Speed	Con	Pre	9.50	0.46	0.01	0.43
		Post	9.49	0.45		
	Exp	Pre	9.50	0.46	0.64	3.36*
		Post	8.86	0.59		

Explosive power	Con	Pre	199.13	8.15	10.47	0.86
		Post	188.67	48.43		
	Exp	Pre	221.13	9.22	8.67	4.47*
		Post	229.80	10.05		

* Significance at 0.05 levels

The above table reveals the computation of ‘t’ ratio between mean of pretest and posttest of control and experimental groups on speed and leg explosive power of school level basketball men. The mean values of pre and posttest of speed and explosive power for control group were 9.50 and 9.49 199.13 and 188.67 respectively. Since the obtained ‘t’ ratio 0.43 and 0.86 were lesser than the required table value 2.145. It was found statistically not significant for the degree of freedom 1, and 14 at 0.05 level of confidence.

The mean values of pre and posttest of speed and explosive power for experimental group were 9.50 and 8.86, and 221.13 and 229.80 respectively. Since the obtained ‘t’ ratio 3.36, and 4.47 were greater than the required table value 2.145. It was found statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated the speed and leg explosive power of experimental group improved due to the influence of 8 weeks specific training programme.

Figure – 1
Graphical representation showing the pretest and posttest mean values of Experimental groups and Control group on Speed

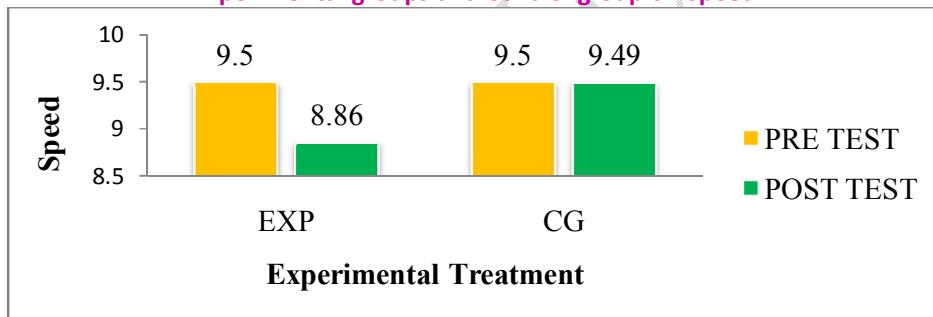
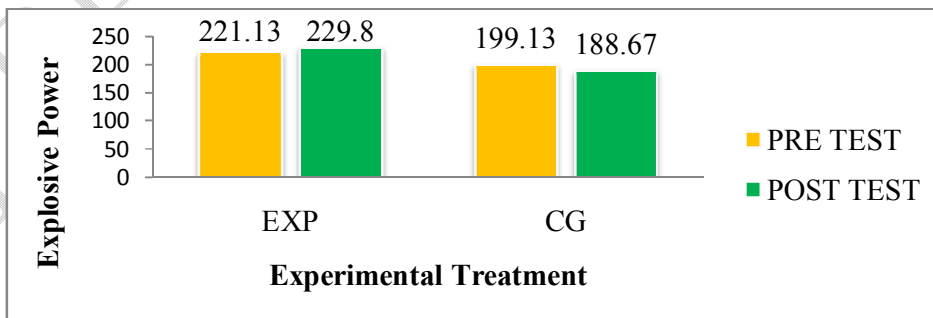


Figure – 2
Graphical representation showing the pretest and posttest mean values of Experimental groups and Control group on Explosive Power



CONCLUSIONS

In light of the results of the study and the limits of the sample and the framework of statistical treatments used, the following conclusions were made.

- It was concluded that eight weeks of specific training program produced significant improvement in speed of college level men basketball players.
- Eight weeks of specific training programme produced significant improvement in explosive power of college level men basketball players.

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