



THE IMPACT OF CORE TRAINING ON SPECIFIC PHYSICAL ATTRIBUTES IN BASKETBALL PLAYERS

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Abstract:

The purpose of the study was to find out the effect of core training on selected physical components among basketball players. To achieve the purpose of the present study, thirty basketball players from Vinayaka Mission University, Salem, Tamil Nadu, were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups at random. Group I acted as Core Training and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The duration of experimental period was 12 weeks. After the experimental treatment, all the thirty subjects were tested on their physical components. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses. It was observed that the 12weeks of experimental group have significantly improved the muscular endurance and muscular strength of basketball players.

Key Words: Core Training, Muscular Endurance, Muscular Strength, Basketball.

Introduction:

Basketball players must possess strength, agility, speed, and coordination because the sport is physically demanding. The muscles of the abdomen, lower back, hips, and pelvis make up the core, which is crucial for transferring force and preserving stability during a variety of sports movements (Kumar, 2019). A common recommendation for enhancing athletic performance and reducing the risk of injury is core strength. For many sports, core strength is a crucial prerequisite. It serves as a brace and source of stability in addition to encouraging proper posture and making everyday tasks like walking and climbing stairs easier. Core training links activities in a "chain" to accomplish technical motion using the sports chain concept. As a result, every bodily part used in the activity is interconnected. Because competitive sports have greater physical demands, athletes need to perform more strenuous core exercises. A common omission from many exercise plans is core stability training for low-load and motor control, which is a crucial part of core stability and core strength training (Lee & Han, 2016).

Methodology:

The purpose of the study was to find out the effect of core training on selected physical components among basketball players. To achieve the purpose of the present study, thirty basketball players from Vinayaka Mission University, Salem, Tamil Nadu, were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups at random. Group I acted as Core Training and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The duration of experimental period was 12 weeks. After the experimental treatment, all the thirty subjects were tested on their physical components. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses.

Results:

Table 1: Computation of Mean and Analysis of Covariance of Muscular Endurance of Experimental and Control Groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	35.67	35.89	BG	11.80	1	11.80	1.76
			WG	187.06	28	6.68	
Post Test Mean	39.34	35.94	BG	820.30	1	820.30	125.92*
			WG	182.40	28	6.514	
Adjusted Post Mean	39.57	35.93	BG	694.92	1	694.92	132.16*
			WG	141.97	27	5.25	

* Significant at 0.05 level Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of muscular endurance of experimental and control groups were 39.57 and 35.93 respectively. The obtained F-ratio of 132.16 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on muscular endurance. The above table also indicates that both pre and post

test means of experimental and control groups differ significantly. The pre, post and adjusted post mean values of muscular endurance of both experimental and control groups are graphically represented in the figure 1.

Figure 1: Shows the Mean Values on Muscular Endurance of Experimental Group and Control Groups

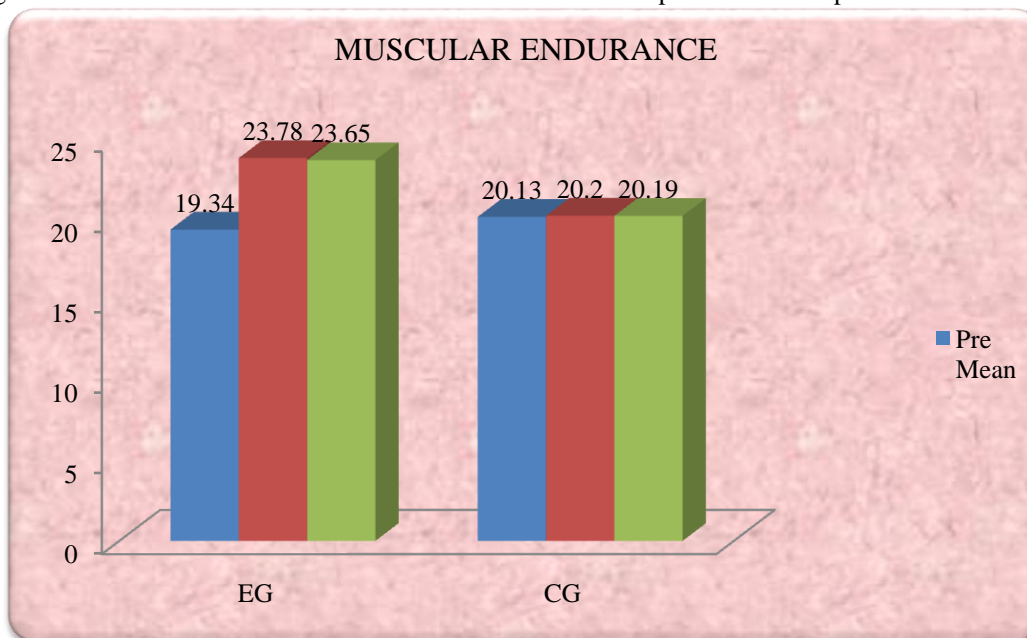


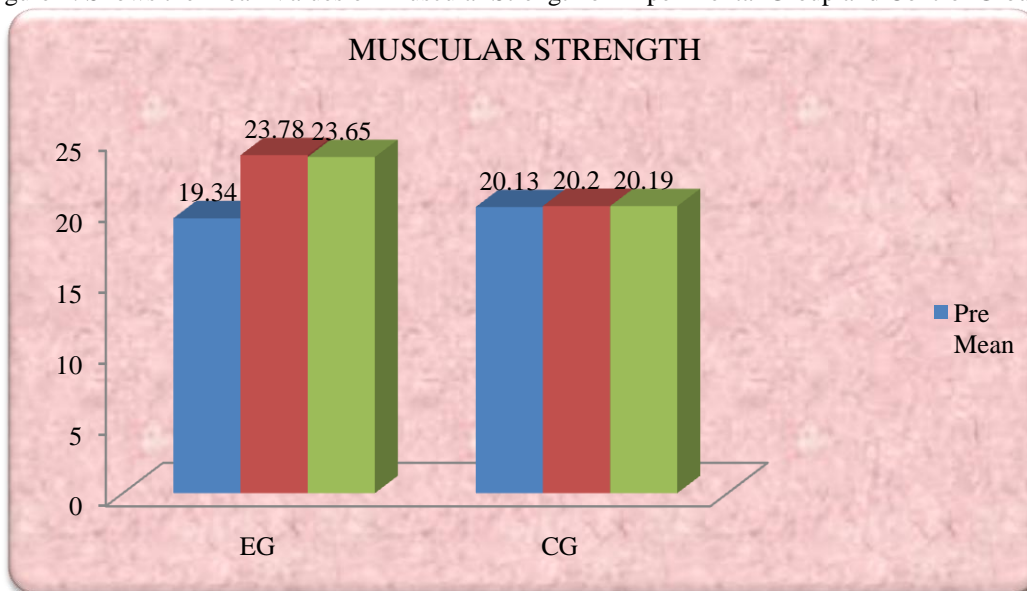
Table 2: Computation of Mean and Analysis of Covariance of Muscular Strength of Experimental and Control Groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	19.34	20.13	BG	1.69	1	1.69	1.35
			WG	34.87	28	1.24	
Post Test Mean	23.78	20.20	BG	5.70	1	5.70	6.12*
			WG	26.04	28	0.93	
Adjusted Post Mean	23.65	20.19	BG	2.80	1	2.80	24.23*
			WG	3.12	27	0.11	

* Significant at 0.05 level, Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of muscular strength of experimental and control groups were 23.65 and 20.19 respectively. The obtained F-ratio of 24.23 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on muscular strength. The above table also indicates that both pre and post test means of experimental and control groups differ significantly. The pre, post and adjusted post mean values of both experimental and control groups are graphically represented in the figure 2.

Figure 2: Shows the Mean Values on Muscular Strength of Experimental Group and Control Groups



Conclusion:

From the results obtained, the following conclusions were drawn:

- It was observed that the 12weeks of experimental group have significantly improved the muscular endurance of basketball players.

- It was observed that the 12weeks of experimental group have significantly improved the muscular strength of basketball players.

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