IMPACT OF CORE TRAINING ON SPEED AMONG SOCCER PLAYERS

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Abstract

The purpose of the study was to find out the impact of core training on speed among soccer players. To achieve the purpose of this study, 20 male soccer players were randomly selected as subjects from Mother Teresa College of Physical Education, Pudukkottai, Tamilnadu, India. Their age ranged from 22 to 24 years. The selected participants were randomly divided into two groups such as Group 'I' underwent core training (n=10) and Group 'II' acted as control group (n-10). Group 'I' underwent core training for five days and one session per day and each session lasted for 30 minutes for six week period. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on speed were collected and administering by 50m dash. The pre and posttests data were collected on selected criterion variables prior to and immediately after the training programme. The pre and post-test scores were statistically examined by the dependent't' test and Analysis of co-variance (ANCOVA) for each and every selected variables separately. It was concluded that the core training group had shown significantly improved in speed. However the control group had not shown any significant improvement on selected variables such as speed.

Keywords: *Core training, soccer, speed.*

1. Introduction

Soccer has had a significant place in many societies, and become an indispensable part of our daily life. However, the high interest of people on this sport accompanies competition element. Pursuant to the competition element, the thought that soccer players come to one step ahead of their rivals reveals the importance of various training exercises improving sport performance and accordingly their different applications. The main factor affecting soccer players' performance is physical features because physical characteristics have an important place on demonstrating physiological capacity. As physical characteristics become an integral part of demonstrating performance elements such as strength, speed, endurance, and quickness, they are also significant components in practicing high sport performance . Soccer is also a branch of sport where there are; fast strength, sprints, jumps, tackles and locomotor movements. Soccer is a high level performance sport where all bio motor skills are affected that require aerobic and anaerobic strength and that includes physical performance such as "agility, speed, strength and power**".** Core training has positive effects on developing power and condition. Many researchers found that core training has positive effects on sportive performance **[3].** Core area is composed of muscle groups that require cooperation of upper and lower extremities by supporting each other. Core training on the other hand is the combination of movements to support development of major and minor muscle groups . Core exercises are training exercise programs which soccer players practice through their own body weight or assistive tools and which aim the development of central muscles' strength that balance posture **[5].** Core practices include buttocks, back, and abdominal muscles. These muscles play important roles on transferring power between lower and upper extremities. Additionally, they help in making the aimed move easier and strongly **[6].** Speed is an important performance component in soccer as it is in many branches of sport. It is thought that; acceleration, maximal speed and agility features have common specifications such morphological and biochemical determinants as muscle fibril type that is related to speed and agility at a great extent. Speed and agility among conditions and features of soccer players play a significant role in determining sportive performance. In order to improve these skills, it is thought that specific activities should be put into practice. In order for players to conduct the combined movements (with / without opponent, with / without ball) in optimal levels, it is necessary to develop their speed and agility performances. Thus, this study is important for the reason that it is applied for a period of 8 weeks in core training to improve speed and agility performances of the players.

2. Purpose of the study.

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3. Methodology

The purpose of the study was to find out the impact of core training on speed among soccer players. To achieve the purpose of the study twenty male soccer players were randomly selected from Mother Teresa College of Physical Education, Pudukkottai, Tamilnadu, India. Their age ranged from 22 to 24 years. The researcher reviewed the available scientific journals, periodical, magazine, e-resources and research paper. Taking into consideration feasibility criteria, availability of the instrument and relevance of the variable of the present study the following dependent variables namely speed were selected. Similarly core training was chosen as independent variable. The speed was assessed by 50m dash respectively.

This study was conducted to determine the possibility cause and the impact of core training on speed among soccer players. The subjects were divided into two equal group consists of 10 each and named as experimental group (Group-I) and control group (Group-II). Group-I (n=10) underwent core training and Group II (n=10) acted as control group. The control group was not given any treatment and the experimental group was given core training for five days per week, for a period of six weeks. The related group research design was used in this study. Training program is applied for a period of 30 minutes in five days additionally to the weekly program. Some core exercises are arranged from easy to difficult and distributed to the weeks by applying fluctuating method. The exercises are Jump squat, alternate legs jump, fore arm plank, side plank. Squat lunge, twist the trunk with medicine ball etc. The collected data from the two groups prior to and after the experimental treatment on speed are statistically analyzed by using the statistical technique of dependent 't' test and analysis of covariance (ANCOVA). In all the cases 0.05 level of confidence was fixed as a level of confidence.

4. Result and Findings

The impact of core training on speed were analyzed and presented below.

4.1 Speed

TABLE- I

COMPUTATION OF 't' - RATIO BETWEEN PRE AND POST TEST MEANS OF CORE TRAINNG AND CONTROL GROUPS ON SPEED (IN SECONDS)

Group	Test	Mean	Standard Deviation	t-ratio
Experimental Group	Pre test	7.77	0.19	11.56*
	Post test	7.43	0.14	
Control Group	Pre test	7.79	0.20	1.13
	Post test	7.71	0.18	

*****Significant at 0.05 level. (Table value required for significance at .05 level for 't'-test with df 9 is 2.26)

The table-I shows that the pre-test mean value of core training and control groups are 7.77 and 7.43 respectively and the post test means are 7.79 and 7.71 respectively. The obtained dependent t-ratio values between the pre and post test means of core training and control groups are 11.56 and 1.13 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of core training group was greater than the table value, it is understood that core training group had significantly improved on speed. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

TABLE-II

ANALYSIS OF COVARIANCE ON SPEED OF CORE TRAINNG AND CONTROL GROUPS

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F–ratio
Experimental Group	Control Group	Between	5.19	1	5.19	73.14*
7.42	7.71	Within	1.19	17	0.07	

* Significant at 0.05 level. Table value for df 1, 17 was 4.45

Table-II shows that the adjusted post test means values on speed. The obtained f- ratio of 74.14 for adjusted post test mean is greater than the table value 4.45 with df 1 and 17 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of core training and control groups on speed. The bar diagram shows the mean values of pre, post and adjusted post tests on speed of core training and control group.

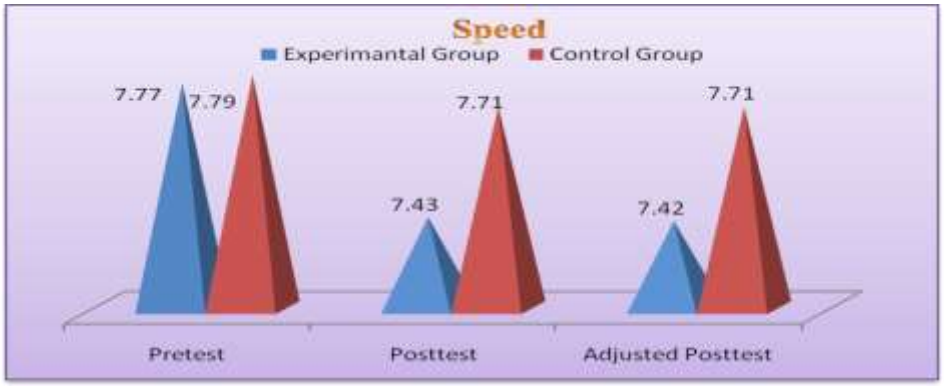

FIGURE-I: PRE, POST AND ADJUSTED POST TESTS MEAN VALUES OF CORE TRAINING AND CONTROL GROUPS ON SPEED**.**

5. Discussion on Findings

Mays, S., & Davis, J. (2001) concluded the study on effect of core training on functional performance in swimming and this study concluded that there was a significance improvement on speed, agility and explosive power. From the help of this supportive study, I conducted this study the result of the my study indicates that there was a significant improvement on speed due to the impact of core training on speed among soccer players when compared to control group.

6. Conclusions

1. There was significant improvement on speed due to the impact of core training on speed among soccer players.
2. However the control group had not shown any significant improvement on any of the selected variables.

7. References

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