

EFFECT OF SPRINT TRAINING ON SPEED AND AGILITY AMONG SOCCER PLAYERS

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Abstract: The purpose of the study was to find out the effect of sprint training on speed and agility among soccer players. To achieve the purpose of this study, 20 men soccer players were randomly selected as subjects from the M.D.T. Hindu College, Tirunelveli, Tamilnadu, India. Their age ranged from 18 to 25 years. The selected participants were randomly divided into two groups such as Group 'A' speed training (n=10) and Group 'B' acted as control group (n=10). Group 'A' underwent speed training for three days per week and each session lasted for an hour for six week period. Control group was not exposed to any specific training but they were participated in regular activities. The data on speed and agility were collected by administering by standardized test items such as 50 mts dash and 6x10m shuttle run tests respectively. The pre and post tests data were collected on selected criterion variables prior to and immediately after the training program. The pre and post-test scores were statistically examined by the Analysis of Co-Variance (ANCOVA) for selected variables. It was concluded that the sprint training group had shown significantly improved in speed and agility. However the control group had not shown any significant improvement on any of the selected variable such as speed and agility.

Index Terms: *Sprint Training, Speed, Agility, Soccer Players*

I. INTRODUCTION

Soccer is one of the most popular sports among children and youth worldwide, with an increasing number of young players. Soccer is an anaerobic sport that consists of rapid bursts of activity followed by short periods of rest. To be successful, a soccer player must have pure sprinting speed but also the ability to cut other players and make tackles, which requires agility. Speed and agility are best developed during the off-season so players start the competitive period as well prepared as possible [1]

The importance of sprinting in professional soccer is well established and the need for speed is clear. Speed and agility in team sports represent complex psychomotor skills. They involve moving the body as rapidly as possible, but agility has the added dimension of changing direction. Speed is classically defined as the shortest time required for an object to move along a fixed distance, which is the same as velocity, but without specifying the direction [2]. Among the different physical qualities needed are the ability to perform straight-line sprint and positive and negative acceleration with rapid changes of directions, often referred to as agility [3].

Soccer players, as well as many other athletes on the field and the court, execute multiple sprints during the course of a match. Performance in soccer depends upon a variety of individual skills and the interaction among different players within the team [4].

Technical and tactical skills are considered to be predominant factors, but physical capabilities must also be well developed in order to become a successful player. During the last decade, the focus in soccer-related research literature has shifted from aerobic to anaerobic demands. Recent studies suggest that elite or professional players have become faster over time, while aerobic capacity has plateau or decreased slightly [5].

The ability to sprint, accelerate and decelerate alongside change of direction is commonly known as agility. Agility has been, indeed, defined as a rapid whole-body movement with change of velocity or direction in response to a "stimulus" [6]

Agility is an essential component in most field requiring high speed action (acceleration, maximal speed) and specially team sports competition. And agility is a combination of speed and coordination. Speed which provides movements, the speed and coordination is an elementary technical demand for sportive performance in football [7]

II. PURPOSE OF THE STUDY

The purpose of the study was to investigate the effect of sprint training on speed and agility among soccer player.

III. METHODOLOGY

To achieve the purpose of this study, 20 men soccer players were randomly selected as subjects from the M.D.T. Hindu College, Tirunelveli, Tamilnadu, India. Their age ranged from 18 to 25 years. The selected participants were randomly divided into two groups such as Group ‘A’ Sprint Training (n=10) and Group ‘B’ acted as control group (n=10). Group ‘A’ underwent Sprint training three days per week and each session lasted for an hour for six week period. However, control group was not exposed to any specific training but they participated in the regular schedule. The data on speed and agility were collected by administering by standardized test items such as 50 mts dash and 6x10m shuttle run tests respectively. The pre and post tests data were collected on selected criterion variables prior to and immediately after the training program. The pre and post-test scores were statistically examined by dependent ‘t’ and Analysis of Co-Variance (ANCOVA) for selected variables. The level of significance was fixed at .05 level of confidence, which was considered as appropriate.

IV. ANALYSIS OF DATA

4.1 Speed

Table 1
Means and dependent ‘t’-test for the pre and post tests scores of experimental and control groups on speed

Group	Test	Mean	Standard Deviation	t-ratio
Sprint Training Group	Pre test	7.47	0.15	9.21*
	Post test	7.22	0.11	
Control Group	Pre test	7.49	0.14	1.08
	Post test	7.43	0.16	

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

From the table 1 the dependent ‘t’-test values of Speed between the pre and post tests means of experimental groups were greater than the table value 2.26 with df 9 at .05 level of confidence, it is understand that the experimental group had significant improvement on speed when compared to control group.

4.2 Computation of Analysis of Covariance

The descriptive measures and the results of analysis of covariance on the criterion measures were given in the following tables.

Table-2
The adjusted post test and analysis of variance (ANCOVA) scores of experimental and control groups on speed

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F – ratio
Speed Training Group	Control Group	Between	4.41	1	4.41	73.58*
7.21	7.43	Within	1.02	17	0.06	

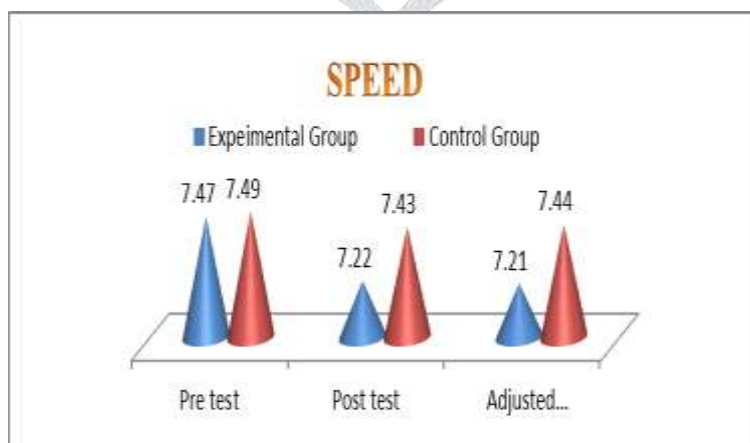


Figure 1: Pretest, post test and adjusted post test mean values of experimental group and control group on speed.

4.3 Agility

Table 3
Means and dependent 't'-test for the pre and post tests scores of experimental and control groups on agility

Group	Test	Mean	Standard Deviation	t-ratio
Speed Training Group	Pre test	19.47	0.59	15.23*
	Post test	19.34	0.52	
Control Group	Pre test	19.51	0.62	2.08
	Post test	19.48	0.61	

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

From the table I the dependent 't'-test values of agility between the pre and post tests means of experimental groups were greater than the table value 2.26 with df 9 at .05 level of confidence, it is understand that the experimental group had significant improvement on agility when compared to control group.

4.4 Computation of Analysis of Covariance

The descriptive measures and the results of analysis of covariance on the criterion measures were given in the following tables.

Table-4
The adjusted post test and analysis of variance (ANCOVA) scores of experimental and control groups on agility

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F - ratio
Speed Training Group	Control Group	Between	4.25	1	4.25	35.42*
19.32	19.47	Within	2.04	17	0.12	

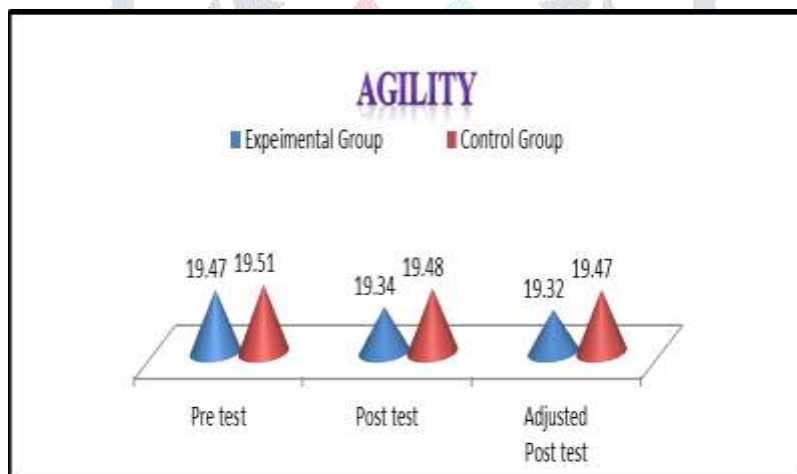


Figure 2: Pre test, post test and adjusted post test mean values of experimental group and control group on agility

V. DISCUSSION ON FINDINGS

This study was concluded that the significant improvement on speed and agility due to the effect of sprint training among men soccer players when compare than the control group.

Arumugam, S (2015) indicated that there was a significant improvement on speed and agility due to the effect of small sided games training among soccer players when compared to control group.

Mathisen Gunnar & Svein (2015) contacted this study was to investigate the effects of short burst speed and change of direction exercises on sprint and agility performance in youth female soccer players .The concluded this results established that a training program of short burst high speed exercises improve linear sprint and agility performance in youth female soccer players, beyond the gain of traditional soccer training consisting of small-sided games.

Azmi, K & Kusnanik, (2018) aimed to analyze the effect of speed, agility and quickness training program to increase in speed, agility and acceleration. The results showed: that there was a significant effect of speed, agility and quickness training program in improving in speed, agility and acceleration. In summary, it can be concluded that the speed, agility and quickness training program can improve the speed, agility and acceleration of the soccer players

VI. CONCLUSIONS

1. There was significant improvement on speed due to the effect of sprint training among men soccer players.
2. There was significant improvement on agility due to the effect of sprint training among men soccer players.
3. However the control group had not shown any significant improvement on any of the selected variables.

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