International Journal of Physical Education, Exercise and Sports
Online ISSN: 2664-9896; Print ISSN: 2664-9888
Received: 03-11-2018; Accepted: 05-12-2018; Published: 05-01-2019
www.physicaleducationjournal.com
Volume 1; Issue 1; 2019; Page No. 10-13

Effects of combination of assisted and re assisted sprint training on agiity among male football players

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Abstract
The aim of the study is to find out the "effects of combination of assisted and resisted sprint training on agility among male soccer players." to achieve this purpose of the study, sixty college male soccer players from Guntur District, were selected as subjects at random. The age of the subjects ranged from 14 to18years. The selected subjects were divided into three experimental groups and a control group. Group -1 performed Assisted Sprint Training (AST) Group - 2 performed Resisted Sprint Training (RST), Group - 3 performed Combined Assisted and Resisted Sprint Training (AST&RST) and Group - 4 served as control participants (GP). The agility was selected as criterion variable. All the subjects of four groups were tested on agility at prior and immediately after the program of Six weeks. ANCOVA was used to find out significant adjusted posttest mean difference of four groups on agility. Scheffe's post hoc test was used to find out pair-wise comparisons between groups on agility. The results of the study revealed that agility performance of the male soccer players significantly differ, due to the Six weeks of selected training programme.

Keywords: assisted sprint, resisted sprint, agility, shuttle run, ancova

Introduction

Soccer has become a very popular game in the world. Almost all the nations play the game for the enjoyment and competition. Modern Soccer is very fast by its nature. Playing Soccer is a form of intermittent exercise consisting of repeated short bouts it high intensity exercise interspersed with periods of running at different speeds, walking and standing still, almost each player only performs high-intensity exercise for a relatively small percentage of the total game time. The aim of sprinting at full speed is to maintain, for long as possible, this speed. Speed can be developed only by sprints of three to five seconds in duration. This means covering 20 to 40 meters as the ATP reserves do not last any longer in maximum effort. Assisted Sprint Training :Assisted or super maximal sprint training includes gravity assisted modalities, such as downhill sprinting and external tools such as high speed towing using a harness or stretch tubing and parachute release while at a maximum speed. Resisted Sprint Training: Resisted sprint training (RST) includes gravity – resisted modalities, such as uphill or upstairs sprinting and modalities designed to create an overload effect such as the parachute, sled, harness, or weighted vest. In this study an attempt is made to find out the "effects of combination of assisted and resisted sprint training on agility among male soccer players

Methodology

Selection of Subjects: Sixty College male football players from sattenapalli, Guntur District.A.P, were select's subjects at random. The age of the subjects ranged from 14 to18years. Experimental Design: The selected subjects were divided into three experimental groups and a control group. The data was collect for all the groups on agility by using the shuttle run test, the units of the measurements was in seconds. The data were collected from the four groups before and after the training program. Training Programme: The control group was not exposing to any specific training. However, they participating in their regular soccer practice. The experimental groups 1, 2 and 3 were subjected to nine weeks of assisted resisted and combined training respectively.
Then training was given for five days per week. Every training session lasted for 60 to 90 minutes. The training program was scheduled for the morning between 6.30 am and 8.00 am.

Experimental Group 1: assisted sprint training (AST)

Drills	Repetition	Set	Recovery in Between each drills	Recovery in between
(1-3Weeks)				
Partner assisted Let-Go's	10m x 5	5	2 Min	3 Min
Partner tubing – assisted acceleration drill	10m x 5	5		
Towed running	10m x 5	5		
"With the wind" speed runs	10m x 5	5		
Partner tubing assisted speed runs	10m x 5	5		
(4-6 Weeks)				
Partner assisted Let-Go's	10m x 7	3	2 Min	5 Min
Partner tubing – assisted acceleration drill	10m x 7	3		

Towed running	10m x 7	3		
"With the wind" speed runs	10m x 7	3		
Partner tubing assisted speed runs	10m x 7	3		
(7-9 Weeks)				
Partner assisted Let-Go's	10m x 10	2	2 Min	5 Min
Partner tubing – assisted acceleration drill	10m x 10	2		
Towed running	10m x 10	2		
"With the wind" speed runs	10m x 10	2		
Partner tubing assisted speed runs	10m x 10	2		

Experimental group 2: resisted sprint training (RST)

Drills	Repetition	Set	Recovery in between each drills	Recovery in between set
1-3 Weeks				
Partner Resisted Starts	10m x 5	5	2 Min	3 Min
Weighted Starts	10m x 5	5		
Sand running	10m x 5	5		
Light sled/Tire pulls	10m x 5	5		
Stadium stairs	10m x 5	5		
4-6 Weeks				
Partner Resisted Starts	10m x 7	3	2 Min	5 Min
Weighted Starts	10m x 7	3		
Sand running	10m x 7	3		
Light sled/Tire pulls	10m x 7	3		
Stadium stairs	10m x 7	3		
7-9 Weeks				
Partner Resisted Starts	10m x 10	2	2 Min	5Min
Weighted Starts	10m x 10	2		
Sand running	10m x 10	2		
Light sled/Tire pulls	10m x 10	2		
Stadium stairs	10m x 10	2		

Experimental group 3: combination of assisted sprint training and resisted sprint training

Drills	Repetition	Set	Recovery in between each drills	Recovery in between set
Assisted Sprint Training - AST (1-3 Weeks)				
Partner assisted Let- Go's	5m x 5	5		
Partner tubing – assisted acceleration drill	5m x 5	5	2 Min	3 Min
Towed running	5m x 5	5		
"With the wind" speed runs	5m x 5	5		
Partner tubing assisted speed runs	5m x 5	5		
Resisted Sprint Training - RST (1-3 Weeks)				
Partner Resisted Starts	5m x 5	5	2 Min	3 Min
Weighted Starts	5m x 5	5		
Sand running	5m x 5	5		
Light sled/Tire pulls	5m x 5	5		
Stadium stairs	5m x 5	5		
Drills	Repetition	Set	Recovery in between each drills	Recovery in between set
Assisted Sprint Training - AST (4-6 Weeks)				
Partner assisted Let- Go's	5m x 7	3		
Partner tubing – assisted acceleration drill	5m x 7	3	2 Min	5 Min
Towed running	5m x 7	3		
"With the wind" speed runs	5m x 7	3		
Partner tubing assisted speed runs	5m x 7	3		
Resisted Sprint Training - RST (4-6 Weeks)				
Partner Resisted Starts	5m x 7	3		
Weighted Starts	5m x 7	3		

Results and Discussion

Table 1: Analysis of covariance on agility of different groups (Scores in Seconds)

Test	Grou p 1(AST)	Group 2 (RST)	Group3 (AST+RST	Group4(CG)	SV	SS	Df	MS	'F' Ratio
Pre-Test									
Mean	6.51	6.55	6.48	6.50	Between	0.0352	3	0.0117	2.11
S.D.	0.08	0.06	0.08	0.08	Within	0.3107	56	0.0055	
Post Test									
Mean	6.17	6.19	6.05	6.48	Between	1.4793	3	0.4931	71.17*
S.D.	0.07	0.12	0.05	0.07	Within	0.3880	56	0.0069	
Adjusted Post Test									
Mean	6.17	6.18	6.06	6.48	Between	1.4741	3	0.4914	70.50*
					Within	0.3834	55	0.0070	

* Significant at.05 level of confidence.

Results on Agility

Pre - Test: The AM± SD pretest Agility scores of G1, G2, G3and G4 were 6.51 ± 0.08, 6.55 ± 0.06, 6.48 ± 0.08 and 6.50 ± 0.08 respectively. The obtained pre test F value of 2.11 was lesser than the required Table F value of 2.76. Hence the pre test means value of assisted sprint, resisted sprint and combined assisted and resisted and control group on agility before start of the respective treatments were found to be insignificant at 0.05 level of confidence for the degrees of freedom 3 and 56. Thus this analysis confirms that the random assignment of subjects into four groups were successful. Post - Test: The AM± SD post- test Agility scores of G1, G2, G3and G4 are 6.17 ± 0.07, 6.19 ± 0.12, 6.05 ± 0.05 and 6.48 ± 0.07 respectively. The obtained post test F value of 71.17 was greater than the required Table F value of 2.76. Hence the post- test means value of agility show significant at 0.05 level of confidence for the degrees of freedom 3 and 56. Thus the results obtained proved that the interventions namely assisted sprint, resisted sprint and combined assisted and resisted sprint on agility produced significantly different improvements among the four groups. Adjusted Post - Test: The adjusted post - test Agility scores of G1, G2, G3 and G4 are 6.17, 6.18, 6.06 and 6.48, respectively. The obtained adjusted post - test F value of 70.50 was greater than the required Table F value of 2.76. Hence the post - test means value of agility show significant at 0.05 level of confidence for the degrees of freedom 3 and 55. Since the observed F value on adjusted post test mean among the groups such as assisted sprint, resisted sprint and combined assisted and resisted sprint on agility produced significantly different improvements among the four groups. In order to find out which intervention programme used in the present study was the source for the significance of adjusted means was tested by Scheffe's post hoc test. The results of the same are presented in the table - I (a)

Table 1(a): Scheffe's post hoc test mean differences on agility among four groups (Scores in Seconds)

Group I (AST)	Group II (RST)	Group III (AST+RST)	Group IV (CG)	Mean Differences	Confidence Interval Value
6.17	6.18	-	-	0.01	0.11
6.17	-	6.06	-	0.12*	0.11
6.17	-	-	6.48	0.31*	0.11
-	6.18	6.06	-	0.13*	0.11
-	6.18	-	6.48	0.30*	0.11
-	-	6.06	6.48	0.42*	0.11

* Significant at.05 level of confidence.

From Table III (a) shows the significant difference of paired adjusted post-test means of assisted sprint, resisted sprint, combined assisted and resisted sprint and Control group on Agility. The obtained mean differences between assisted sprint group and resisted sprint groups were 0.01.No differences were found on these comparisons, because of the confidential values 0.11 was greater than the mean differences. Remaining all group comparisons was greater than the confidential interval value on Agility.

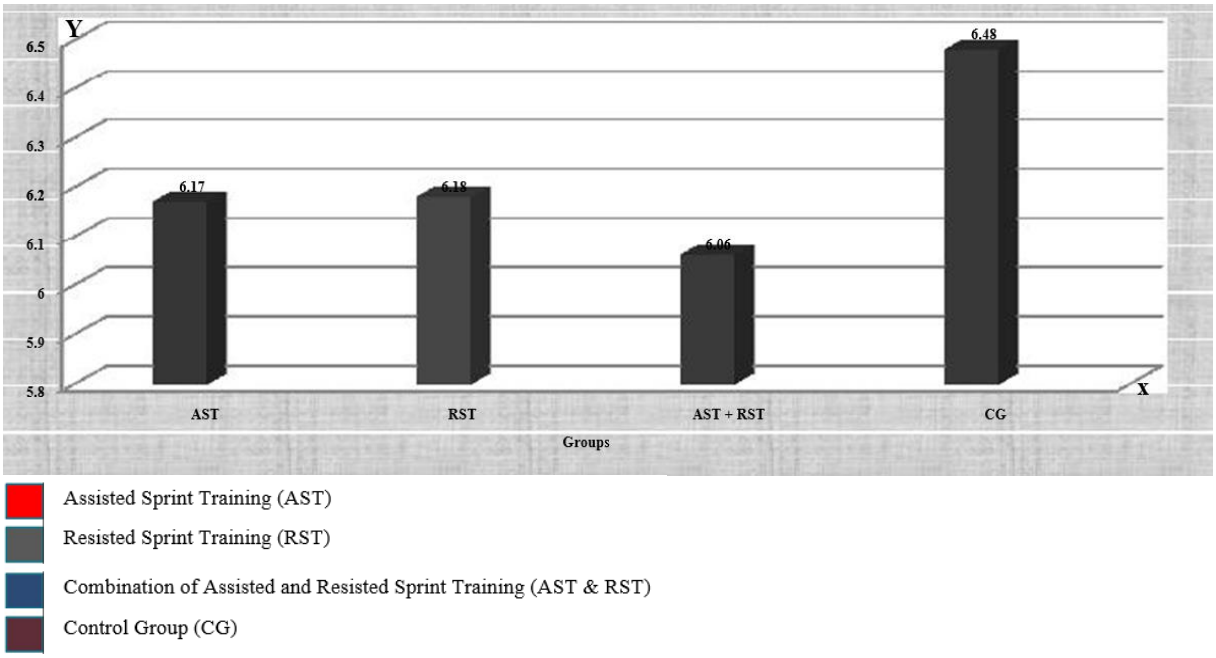

Fig 1: The adjusted post-test mean values of different groups on agility

Conclusions

There was a significant difference among the different sprint trainings and control group on agility. Significant improvement was noticed on agility, due to three method of sprint training program among male soccer players.

1) The three experimental training groups namely, assisted sprint training (AST)resisted sprint training (RST) and combined assisted and resisted sprint training significantly improved on agility of the male soccer players.
2) Combined sprint training (AST&RST) has greater influenced on agility of male soccer players than the other groups.
3) Resisted sprint training (RST) training has the next best and assisted sprint training has the least influence. There was no development on agility of control group.

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