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Effect of Varied Training Programme on Selected Speed and Agility Parameters among Football Players

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Abstract

The purpose of this present study was to investigate the effect of varied training programme on selected speed and agility among football players. To achieve this purpose of the study forty five (N=45) football players were selected from Madras University affiliated College, Chennai, Tamil Nadu state, India, during the year 2016-17. The subject's age ranges from 18 to 23 years. The selected subject were divided into three equal groups consists of fifteen subject each namely two experimental groups and control group from college students. The experimental group I underwent Plyometric training group (PTG) and experimental group II underwent Resistance training group (RTG) programme for twelve weeks. The control group was not taking part in any exercise during the course of the study. The dependent variable selected for the study were speed measure by 50mts dash and agility measure by Hexagonal Obstacle Test was used .Pre-test was taken before the exercise period and post- test was measured immediately after the twelve weeks training period. The data collected from the three groups were statistically analyzed for significance, the analysis of covariance (ANCOVA) was used and the F ratio was found out. The Scheffe's test is applied as post-hoc test to determine the paired mean differences. The level of significance will be fixed at .05 level of confidence for all the cases.

Keywords: Plyometric Training, Resistance Training, Speed and Agility.

Introduction

Sport training is scientifically based and pedagogical process of sports perfection which through systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsmen to high and highest performance (Harre-1981). Plyometric refers to exercises that allow the muscle to contract eccentrically before explosive contraction which enable the muscle to reach maximum explosive strength in a shortest period of time. The training aims at linking strength with speed to produce power. In this training the body weight of an athlete is used as resistance. All the forms of jumping exercises, wall bar exercises, pull-ups, skipping, rope climbing, sit-ups, etc. are the various forms of Plyometric exercises. Since Plyometric put great stress on the muscular-skeletal system, it is better to practice after developing the basic strength through weight training. Resistance training is a "specialized method of conditioning designed to increase muscle strength, muscle endurance and muscle power". Resistance training can be performed in a variety of ways; with resistance machines, free-weights (dumbbells and barbells), rubber tubing, or own body weight, as in doing pushups, squats, or abdominal crunches.

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According to medical research, generally the resistance training strengthens the muscular system, strengthens the skeletal system, improves the bone density (decreases the chance of osteoporosis) and increases metabolism. So a well -planned resistance training program should be a part of everyone's health, fitness and lifestyle regardless of age, gender or goals. In particular, resistance training improves the functional performance of the neuromuscular system, the system of muscles and nerve pathways that directs and controls movement. Resistance training produces increased strength, superior movement performance and general fitness, including enhanced function of the respiratory, cardiac and metabolic systems. Other improvements include an increase in muscle mass, strengthening of connective tissue and supportive tissue as well as improvements in posture and physique.

Methodology

Forty five football players of age 18 to 23 years from Madras University affiliated College, Chennai, Tamil Nadu were selected as subjects at random to undergo the training. They were divided into three groups namely Plyometric training group (Experimental group I), Resistance training group (Experimental group II), and control group (group III) each consists of 15 subjects. The experimental groups (I & II) were subjected to twelve weeks of Plyometric training and resistance training respectively, and the group III acted

as control. The experimental groups I Plyometric training group performed 9 drills namely bounds, hurdle hoping, single leg hoping, box jump, depth jump, power drop, two legged hop, Inclined Pushups and Skipping. The experimental groups II Resistance training group performed 8 drills namely two arm curl, triceps extension, military press, peck-deck, abdominal crunches, hip abduction, leg curl and half squat (alternate 2 exercises, do 12, 10, 8 reps each) and the load given were progressively increased from 50%, 60%, 70% intensity exercise drills respectively for one hour per day for three days a week for a period of twelve weeks. The subjects of all the three groups were tested on speed and agility prior to and after the training period. To ascertain speed and agility of the subjects, 50 Mts dash test was used and accordingly mean value count by seconds and Hexagonal Obstacle Test was used and accordingly mean value count by seconds.

Results and Discussion

Table I. Analysis of Covariance for the Pre, Post and Adjusted Post Test Means Values for Plyometric training, Resistance training group and Control group on Speed and Agility (Speed mean value measure by 50Mts Dash in Seconds &Agility mean value measure by Hexagonal Obstacle Test in Seconds)

Variable name	Test	Plyometric Training group	Resistance Training group	Control group	Source of Variance	Sum of Square	df	Mean square	'F' ratio
Speed	Pre test	7.783	7.77	7.787	Between	.001	2	.001	0.004
					Within	6.799	42	.162	
	Post test	7.356	7.388	7.814	Between	1.961	2	.981	6.55*
					Within	6.286	42	.150	
	Adjusted post test	7.351	7.394	7.813	Between Set	1.955	2	.977	32.79*
					Within Set	1.232	41	.030	
Agility	Pre test	18.077	16.08	17.938	Between	.198	2	.099	0.79
					Within	52.572	42	1.252	
	Post test	15.926	16.194	17.956	Between	36.477	2	18.238	16.61*
					Within	46.114	42	1.098	
	Adjusted post test	15.913	16.181	17.982	Between Set	37.825	2	18.913	18.42*
					Within Set	42.087	41	1.027	

***Significance at 0.05 level of confidence*

Table value required for significant at 0.05 level with df 2 and 42 , 2 and 41 are 3.22 and 3.23 respectively.

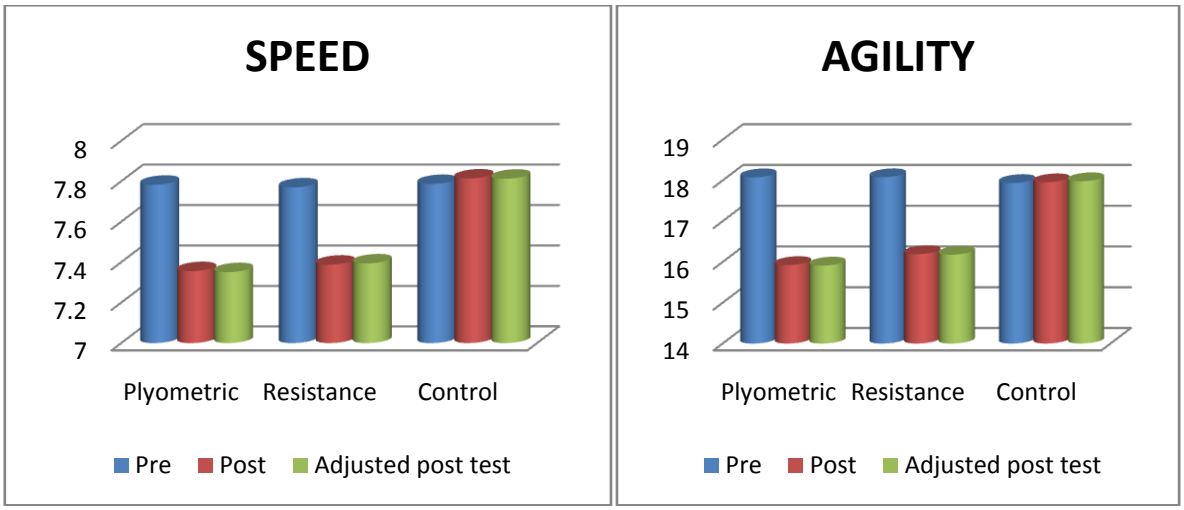
The statistical analysis from the table.1 shows that the pre-test means of Plyometric training group, Resistance training group and control group are 7.783, 7.77 and 7.787 respectively. The obtained F ratio 0.04 for pre-test is lesser than the table value of 3.22 for df 2 and 42 required for significance at 0.05 level. The post-test means of Plyometric training group, Resistance training group and control group are found 7.356, 7.388 and 7.814 respectively. The obtained F ratio 6.55 for post-test is greater than the table value of 3.22 for df 2 and 42 required for significance at 0.05 level. zhe adjusted post-test means of Plyometric training group, Resistance training group and control group are 7.351, 7.394 and 7.813 respectively. The F ratio obtained for adjusted post-test 32.79 is also greater than the table value of 3.23 for df 2 and 41 required for significance at 0.05 level. The statistical analysis from the table.1 shows that the pre-test means of Plyometric training group, Resistance training group and control group are 18.077,18.08 and 17.938 respectively. The obtained F ratio .079 for pre-test is lesser than the table value of 3.22 for df 2 and 42 required for significance at 0.05 level. The post-test means of Plyometric training group, Resistance training group and control group are found 15.926, 16.194 and 17.956 respectively. The obtained F ratio 16.61 for post-test is greater than the table value of 3.22 for df 2 and 42 required for significance at 0.05 level. The adjusted post-test means of Plyometric training group, Resistance training group and control group are 15.913, 16.181 and 17.982 respectively. The F ratio obtained for adjusted post-test 18.42 is also greater than the table value of 3.23 for df 2 and 41 required for significance at 0.05 level.

Table II. Scheffe's Test for the Difference between the Adjusted Post Test Paired Means on speed and agility of football players

Variables	Plyometric Training group	Resistance Training group	Control group	Mean Difference	C.I value
Speed	7.351	7.394	-	0.04	0.12
	7.351	-	7.813	0.46*	
	-	7.394	7.813	0.42*	
Agility	15.913	16.181	-	0.27	0.46
	15.913	-	17.982	2.07*	
	-	16.181	17.982	1.8*	

From the table it can be seen that the mean difference between Plyometric training group and resistance training group was 0.04 P<0.05) and the calculated C.I value was 0.12 (P>0.05). The mean difference between Plyometric training group and the control group was 0.46* (P>0.05) and the calculated C.I value was 0.12 (P< 0.05). The mean difference between the Resistance training group and control group was 0.42* (P>0.05) and the calculated C.I value was 0.12 (P<0.05). The dependent variable were that it can be clearly noticed that Plyometric training group responded to the training with more positive influences of speed when compared with the resistance training group and control group. The resistance training group responded better when compared with the Control group. From the table it can be seen that the mean difference between Plyometric training group and resistance training group was 0.27 P<0.05) and the calculated C.I value was 0.46 (P>0.05). The mean difference between Plyometric training group and the control group was 2.07* (P>0.05) and the calculated C.I value was 0.46 (P< 0.05). The mean difference between the Resistance training group and control group was 1.8* (P>0.05) and the calculated C.I value was 0.46 (P<0.05). The dependent variable were that it can be clearly noticed that Plyometric training group responded to the training with more positive influences of agility when compared with the resistance training group and control group. The resistance training group responded better when compared with the Control group.

Figure I. Cylinder diagram ordered mean values of Speed and Agility



Conclusion

After completion of all work following conclusions were draw by the researcher:

1. Plyometric training group was possessed greater speed than the Resistance training group and control group.
2. Resistance training group was possessed greater speed than the control group.
3. Plyometric training group was possessed greater agility than the Resistance training group and control group.
4. Resistance training group was possessed greater agility than the control group.

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