



Effect of Progressive, Fluctuated and Regressive Resistance Training on Flexibility Among School Level Soccer Players

KEYWORDS

Progressive Training, Fluctuated Training Regressive Resistance Training, Flexibility

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ABSTRACT *The present study was designed to determine the effect of progressive, fluctuated and regressive resistance training on selected physical factors of school level Soccer players. To attain the purpose, sixty (N=60) school soccer players from various schools in Tiruppur, Sivagangai District, Tamilnadu India were randomly selected as subjects. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent Progressive Resistance Training, Group-II underwent Fluctuated Resistance Training, Group-III underwent Regressive Resistance Training and Group-IV acted as Control. The dependent variable selected for this study was Flexibility and it was assessed by Sit and Reach test. All the subjects were tested prior to and immediately after the training for the selected variable. Data were collected and statistically analyzed using ANCOVA. Scheffe's post hoc test was applied to determine the significant difference between the paired means. In all the cases 0.05 level of significance was fixed. The results of the study showed that there was a significant difference was found among all the Experimental groups' namely progressive resistance training, fluctuated resistance training and regressive resistance training. Further the results of the study showed progressive resistance training was found to be better than the fluctuated resistance training and regressive resistance training in Flexibility.*

INTRODUCTION

The word "training" means different things in different fields. In sports the word "training" is generally understood to be synonym of doing exercise. In a narrow sense training is physical exercise for the improvement of performance. Training involves constructing an exercise programme to develop an athlete for a particular event. This increasing skill and energy capacities need equal consideration (Singh, 1991).

Resistance training is a method of improving muscular strength by gradually increasing the ability to resist force through the use of free weights, machines, or by using the person's own body weight. Strength training sessions are designed to impose increasingly greater resistance, which in turn stimulates development of muscle strength to meet the added demand.

Resistance training is an anaerobic form of exercise. This training programme can be used to enhance the ability of the body to perform at very high force and/or power outputs for a very short period of time to improve the ability of the body to perform repeated bouts of maximal activity (Baechles, 1994).

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 (Otto et al., 2004).

METHODOLOGY

The study was conducted on sixty (N=60) School boys

students studying in various schools in Tiruppur, Sivagangai District, Tamilnadu India during the year 2014-2015 were selected as subjects. Subjects were randomly assigned equally into four groups. Group-I underwent Progressive Resistance Training, Group-II underwent Fluctuated Resistance Training, Group-III underwent Regressive Resistance Training and Group-IV acted as Control. The experimental groups underwent the respective training for a period of 12 weeks (3 days/week), whereas the control remain as normal with the sedentary life.

Among the various Physical fitness parameters only Flexibility was selected as dependent variable. Flexibility was assessed by Sit and Reach test. All the four groups were tested on selected Flexibility was analyzed before and after the training period.

ANALYSIS OF THE DATA

The data collected from the experimental groups and control group on prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. Whenever they obtained f-ratio value was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

The Analysis of covariance (ANCOVA) on Flexibility of Experimental Groups and Control group have been analyzed and presented in Table -1.

Table – 1
Values of Analysis of Covariance for Experimental Groups and Control Group on Flexibility

Certain Variables	Adjusted Post test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Progressive Resistance Training Group	Fluctuated Resistance Training Group	Regressive Resistance Training Group	Control Group					
Flexibility	21.10	21.69	24.19	17.70	Between	319.79	3	106.60	78.97*
					With in	74.24	55	1.35	

*** Significant at.05 level of confidence**
 (The table value required for Significance at 0.05 level with df 3 and 55 is 2.77)

Table-1 shows that the adjusted post test mean value of Flexibility for Progressive Resistance Training group, Fluctuated Resistance Training group, Regressive Resistance Training group and Control group is 21.10, 21.69, 24.19 and 17.70 respectively. The obtained F-ratio of 78.97 for the adjusted post test mean is more than the table value of 2.77 for df 3 and 55 required for significance at 0.05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of experimental groups on the increase of Flexibility.

To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-2.

Table - 2
The Scheffe's test for the differences between the adjusted post tests paired means on Flexibility

Certain Variables	Adjusted Post test Means				Mean Difference	Confidence Interval
	Progressive Resistance Training Group	Fluctuated Resistance Training Group	Regressive Resistance Training Group	Control Group		
Flexibility	21.10	21.69	--	--	0.59	0.73
	21.10	--	24.19	--	3.09*	0.73
	21.10	--	--	17.70	3.40*	0.73
	--	21.69	24.19	--	3.99*	0.73
	--	21.69	--	17.70	4.20*	0.73
	--	--	24.19	17.70	3.99*	0.73

*** Significant at.05 level of confidence**

Table-2 shows that the adjusted post test mean differences on Flexibility between progressive resistance training group and fluctuated resistance training group, progressive resistance training group and regressive resistance training group, progressive resistance training group and control group, fluctuated resistance training group and regressive resistance training group, fluctuated resistance training and control group, and regressive resistance training group and control group are 3.09, 3.40, 3.99, 4.20 and 3.99 respectively and they are greater than the confidence interval value 0.73, which shows significant differences at 0.05 level of confidence.

The results of the study further have revealed that there is a significant difference in Flexibility between the adjusted post test means of progressive resistance training group and fluctuated resistance training group, progressive re-

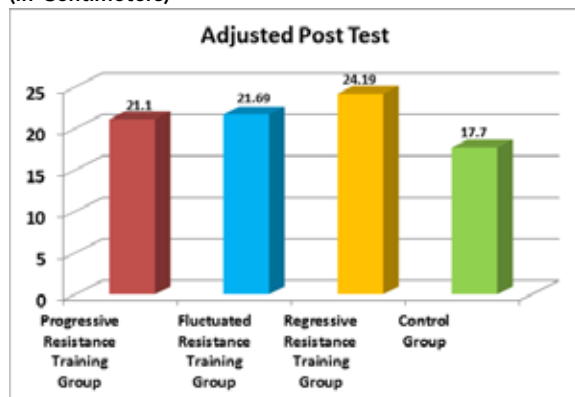
sistance training group and regressive resistance training group, progressive resistance training group and control group, fluctuated resistance training group and regressive resistance training group, fluctuated resistance training and control group, and regressive resistance training group and control group.

However, the improvement in Flexibility was significantly higher for progressive resistance training group than other experimental groups.

It may be concluded that the progressive resistance training group has exhibited better than the other experimental groups in improving Flexibility.

The adjusted post test mean value of experimental groups on Flexibility was graphically represented in the Figure -1.

Figure-1
Bar Diagram on Ordered Adjusted Means of Flexibility (In Centimeters)



CONCLUSION

From the analysis of the data, the following conclusions were drawn.

Significant differences in achievement were found between Progressive Resistance Training group, Fluctuated Resistance Training group, Regressive Resistance Training group and Control group in the selected criterion variable on Flexibility.

The Experimental groups namely, Progressive Resistance Training group, Fluctuated Resistance Training group, Regressive Resistance Training group and Control group had significantly improved in Physical variable such as Flexibility.

The Progressive Resistance Training group was found to be better than the Fluctuated Resistance Training group, Regressive Resistance Training group and Control group in increasing.

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