



## COMPARISON OF LOW MEDIUM AND HIGH INTENSITY RESISTANCE TRAINING PROGRAMMES ON SPEED PARAMETER OF ANNA UNIVERSITY MEN PLAYERS

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### ABSTRACT

The present study was designed to comparison of low, medium and high intensity resistance training programmes on speed parameter of Anna University men players. For this purpose, Sixty (N=60) Anna University Intercollegiate men players studying various Engineering Colleges in Salem District, Tamilnadu during the year 2015-201 were selected randomly as subjects. They were divided randomly into four groups of fifteen each i.e., (n=15) Group-I underwent Low Intensity Resistance Training (LIRT), Group-II underwent Medium Intensity Resistance Training (MIRT), Group-III underwent High Intensity Resistance Training (HIRT) and Group-IV acted as Control. The Experimental groups underwent respective training period for three days per week for ten weeks. The dependent variable selected for this study was Speed only. Speed was assessed by 50 Meters running test. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variable. The data obtained from the experimental groups before and after the experimental period were statistically analyzed with dependent 't'-test and Analysis of covariance (ANCOVA). Whenever the 'F' ratio for adjusted post test means was found to be significant, the Scheffe's Post hoc test was applied to determine the paired mean differences. The level of confidence was fixed at 0.05 level for all the cases. The results of the study showed that there was a significant difference among all the three experimental groups namely Low Intensity Resistance Training (LIRT), Medium Intensity Resistance Training(MIRT) and High Intensity Resistance Training(HIRT)programme had significantly improved in Speed. When the Experimental groups were compared with each other, the Medium Intensity Resistance Training(MIRT) programme was found to be greater than the Low Intensity Resistance Training (LIRT), and High Intensity Resistance Training(HIRT)programme on the improvement of Speed.

**KEYWORDS** : Resistance Training, Intensity, Speed.

### INTRODUCTION

Sport and games involve competition. Without competition, there is no game. Competition provides a forum within which people strive to become competent, to become excellent. The opportunities for rivalry within sport are many and varied: team against team, individual against individual, individual against a record, individual now against a previous best performance and an individual against a physical barrier. Competition involves individuals and groups striving for excellence within the rules and traditions that make up a sport, including all the festival characteristics that give the sport additional flavor and meaning.

The word "training" means different things in different fields. Training denotes the process of preparation for some task. This process varyingly extends to a number of days and even months and years. The term "Training" is widely used in sports. 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).

Sports' training in its typical and most effective form is a pedagogically organized process characterized by all the main traits of a strictly directed process of teaching, upbringing and self-education. The system of exercises, also so arranged as to reach a maximum developing effect in the condition of full control of the process of perfection constitutes the methodological foundation of sports training. The athlete's training is a multi-sided process of the expedient use of aggregate factors (means, methods and conditions), which influences the development of an athlete and ensures the necessary level of preparedness (Matveyev, 1981).

Resistance training is the term used to describe using weights, machines, and even your own body weight to effectively work your muscles. It is the umbrella term used to accurately describe all forms of resistance training, whether working with weights or not. Although strength training accurately describes what resistance

training does, many people do not use the term because they think it only applies to those trying to become bigger and stronger when, in fact, all resistance training which is correctly done indeed increases strength, but does not necessary visibly increase size.

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 (Sreedhar, 2007).

### METHODOLOGY

The present study was designed to comparison of low, medium and high intensity resistance training programmes on speed parameter of Anna University men players. For this purpose, Sixty (N=60) Anna University Intercollegiate men players studying various Engineering Colleges in Salem District, Tamilnadu during the year 2015-201 were selected randomly as subjects. They were divided randomly into four groups of fifteen each i.e., (n=15) Group-I underwent Low Intensity Resistance Training (LIRT), Group-II underwent Medium Intensity Resistance Training (MIRT), Group-III underwent High Intensity Resistance Training (HIRT) and Group-IV acted as Control. The Experimental groups underwent respective training period for three days per week for ten weeks. The dependent variable selected for this study was Speed only. Speed was assessed by 50 Meters running test. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variable. All the subjects of the three groups were tested on selected criterion variables at prior to and immediately after the training programme.

### 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 in the simple effect 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 results of the Analysis of Covariance on Speed of the pre, post, and adjusted test scores of Low Intensity Resistance Training (LIRT) group, Medium Intensity Resistance Training (MIRT) group and High Intensity Resistance Training (HIRT) group and Control group are presented in Table – 1.

**Table – 1 ANALYSIS OF COVARIANCE ON SPEED OF EXPERIMENTAL GROUPS AND CONTROL GROUP**

Test	Low Intensity Resistance Training Group	Medium Intensity Resistance Training Group	High Intensity Resistance Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F ratio
Pre Test Mean	7.72	7.73	7.71	7.67	Between	0.02	3	0.01	0.48
					Within	0.96	56	0.02	
Post Test Mean	7.18	6.81	7.05	7.68	Between	5.93	3	1.98	110.17*
					Within	1.00	56	0.02	
Adjusted Post Test Mean	7.17	6.79	7.05	7.70	Between	6.45	3	2.15	448.13*
					Within	0.26	55	0.005	

\*Significant at 0.05 level of confidence

(Speed Scores in Seconds)

Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

The above table-1 shows that the pre-test mean values on Speed of Low Intensity Resistance Training (LIRT) group, Medium Intensity Resistance Training (MIRT) group and High Intensity Resistance Training (HIRT) group and Control group are 7.72, 7.73, 7.71 and 7.67 respectively. The obtained 'F' ratio of 0.48 for pre-test scores was lesser than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Speed.

The post test mean values on Speed of Low Intensity Resistance Training (LIRT) group, Medium Intensity Resistance Training (MIRT) group and High Intensity Resistance Training (HIRT) group and Control group are 7.18, 6.81, 7.05, and 7.68 respectively. The obtained 'F' ratio of 110.17 for post-test scores was higher than the table value of 2.76 for degrees of freedom 3 and 56 required for significance at 0.05 level of confidence on Speed.

The adjusted post-test means on Speed of Low Intensity Resistance Training (LIRT) group, Medium Intensity Resistance Training (MIRT) group and High Intensity Resistance Training (HIRT) group and Control group are 7.17, 6.79, 7.05, and 7.70 respectively. The obtained 'F' ratio of 448.13 for adjusted post-test scores was higher than the table value of 2.78 for degrees of freedom 3 and 55 required for significance at 0.05 level of confidence on Speed.

The results of the study indicate that there are significant differences among the adjusted post test means of Low Intensity Resistance Training (LIRT) group, Medium Intensity Resistance Training (MIRT) group and High Intensity Resistance Training (HIRT) group and Control group and Control group in Speed performance.

To determine which of the paired means have a significant difference, the Scheffe's test is applied as Post hoc test and the results are presented in Table – 4.2.

**Table – 4.2 THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON SPEED**

Adjusted Post-test Means				Mean Difference	Confidence Interval
Low Intensity Resistance Training Group	Medium Intensity Resistance Training Group	High Intensity Resistance Training Group	Control Group		
7.17	6.79			0.38*	0.07
7.17		7.05		0.12*	0.07
7.17			7.70	0.53*	0.07
	6.79	7.05		0.26*	0.07
	6.79		7.70	0.91*	0.07
		7.05	7.70	0.65*	0.07

\*Significant at 0.05 level of confidence

Table-4.2 shows that the adjusted post test mean differences on Speed between Low Intensity Resistance Training group(LIRT) and Medium Intensity Resistance Training group(MIRT), Low Intensity Resistance Training group(LIRT) and High Intensity Resistance Training group(HIRT) Group, Low Intensity Resistance Training group(LIRT) and Control group, Medium Intensity Resistance Training group(MIRT) and High Intensity Resistance Training group(HIRT), Medium Intensity Resistance Training group(MIRT) and Control group High Intensity Resistance Training group(HIRT), and Control group are 0.38, 0.12, 0.53, 0.26, 0.91 and 0.65 respectively, which are greater than the confidence interval value of 0.07 on Speed at 0.05 level of confidence.

The results of the study showed that there was a significant difference between Low Intensity Resistance Training group(LIRT) and Medium Intensity Resistance Training group(MIRT), Low Intensity Resistance Training group(LIRT) and High Intensity Resistance Training group(HIRT) Group, Low Intensity Resistance Training group(LIRT) and Control group, Medium Intensity Resistance Training group(MIRT) and High Intensity Resistance Training group(HIRT), Medium Intensity Resistance Training group(MIRT) and Control group High Intensity Resistance Training group(HIRT), and Control group on Speed.

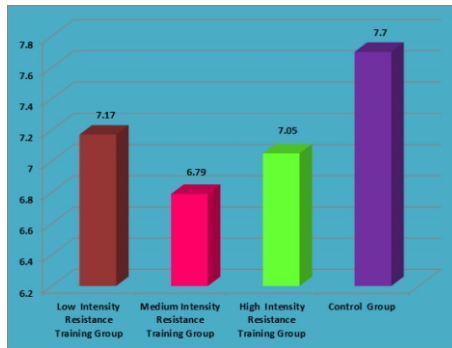
The above data also reveal that Medium Intensity Resistance Training group (MIRT) had shown better performance than Low Intensity Resistance Training group (LIRT), High Intensity Resistance Training group (HIRT) and Control group in Speed.

The pre and post mean values of Low Intensity Resistance Training group (LIRT), Medium Intensity Resistance Training group (MIRT) and High Intensity Resistance Training group (HIRT), on Speed are graphically represented in the Figure -4.1.

The adjusted post mean values of Low Intensity Resistance Training group (LIRT), Medium Intensity Resistance Training group (MIRT) and High Intensity Resistance Training group (HIRT) on Speed are graphically represented in the Figure -4.2.



**Figure: 4.1 The Pre and Post test Mean values Low Intensity Resistance Training group (LIRT), Medium Intensity Resistance Training group (MIRT) and High Intensity Resistance Training group (HIRT) on Speed (In Seconds)**



**Figure: 4.2 The Adjusted Post Mean Values of Low Intensity Resistance Training group (LIRT), Medium Intensity Resistance Training group (MIRT) and High Intensity Resistance Training group (HIRT) on Speed (In Seconds)**

### CONCLUSION

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

1. The Low Intensity Resistance Training group (LIRT), Medium Intensity Resistance Training group (MIRT) and High Intensity Resistance Training group (HIRT) programme had registered significant improvement on Speed.
2. When the Experimental groups were compared with each other, the Medium Intensity Resistance Training (MIRT) programme was found to be greater than the Low Intensity Resistance Training (LIRT) programme, High Intensity Resistance Training (LIRT) programme and Control group on the increase of selected criterion variable namely Speed.

### REFERENCES

1. Matveyev L., (1981), Fundamentals of Sports Training, Progress Publishers, Moscow.
2. Singh Hardayal (1991), Science of Sports Training, New Delhi: DVS Publications.
3. Sreedhar . K. (2007), "Sports Training Methods" Sowmi Publication, Madras, 32.