



## Effect of Aerobic and Resistance Training on Needful Physical Fitness Components among College level Kabaddi Players

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### Abstract

The purpose of the study was to investigate the effect of aerobic and resistance training on needful physical fitness components among college level kabaddi players. For the present study the 30 male intercollegiate level kabaddi players were selected as subjects at random from, Tamilnadu, India and their ages ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent aerobic training and Group 'B' underwent resistance training. Speed was assessed by 50 metre dash and muscular endurance was assessed by sit ups. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05. The aerobic training had positive impact on speed and muscular endurance among college level kabaddi players. The resistance training had positive impact on speed and muscular endurance among college level kabaddi players. Both the training methods have produced similar effects on speed and muscular endurance among college level kabaddi players.

**Keywords:** Aerobic Training, Resistance Training, Speed, Muscular Endurance, Kabaddi.

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### Introduction

Aerobic exercise is a moderate intensity workout that extends over a certain period of time and uses oxygen in this process. Aerobics has become the most happening workout trend among the players. Resistance exercise is a type of exercise that has gained popularity over the last decade. Resistance training is any exercise that causes the muscles to contract against an external resistance with the expectation of increases in strength, tone, mass and endurance. The training to improve strength, power and endurance of muscle performance is called resistance training. Resistance training mostly increases the size of muscle fibers. The goal of resistance training, is to gradually and progressively overload the musculoskeletal system so it gets stronger and also recommends that resistance training should be progressive in nature, individualized, and provide a stimulus to all the major muscle groups. The body must be conditioned before the weights. Resistance training can be used without recourse to the devices. Resistance training works by causing microscopic damage or tears to the muscle cells, which in turn are quickly repaired by the body to help the muscles regenerate and grow stronger. The breakdown of

the muscle fiber is called "catabolism," and the repair and re-growth of the muscle tissue is called "anabolism." (Kathleen et al. 2007).

Kabaddi is basically an outdoor team game, played in the tropical countries of Asia. The excitement and thrill provided by the game has made it very popular and Kabaddi is rightly called the 'Game of the masses'. The game demands agility, muscular co-ordination, breath holding capacity, quick response and a great deal of presence of mind. Kabaddi was probably invented to develop defensive responses by an individual against group attacks and a group's responses to an individual attack. Kabaddi believes in the maxim of a strong mind in a strong body (Prasad, 2002).

### Methodology

The purpose of the study was to investigate the effect of aerobic and resistance training on needful physical fitness components among college level kabaddi players. For the present study the 30 male intercollegiate level kabaddi players were selected as subjects at random from, Tamilnadu, India and their ages ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent aerobic training and Group 'B' underwent resistance training. Speed was assessed by 50 metre dash

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and muscular endurance was assessed by sit ups. The data was collected before and after twelve weeks of training. The data was analyzed by applying Analysis of Co-Variance (ANCOVA). The level of significance was set at 0.05.

**Results**

The findings pertaining to analysis of co-variance between experimental groups on needful physical fitness components among college level kabaddi players for pre-post test respectively have been presented in table I to II.

**Table I.** ANCOVA between experimental groups on speed of college level kabaddi players for pre, post and adjusted test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.21	7.25	BG	0.01	1	0.01	0.51
			WG	0.54	28	0.01	
Post Test Mean	7.04	7.07	BG	2.01	1	2.01	64.68*
			WG	0.87	28	0.03	
Adjusted Post Mean	7.05	7.07	BG	2.02	1	2.02	72.72*
			WG	0.75	27	0.02	

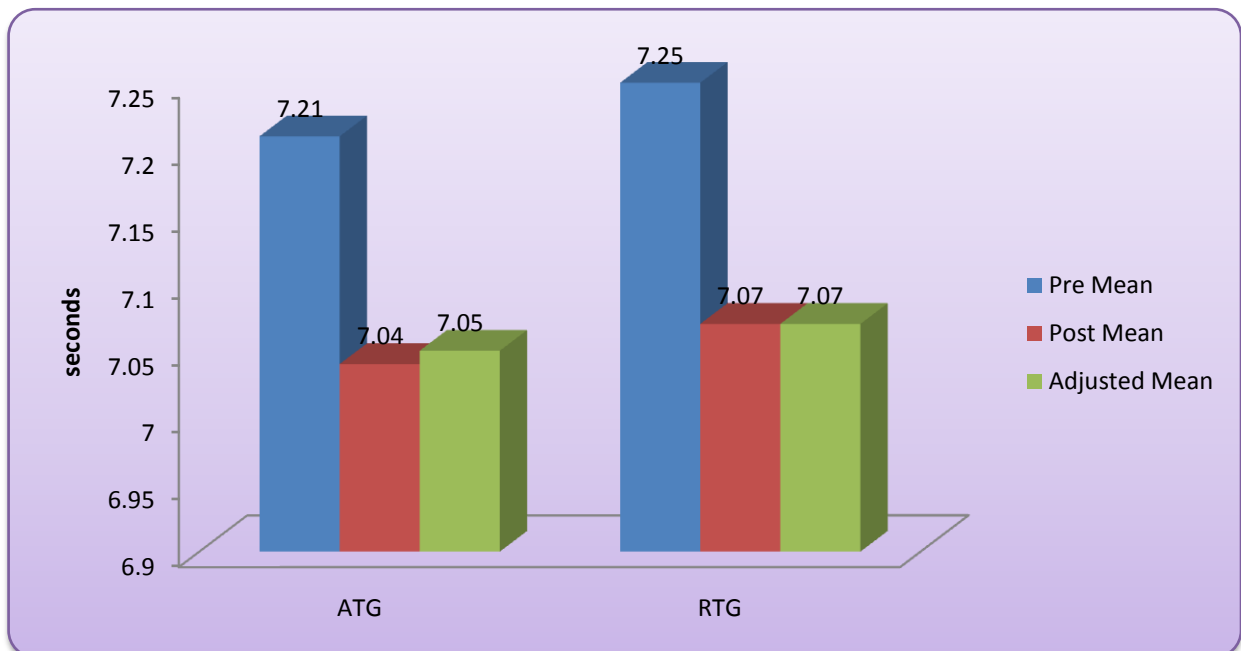
\* Significant at 0.05 level.

df: 1/27= 4.21

Table I revealed that the obtained ‘F’ value of 72.72 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that

there was a significant difference in adjusted means of speed of college level kabaddi players between experimental groups. The graphical representation of data has been presented in figure I.

**Figure I.** Comparisons of pre – test means post – test means and adjusted post – test means for experimental groups in relation to speed



**Table II.** ANCOVA between experimental groups on muscular endurance of college level kabaddi players for pre, post and adjusted test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	45.10	46.24	BG	0.11	1	0.11	2.42
			WG	1.27	28	0.04	
Post Test Mean	56.14	55.71	BG	13.17	1	13.17	326.33*
			WG	1.13	28	0.04	
Adjusted Post Mean	56.11	55.70	BG	14.22	1	14.22	376.41*
			WG	1.02	27	0.03	

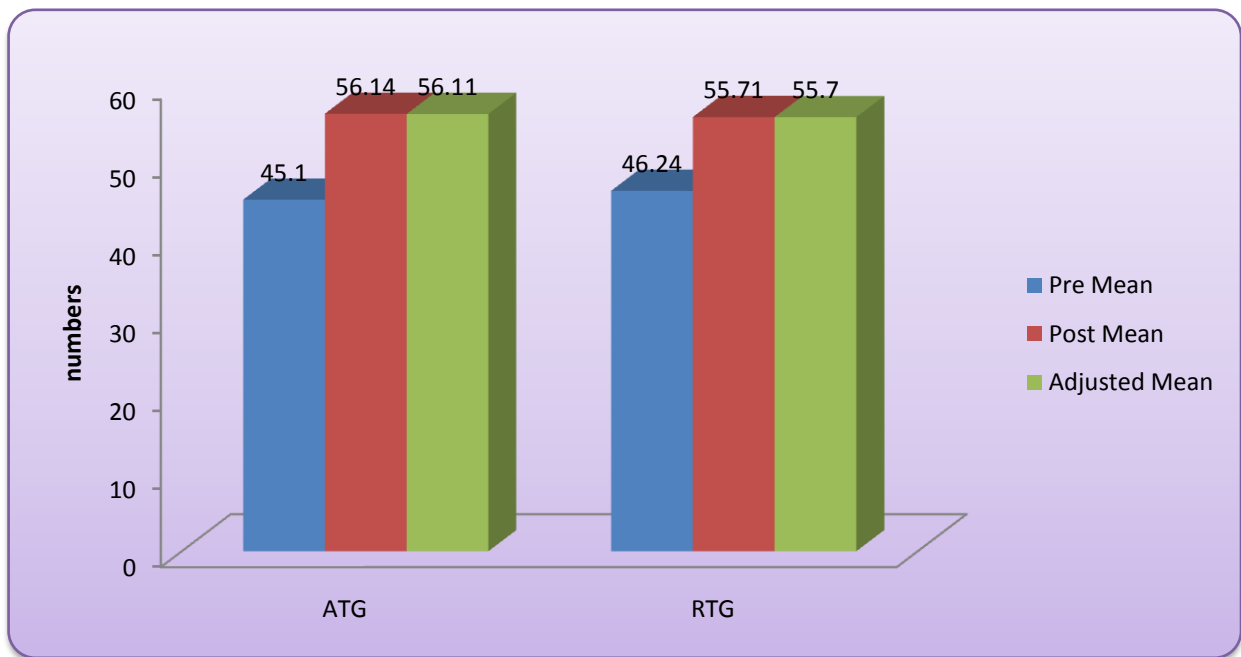
\* Significant at 0.05 level.

df: 1/27= 4.21

Table II revealed that the obtained ‘F’ value of 376.41 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that

there was a significant difference in adjusted means of muscular endurance of college level kabaddi players between experimental groups. The graphical representation of data has been presented in figure II.

**Figure II.** Comparisons of pre – test means post – test means and adjusted post – test means for experimental groups in relation to muscular endurance



In case of needful physical fitness components i.e. speed and muscular endurance the results between pre and post (12 weeks) test has been found significantly higher in both the experimental groups. The findings of the present study have strongly indicates that both the aerobic and resistance training of twelve weeks have significant effect on needful physical fitness components i.e., speed and muscular endurance of college level kabaddi players.

**Conclusion**

On the basis of findings and within the

limitations of the study the following conclusions were drawn:

1. The aerobic training had positive impact on speed and muscular endurance among college level kabaddi players.
2. The resistance training had positive impact on speed and muscular endurance among college level kabaddi players.
3. Both the training methods have produced similar effects on speed and muscular endurance among college level kabaddi players.

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