



Effect of Interval training on Selected Strength Parameters among Badminton Players

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Abstract

The purpose of the study was to investigate the effect of interval training on strength parameters among shuttle badminton players. To achieve the purpose of this study, thirty shuttle badminton players from Trivendrum, Kerala, India were randomly selected as subjects. As per the records, their age ranged from 18 to 25 years. The investigator selected the following variables for the present investigation. True randomized experimental group design has been employed with two groups, namely interval training group and control group with 15 subjects each. Group I participated their treatments for a period of twelve weeks and no training were given to the control group. Strength endurance was assessed by 30 second endurance jump and explosive strength was assessed by standing broad jump. The two groups were statistically analysed by using analysis of covariance (ANCOVA). The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of twelve weeks of interval training.

Keywords: Interval Training, Shuttle Badminton, Strength Endurance, Explosive Strength.

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Introduction

Badminton is a racquet sport included in Olympic sports from 1992 where various events like men singles, women singles and mixed doubles matches are held. Badminton sport requires excellent physical fitness. As the players has to move in every corner of court they require aerobic stamina, explosive strength speed, accuracy and agility. Further, motor coordination is required as the players have to hit the shuttlecock with precision and accuracy. In fact, in Badminton competition players has to maintain concentration to meet the tactics of opponents. Players have to maintain good physical fitness to meet the demands of game. Of note, overall psycho-physical fitness is the key to achieve success in this game (Dewney & Brodie, 1980). The concept of interval training has existed for a number of years in one form or another. The famous German coach, Woldemar Gerschler, with the formalization of a structured system of interval training in the 1930s. With interval training, short to moderate periods of work are alternated with short to moderate periods of rest, or reduced activity. The concept has a firm foundation in physiological principles. Researchers have demonstrated that athletes can perform a considerably greater volume of work by breaking the total work into short, intense bouts with rest, or reduced activity, intervals interspersed

between consecutive work bouts. The intervals of work and rest are usually equal and can vary from several seconds to five minutes or more (Wilmore & Costill, 1986).

Methodology

The purpose of the study was to investigate the effect of interval training on strength parameters among shuttle badminton players. To achieve the purpose of this study, thirty shuttle badminton players from Trivendrum, Kerala, India were randomly selected as subjects. As per the records, their age ranged from 18 to 25 years. The investigator selected the following variables for the present investigation. True randomized experimental group design has been employed with two groups, namely interval training group and control group with 15 subjects each. Group I participated their treatments for a period of twelve weeks and no training were given to the control group. Strength endurance was assessed by 30 second endurance jump and explosive strength was assessed by standing broad jump. The two groups were statistically analysed by using analysis of covariance (ANCOVA).

Results and Discussion

The detailed procedure of analysis of data and interpretation were given below,

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Table I. Summary of Descriptive Statistics on Strength Parameters among Shuttle Badminton Players

S.No	Variables	Experimental Group					Control Group				
		Pre	SD (\pm)	Post	SD (\pm)	Adjusted Mean	Pre	SD (\pm)	Post	SD (\pm)	Adjusted Mean
1	Strength endurance	21.21	1.23	25.47	1.02	25.41	20.22	1.15	20.55	1.25	20.54
2	Explosive Strength	1.34	0.86	1.65	0.98	1.67	1.27	0.54	1.31	0.51	1.30

The table I shows that the pre and post test means and standard deviation of two groups on strength parameters of shuttle badminton players.

Table II. Analysis of Variance of Pre Test Scores on Strength parameters among Shuttle badminton players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Strength endurance	BG	0.24	1	0.24	0.07
		WG	95.33	28	3.40	
2	Explosive strength	BG	12.81	1	12.81	1.39
		WG	257.66	28	9.20	

* $P < 0.05$ Table F, df (1,28) (0.05) = 4.19

In table II, the results of analysis of variance of pre test scores on strength endurance (0.07) and explosive strength (1.39) were lesser than the table

value of 4.19 indicating that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence indicating that the random sampling was successful.

Table III. Analysis of Variance of Post Test Scores on Strength parameters among Shuttle badminton players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Strength endurance	BG	284.03	1	284.03	43.96*
		WG	181.13	28	6.46	
2	Explosive strength	BG	894.80	1	894.80	86.53*
		WG	289.66	28	10.34	

* $P < 0.05$ Table F, df (1,28) (0.05) = 4.19

In table III, the results of analysis of variance of post test scores on strength endurance (43.96) and explosive strength (86.53) were greater than the table

value of 4.19 indicating that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence.

Table IV. Analysis of Covariance of Adjusted post test scores on Strength parameters among Shuttle badminton players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Strength endurance	BG	214.83	1	214.83	30.69*
		WG	189.21	27	7.00	
2	Explosive strength	BG	893.28	1	893.28	83.25*
		WG	289.95	27	10.73	

* $P < 0.05$ Table F, df (1,27) (0.05) = 4.21

In table IV, the results of analysis of covariance of adjusted post test scores strength endurance (30.69) and explosive strength (83.25) were greater than the

table value of 4.21 indicating that it was not significant for the degrees of freedom (1,27) at 0.05 level of confidence.

Figure I. Shows the Mean Values of Strength endurance on Experimental and Control groups among Shuttle badminton players

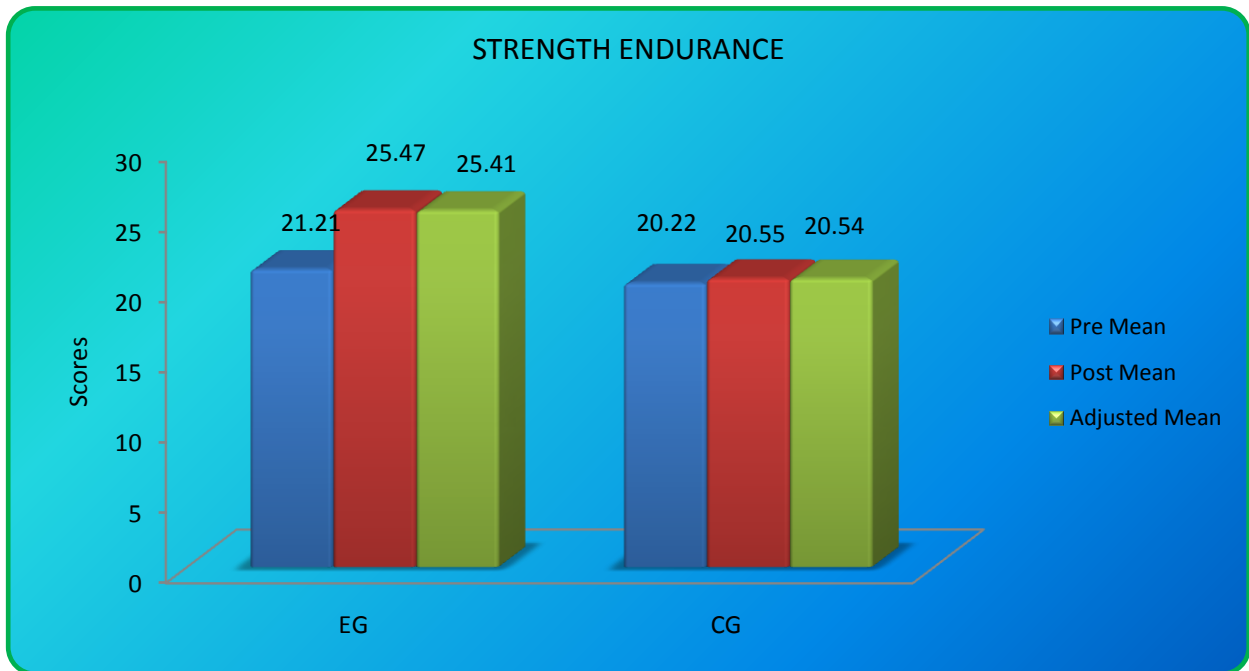
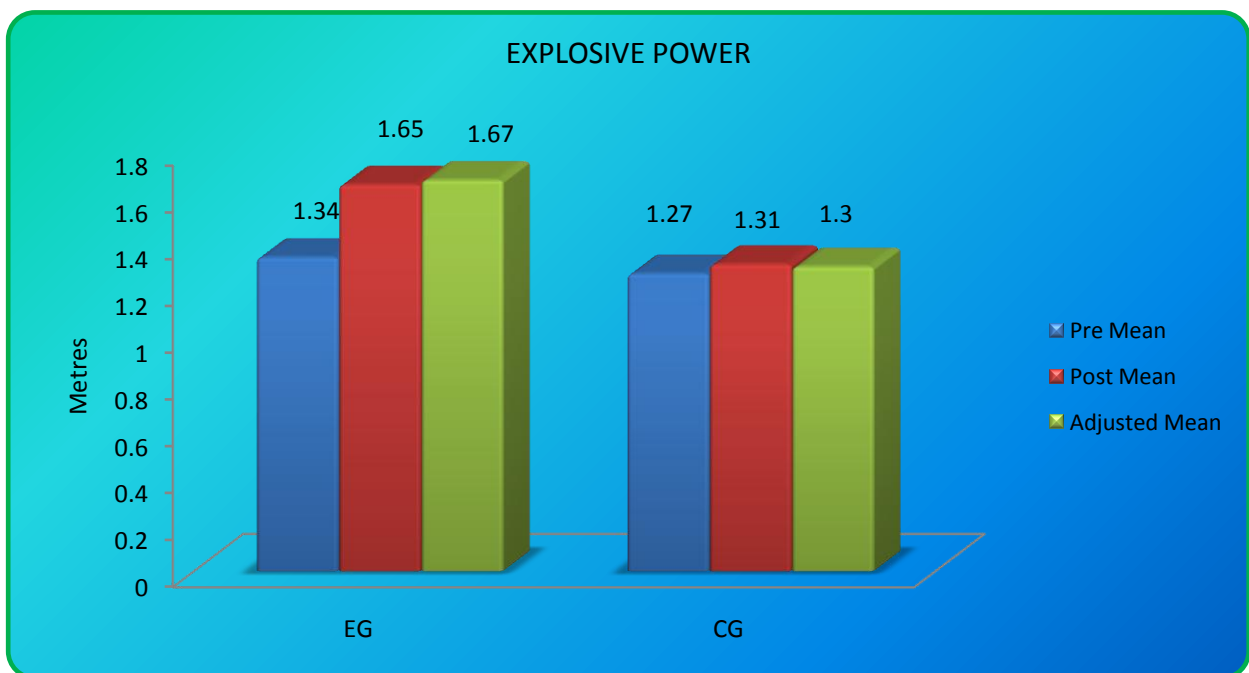


Figure II. Shows the Mean Values of Explosive strength on Experimental and Control groups among Shuttle badminton players



In case of strength parameters i.e. strength endurance and explosive strength the results between pre and post (12 weeks) test has been found significantly higher in experimental group in comparison to control group. The findings of the present study have strongly indicates that interval training of twelve weeks have significant effect on strength parameters i.e. strength endurance and explosive strength of shuttle badminton

players. Hence the hypothesis earlier set that interval training programme would have been significant effect on strength parameters in light of the same the hypothesis was accepted.

Conclusions

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the

following conclusion was drawn.

The result of the study reveals that there was a significant improvement in the experimental group on selected variables when compared to the control group after the completion of twelve weeks of interval training.

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