Research Paper Physical Education

Effect of Game-Specific Strength Training on Selected Physical, Physiological and Performance Variables Among Badminton Players

*D.Raman ** Dr.A.S.Nageswaran

* Part time Research Scholar, Department of Physical Education, H.H.The Rajah's College, Pudukkottai.

** Associate Professor, Department of Physical Education, H.H.The Rajah's College, Pudukkottai.

ABSTRACT

The study was designed to find out the effect of game-specific strength training on selected Physical, Physiological and performance variables among Badminton players. To achieve the purpose, 20 (boys) Badminton players were selected as subjects from different schools of Pudukkottai district. The subjects age ranged between 15 to 18 years. The following variables such as Agility, Explosive power, Speed, Breath holding time, Resting pulse rate and Performance Analysis of covariance (ANCOVA) was selected as dependent variables used to determine the difference. The results of the study revealed that all the independent variables are highly significant different with control group and they are considered as the best determinants for predicting Badminton playears.

Keywords : Strength having Agility, Explosive Power, Speed, Resting Pulse Rate and Breath Holding Time.

Introduction

Badminton, a form of sport played in ancient Greece and Egypt. Badminton came from a child's game called battledore and shuttlecock in which two players hit a feathered shuttlecock back and forth with tiny rackets. The game was called "POONA" in India during the 18th Century and British Army Officers stationed there tool the Indian version back to England in the 1860's. The army men introduced the game to friends but the new sport was definitely launched there at a party given in 1873 by the Duke of Beaufort at his country place "Badminton" in Gloucester shire. During that time, the game had no name, but it was referred to as "The Game of Badminton" and thereupon, Badminton became its official name.

Until 1887 the sport was played in England under the rules that prevailed in India. They were from the English viewpoint, somewhat contradictory and confusing. Since a small army of badminton players had been recruited group formed itself into the Bath Badminton Club standardized the rules and made the game applicable to English ideas and the basis regulations drawn up in 1887 still guide the sport. In 1895, the Badminton Association of England was formed to take over the authority of the Bath Badminton Club and the new rules which now govern the game throughout the world.

Badminton is an extremely demanding sport. At an elite level, players are often required to perform at their limits of speed, Agility, flexibility, endurance and strength. On top of all this, players must maintain a high state of concentration in order to meet the tactical mental demands of dealing with their opponents. The varied potential stresses of competitive play are considerable. It is therefore essential that everyone involved with the modern gamer ought to be familiar with the fitness (physiological) requirements of the game and how 'Badminton fitness' can be enhanced.

Speed and agility are quite closely linked to strength. Speed, in particular is usually improved when strength and power are enhanced. Both speed and agility are vital to Badminton performance. A successful player must move quickly when necessary but changes in direction are equally important in the game due to the nature of the movements required in a rally. While some people seem to be naturally fast and agile, these are both skills that can be acquired. It is important to remember that speed and agility will not be improved if a player is training while tired. Speed and agility must be trained when a player is relatively fresh, but after a good warm up.

Badminton is a highly complex sport and this presents great challenges for players and coaches of all levels. An individual rally is a series of demanding movements performed using a movement pattern which is unique compared with any other sport. Rally length is often short (average for elite players is around 6-8 seconds) and. consequently, performed at very high intensity. However, players must also be prepared for long rallies. Rallies are interspersed with short rest periods (typical duration around 15 seconds) which allow partial recovery from the previous rally. However, competitive matches may last at least 45 minutes. So, badminton is a combination of speed (anaerobic fitness) in rallies and endurance (anaerobic fitness) to allow sustained efforts and to promote recovery between rallies. Great strength, power, agility and flexibility are also required. All of these fitness components should form part of a player's fitness training. Additionally, the development of tactical and technical elements is, of course, also vital. With all of these types of training, an understanding of the principles of fitness training from a general point of view is essential.

STATEMENT OF THE PROBLEM

The purpose of the present investigation was to determine the association of Agility, Explosive power, Speed on Badminton player of School Level students.

HYPOTHESES

Is was hypothesized that there might be a significant improvement in selected physical variables. Among Badminton players due to Strength training.

METHODOLOGY

To achieve the purpose of this study, twenty Badminton (boys) players of different age school of Pudukkottai district were selected. They were divided onto two groups namely strength training group and control groups of ten subjects

each. The experimental group underwent strength training for eight weeks of two days per weeks. The group – II acted as controls who were not engaged in any special activities other than their daily routine. Selected as criterion variable the following variables such as Agility, Explosive power, Speed were selected as independent variable. The criterion variables were assessed by using the standardized tests as detailed below and Table-I. Analysis of Covariance (ANCOVA) was used to determine the effect of Strength training on selected dependent variables. In all cases, the probability level of .05 level of confidence was selected to test statistical significance.

TABLE – I
SELECTION OF TEST

S.No	Criterion Variables	Test Items	Unit of Measurement
1.	Agility	Shuttle Run (10 yds)	1/10 Seconds
2.	Explosive Power	Standing broad jump	In (mts) metres
3.	Speed	50 meters run	$1/10^{th}$ of a second

RESULT OF THE STUDY AND DISCUSSION ON FINDINGS
The data collected from the subjects before and after the training period have been analysed with ANACOVA and are presented in table II.

TABLE –II
ADJUSTED POST – TEST MEANS OF EXPERIMENTAL AND CONTROL GROUPS ON THE SELECTED PHYSICAL PHYSIOLOGICAL AND PERFORMANCE VARIABLES

Sl. No	Variables	Adjusted Post test means		SOV	df	SS	MS	"F"
		Con.	Exp.					
1.	Agility	9.881	9.709	SSB	1	0145	1.45	22.232*
				SSW	17	.111	.007	
2.	Resting Pulse Rate	2.277	2.333	SSB	1	.014	.014	10.068*
				SSW	17	.024	.001	
3.	Speed	6.740	6.590	SSB	1	.104	.104	14.525*
				SSW	17	.122	.007	

Significant at 0.05 level of confidence table required for significance at .05 levels is 1 and 17 is 4.45.

It is observed from the table II that the F-ratio Values for adjusted post test means value of Experimental and control groups on Agility, Explosive power and Speed were 22.232, 10.068, and 14.525, respectively. The obtained F-ratio values are greater than the table value 4.45 for dt. 1 and 17 required for significance at 0.05 level of confidence. Hence, it is evident that there existed significant and control groups on the development of selected criterion variables.

CONCLUSION
Now day's sports activities are classified in to several areas such as performance sports, physical education, rehabilitation sports, fitness and leisure sports, and adventure sports. Performance sports aim at high sports performance and for that, the physical and psychic capacities of sportsman are developed through various training means and methods. Most physical movements incorporate the elements of fore, quickness, Duration, complexity and range of motion to a certain extend. Further, it can distinguish individual mother aspects and physiological components such. Further, it can distinguish individual motion aspects and physiological components such as strength, speed, endurance and co-ordination. For training there will likely be more interest in perfecting the athlete through the physiological components, commonly known as biomotor abilities than in perfecting the skill. Out of all the biomotor abilities, strength and power are the most critical for many sports. All team sports and speed power dominant sports rely on solid strength and power development. Understanding the mechanics and physics of weight training and incorporating those principles in to the training programme will give players a competitive edge. In this context, the investigator made an attempt to analyse the effect of Game specific strength training on selected physical variables Among Badminton players.

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

1. The strength training group achieved significant improvement on Agility, Explosive Power, and Speed.
2. Significant differences were found between Strength training group and control group on Agility, Explosive Power, and Speed.

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