



Effect of Aerobic Exercises with Medium Intensity and Duration on Selected Motor Fitness Variables of Handball Players

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Abstract

The purpose of the present study was to find out the effect of aerobic exercises with medium intensity and duration on selected motor ability components of hand ball players. To achieve the purpose of the present study, forty students from Kendriya Vidyalaya, Kalpetta, Wayanad, Kerala, India were selected as subjects at random and their ages ranged from 13 to 15 years. The selected subjects are divided in to two groups. The experimental group participated aerobic training with medium intensity and duration for eight weeks. The control group was not undergone any training other than their daily routine. The criterion measures speed was measured by 50 metres dash and the unit is in seconds, agility was measured by 'T' Agility run test and the unit is in seconds and explosive power was measured by sargent vertical jump test and the unit is in centimetres. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level. The result reveals that the aerobic training with medium intensity and duration group has showed better performance on speed, agility and explosive power than the control group.

Keywords: Aerobic Exercises, Medium Intensity, Handball, Motor Fitness.

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Introduction

Handball is played worldwide for recreation and exercise. Players use gloved hands to hit and return a ball against the wall of a marked court. It is often called Irish handball, or one-wall, three-wall, or four-wall handball, combines elements of fives, squash, pelota, racquetball, and jai alai, but does not resemble team or Olympic handball. Handball is an ideal synthesis of the three fundamental athletic disciplines of running, jumping and throwing. Therefore it is not only a purely competitive sport but also a fine sport to be taken up with advantage by many for purposes of training and health. The player must be able to start quickly, he must be a persevering runner, he must be able to skillfully deceive his opponent, he must be able to swiftly pick up the ball or catch it in the air, he must pass the ball with precision to his team-mates and he must be able to execute all sorts of throws; in short, his body, his arms and his legs will have to be harmoniously trained. As the name of the game suggests, hands play the most important role; hands being naturally the deftest members of the body, the growing popularity of Handball is easily explained. Many kinds of throws to score a goal are possible. The

Handball player is inspired to use his hands as a means of carrying out his ideas (Baroni & Leal Junior, 2010).

Aerobic dancing is a series of callisthenic exercise movements, accompanied by music, The use of music is a technique of motivation that has been increased in recent years. Aerobic dance is essential to a healthy cardiovascular system. Briefly, aerobic dance is an activity that can be sustained for an extended period of time without building an oxygen debt in the muscles. It is a type of dance that overloads the heart and lungs and causes them to work harder than they do when a person is at rest. Aerobic literally means "With air".

Methods

The purpose of the present study was to find out the effect of aerobic exercises with medium intensity and duration on selected motor ability components of hand ball players. To achieve the purpose of the present study, forty students from Kendriya Vidyalaya, Kalpetta, Wayanad, Kerala, India were selected as subjects at random and their ages ranged from 13 to 15 years. The selected subjects are divided in to two groups. The experimental group participated aerobic training with medium intensity and duration for eight weeks. The control group was not undergone any training other than their daily routine. The criterion measures speed was measured by 50 metres dash and the unit is in seconds, agility was measured by 'T' Agility run test and the unit

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is in seconds and explosive power was measured by sargent vertical jump test and the unit is in centimetres. The two groups were statistically analysed by using analysis of covariance (ANCOVA) at 0.05 level.

Results and Discussion

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

Table I. Summary of Descriptive Statistics on Selected Motor ability components among Handball players

S.No	Variables	AEMIDG					CG				
		Pre	SD (±)	Post	SD (±)	Adjusted Mean	Pre	SD (±)	Post	SD (±)	Adjusted Mean
1	Speed	7.54	0.29	7.14	0.20	7.09	7.42	0.22	7.40	0.24	7.45
2	Agility	11.85	0.76	10.81	0.52	10.70	11.48	0.57	11.49	0.54	11.60
3	Explosive Power	27.70	1.34	39.05	4.52	39.01	27.20	1.64	27.15	2.27	27.19

AEMIDG = Aerobic exercises with medium intensity and duration Group

CG = Control Group

The table I shows that the pre and post test means and standard deviation of two groups on selected

motor ability components variables among handball players.

Table II. Analysis of Variance of Pre Test Scores on Selected Motor ability components Variables among Handball players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	0.15	1	0.15	2.13
		WG	2.69	38	0.07	
2	Agility	BG	1.36	1	1.36	2.98
		WG	17.32	38	0.45	
3	Explosive power	BG	2.50	1	2.50	1.11
		WG	85.40	38	2.24	

* $P < 0.05$ Table F, df (1,38) (0.05) = 4.09

In table II, the results of analysis of variance of pre test scores on speed (2.13), agility (2.98) and explosive power (1.11) were lesser than the table value

of 4.09 indicating that it was not significant for the degrees of freedom (1,38) at 0.05 level of confidence indicating that the random sampling was successful.

Table III. Analysis of Variance of Post Test Scores on Selected Motor ability components among Handball players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	0.69	1	0.69	13.63*
		WG	1.92	38	0.05	
2	Agility	BG	4.64	1	4.64	16.28*
		WG	10.84	38	0.28	
3	Explosive power	BG	1416.10	1	1416.10	110.38*
		WG	487.50	38	12.82	

* $P < 0.05$ Table F, df (1,38) (0.05) = 4.09

Table IV. Analysis of Covariance of Adjusted post test scores on Selected Motor ability components Variables among Handball players

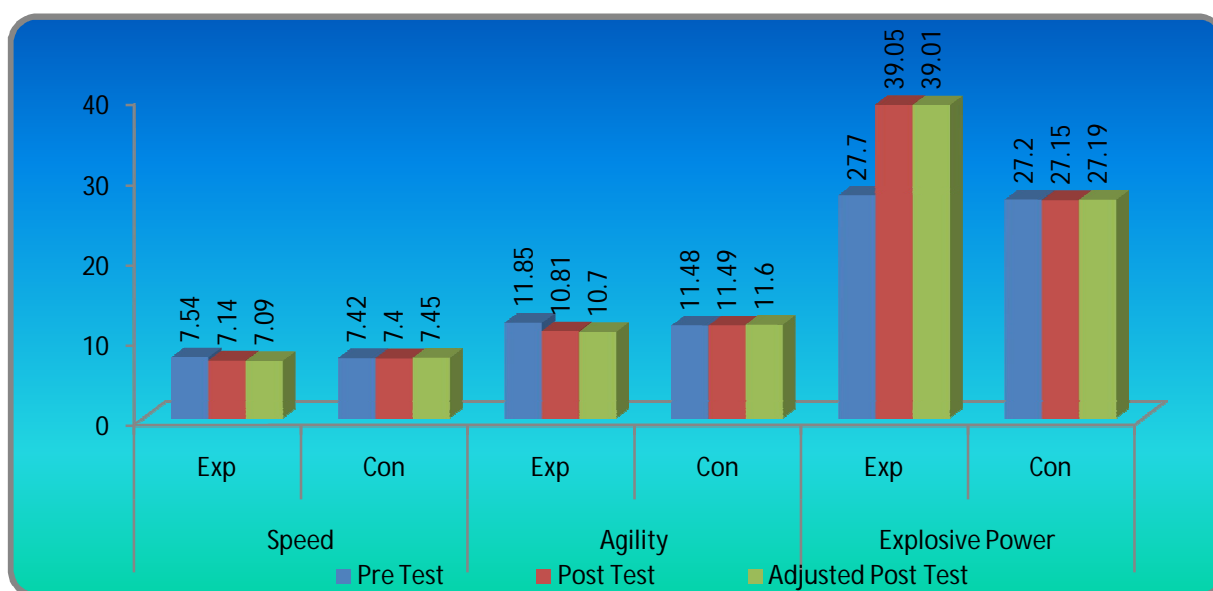
Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Speed	BG	1.18	1	1.18	99.33*
		WG	0.44	37	0.01	
2	Agility	BG	7.56	1	7.56	60.81*
		WG	4.59	37	0.12	
3	Explosive power	BG	1357.33	1	1357.33	103.48*
		WG	485.30	37	13.11	

* $P < 0.05$ Table F, df (1,37) (0.05) = 4.10

In table IV, the results of analysis of covariance of adjusted post test scores on speed (99.33), agility (60.81) and explosive power (103.48) were greater than

the table value of 4.10 indicating that it was significant for the degrees of freedom (1,38) at 0.05 level of confidence.

Figure-I. Shows the Mean Values of Experimental and Control Groups on Selected Motor ability components variables among Handball players



Conclusions

In the light of the study undertaken with certain limitations imposed by the experimental conditions, the following conclusions were drawn.

1. 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 eight weeks of aerobic exercises with medium intensity and duration.
2. The aerobic training with medium intensity and duration group has showed better performance on speed, agility and explosive power than the control group.

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