



EFFECT OF HIGH AND LOW INTENSITY INTERVAL TRAINING ON TRIGLYCERIDES AMONG HIGHER SECONDARY STUDENTS OF HANDBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of high and low intensity interval training on triglycerides among higher secondary students of handball players. The random sample consisted of 45 school handball players from Islamiah Boys Higher Secondary School, Vaniambadi, Vellore District and their ages ranged from 15 to 17 years. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to high intensity interval training, Experimental Group II was exposed to low intensity interval training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. Data was analyzed by using ANCOVA and Scheffe's Post Hoc Test. Result found that high intensity interval training had significant reduction in triglycerides among handball players than the low intensity interval training.



KEY WORDS: Intensity, Interval Training, Handball Players.

INTRODUCTION

Handball is not an expensive sport. They need only small playing fields or gymnasiums may be used, there is a comparatively smaller number of players and a simple outfit will do. Basically it is a game played by two teams of seven (six ground player and one goal keeper) whose object is to score goals by throwing a small ball towards a goalkeeper into the goal. The ball is passed around by players using their upper body only and any contact with the ball below the knee is a foul. A player can run with the ball, as long as they bounce it, as in Basketball. However, they can take three steps without bouncing the ball. Players can not cross the D shaped goal area, and generally the goalkeeper stays within this D circle. This often results in players attempting to take their three steps and jumping into this area to shoot, which is allowed as long as they are off the ground when the shot is taken. Handball is mainly a contact sport, where defenders can block an opposing attacker to prevent them shooting. This tactic means that the defending team tends to guard their own D circle, whilst the attacking team passes the ball around to try to find a way to attack and run in to get a clear shot on goal. Once an attack breaks down, due perhaps to the defense intercepting a pass or the goalkeeper saving a shot, then the situation is reversed and players quickly counter attack to try to score a goal before the opposing team has had sufficient time to organise their defense. The objective of the game is to score their goals and avoid opponent getting goals. The team that scores more goals in a given period of time wins the match. The game is played at a high speed and contact the body is permitted (Barbara, 2011).

Interval training is a method of training where a person increases and decreases the intensity of his workout between aerobic and anaerobic training. Interval training in Sweden, where it originated, is known

as Fartlek training (Swedish for "speed play"). The protocol for interval training is to push one's body past the aerobic threshold for a few moments and then return to one's aerobic conditioning level with the objective of improving your performance (speed, strength, and endurance). The aerobic threshold is the intensity where one's body switches from burning a greater percentage of fat to a greater percentage of carbohydrate and is generally 85% of one's maximum heart rate (train below 85% and its aerobic; train above 85% and its anaerobic) (Engel & Sperlich, 2014).

METHODOLOGY

The purpose of the study is to find out the effect of high and low intensity interval training on triglycerides among higher secondary students of handball players. A sample of 45 school handball players (ages ranged from 15 to 17 years) was selected by randomly from Islamiah Boys Higher Secondary School, Vaniambadi, Vellore District, Tamil Nadu. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to high intensity interval training, Experimental Group II was exposed to low intensity interval training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. Analysis of Covariance and Scheffe's Post Hoc Test was used to analyzed the data.

RESULTS

Table 1: Analysis of Covariance of Mean of High Intensity Interval Training, Low Intensity Interval Training and Control Groups on Triglycerides

	High intensity interval training	Low intensity interval training	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F
Pre-Test Means	123.60	123.26	122.73	Between Groups	5.73	2	2.86	1.16
				Within Groups	103.46	42	2.46	
Post-Test Means	114.53	117.66	123.13	Between Groups	568.31	2	284.15	137.49*
				Within Groups	86.80	42	2.06	
Adjusted Post-Test Means	114.61	117.68	123.03	Between Groups	515.80	2	257.90	128.71*
				Within Groups	82.15	41	2.00	

Table-1 indicates that the pre test means of high intensity interval training, low intensity interval training and control groups were 123.60, 123.26 and 122.73 respectively. The obtained F-ratio for the pre-test was 1.16 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there were no significant difference between the experimental and control groups indicating that the process of randomization of the groups was perfect while assigning the subjects to groups.

The post-test means of the high intensity interval training, low intensity interval training and control groups were 114.53, 117.66 and 123.13 respectively. The obtained F-ratio for the post-test was 137.49 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post test means of the

subjects were significant. The adjusted post-test means of the high intensity interval training, low intensity interval training and control groups were 114.61, 117.68 and 123.03 respectively. The obtained F-ratio for the adjusted post-test means was 128.71 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on triglycerides. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe’s post hoc test. The results were presented in Table-2.

Table 2: Scheffe’s Test for the Differences between the Adjusted Post Test Paired Means on Triglycerides

Adjusted Post-test means			Mean Difference	Required CI
High intensity interval training	Low intensity interval training	Control Group		
114.61	117.68	---	3.07*	1.31
114.61	---	123.03	8.42*	
---	117.68	123.03	5.35*	

**Significant at 0.05 level.*

Table-2 shows that there exists significant differences between the adjusted means of high intensity interval training and low intensity interval training (3.07), high intensity interval training with control group (8.42) and low intensity interval training with control group (5.35) at 0.05 level of significance with the confidence interval value of 1.31. The pre, post and adjusted means on triglycerides were presented through bar diagram for better understanding of the results of this study in Figure-1.

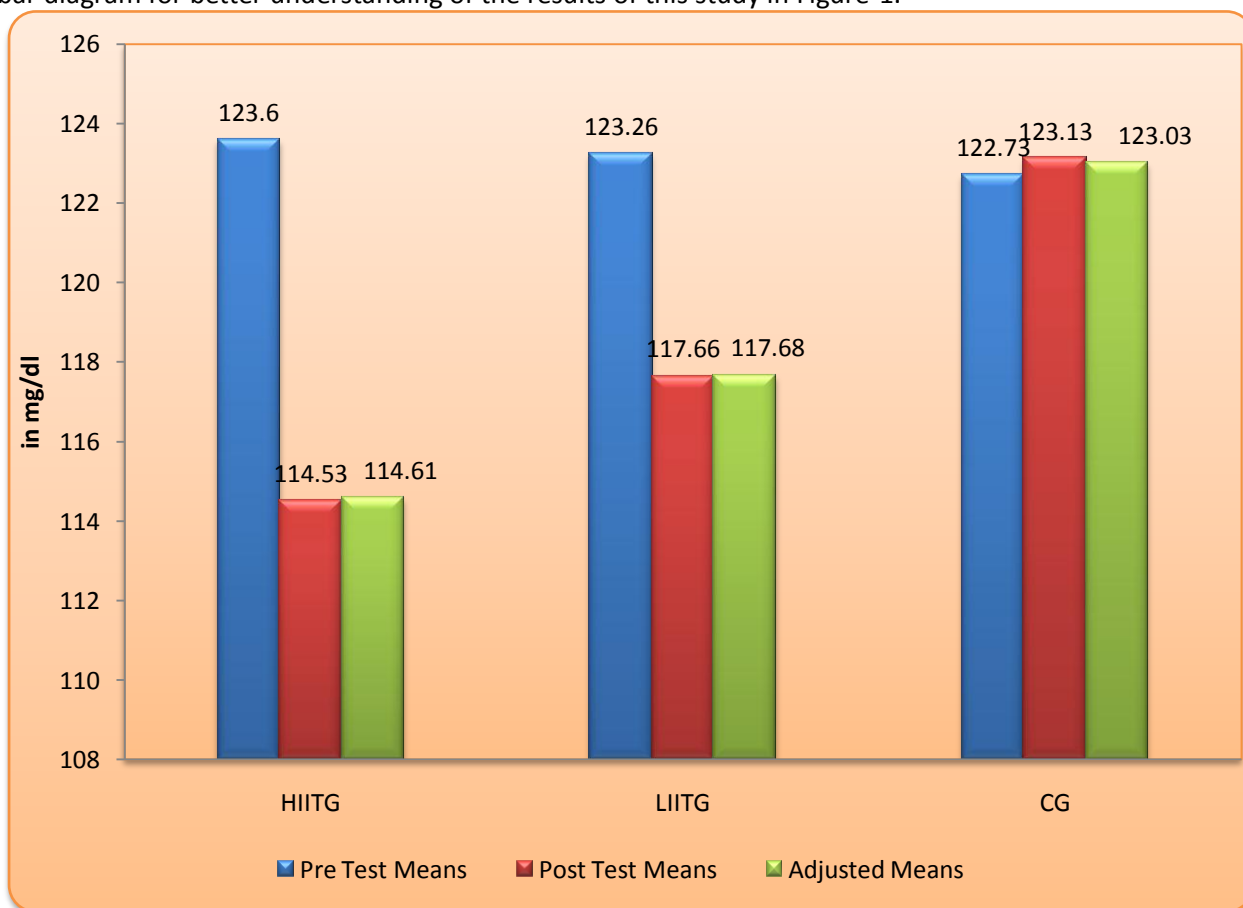


Fig 1: Pre, Post and Adjusted Post Test Differences of the High Intensity Interval Training, Low Intensity Interval Training and Control Groups on Triglycerides

CONCLUSION

- The high intensity interval training had shown significant reduction in triglycerides among handball players than the low intensity interval training.

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