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EFFECT OF VARIED INTENSITY INTERVAL TRAINING ON SELECTED MOTOR FITNESS VARIABLES AMONG MEN FOOTBALL PLAYERS

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Abstract:

The purpose of the study was to find out the "effect of varied intensity interval Training on Selected motor fitness variables among Men football players". Method: To achieve the purpose of the study 45 Men students were selected from YMCA College of physical education, Chennai. The subject's age ranged between 18 - 25 years. A pre-test and post-test randomized group design was used for this study .The randomly selected 45 college level Men students were divided in to three groups randomly consisting of 15 Students in each group. Before the training pre-test was taken for all the groups on selected motor Fitness variables, speed, agility muscular Endurance, Muscular Strength. Experimental group1 underwent six weeks of High intensity interval Training and Experimental group 2 underwent six weeks of Very high intensity interval Training and the control group did not underwent any training. The difference between the pre-test and post-test means were subjected to statistical treatment using ANCOVA, which was the influence of varied intensity interval training. In all cases 0.05 levels was fixed to test the hypothesis of the study. Findings: The results of the study proved that there was significant improvement on speed, agility, muscular strength and muscular endurance due to six weeks training compared to control group.

Key Words: Intensity Interval Training, Agility, Speed, Muscular Strength, Muscular Endurance

Introduction:

Interval Training:

Interval training is a type of discontinuous physical training that involves a series of low- to high-intensity exercise workouts interspersed with rest or relief periods. The high-intensity periods are typically at or close to anaerobic exercise while the recovery periods may involve either complete rest or activity of lower intensity. Interval training is a method of training where you increase and decrease the intensity of your workout between aerobic and anaerobic training. Interval training in Sweden where some say it originated is known as fartlek training (Swedish for "speed play"). The protocol for interval training is to push your body past the aerobic threshold for a few moments and then return to your aerobic conditioning level with the objective of improving your performance (speed, strength, and endurance). The aerobic threshold is the intensity where your body switches from burning a greater percentage of fat to a greater percentage of carbohydrate and is generally 85% of your maximum heart rate (train below 85% and it's aerobic train above 85% and it's anaerobic). Interval training can refer to organization of any cardiovascular workout cycling, running, rowing and is prominent in many sports' training. It is a technique particularly employed by runners but athletes from several backgrounds have been known to use this type of training.

There are two types of interval training

- Slow interval training
- Fast interval training.

High-Intensity Interval Training:

High-intensity interval training (HIIT) also called High-Intensity Intermittent Exercise (HIIE) or sprint interval training, is an enhanced form of interval training an exercise strategy alternating periods of short intense anaerobic exercise with less-intense recovery periods. HIIT is a form of cardiovascular exercise. Usual HIIT sessions may vary from 7–20 minutes. These short intense workouts provide improved athletic capacity and condition, improved glucose metabolism and improved fat burning.

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Interval-Training Sessions Designed:

The idea is to set up work to active-recovery ratios (work active-recovery) in intervals of minutes. For instance let's say you usually train comfortably at 6 mph on the treadmill. So after your warm up and a few minutes at 6 mph you sprint for one minute at 7.5 mph and then jog again at 6 mph for three minutes (1:3 ratio:

a total of four minutes). You continue these intervals for your entire workout and then cool down for about five minutes.

Methodology:

For the purpose of the study 45 Men students were selected from YMCA College of physical education, Chennai. The subject's age ranged between 18 - 25 years. The method used to collect speed was (50 meter run), Muscular strength was (Pull-ups), Muscular endurance (Push-ups) and agility was (Shuttle run 6*10 meters). Pre and post-test were performed and the collected data were statistically analyzed using an ANCOVA test.

Results:

Table 1: Computation of Analysis of Covariance of Training Groups and Control Group on Speed

Test	EX 1	EX 2	CON	SV	SS	Df	MS	F	TV
Pre test	7.87	7.80	8.45	Between	3.84	2	1.920	2.11	3.22
				Within	38.23	42	0.91		
Post test	5.96	5.88	9.01	Between	95.49	2	47.74	88.88	
				Within	22.56	42	0.54		
Adjusted	6.01	5.95	8.90	Between	77.39	2	38.70	81.08	
				Within	19.567	41	0.48		

*Significant at 0.05 level.

As shown in Table I, the obtained F value on the scores of pre-test means 2.11 was less than the required table of 3.22 value, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences. The obtained F value on post-test means was 88.88, which was greater than the required table value of 3.22 the study was significant. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 81.08 was greater than the required table value of 3.22 and hence it was accepted that there was significant differences among the treated groups.

Table 2: Scheffe's Confidence Interval Test Scores on Speed

EX 1	EX 2	CON	MD	CI
6.01	5.95	-	0.06	0.63
6.01	-	8.90	-2.89*	0.63
-	5.95	8.90	-2.95*	0.63

***** Significant at 0.05

The post hoc analysis of obtained ordered adjusted means proved that (1) there was significant differences existed between High intensity interval Training and control group (2) there was significant differences existed between very high intensity interval Training and control group and (3) there was no significant difference between High intensity interval Training group and very high intensity interval Training group on speed.

Table 3: Computation of Analysis of Covariance of Training Groups and Control Group on Agility

Test	EX 1	EX 2	CON	SV	SS	Df	MS	F	TV
Pre Test	20.23	20.23	20.38	Between	0.23	2	0.117	0.14	3.22568
				Within	35.20	42	0.84		
Post Test	19.43	19.55	20.16	Between	4.63	2	2.31	4.30	
				Within	22.60	42	0.54		
Adjusted	19.46	19.59	20.09	Between	3.25	2	1.63	15.61	
				Within	4.271	41	0.10		

*Significant at 0.05 level.

As shown in Table, the obtained F value on the scores of pre-test means 0.14 was less than the required table of 3.22 value, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences. The obtained F value on post-test means was 4.30, which was greater than the required table value of 3.22 the study was significant. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 15.61 was greater than the required table value of 3.22 and hence it was accepted that there was significant differences among the treated groups.

Table 4: Scheffe's Confidence Interval Test Scores on Agility

EX 1	EX 2	CON	MD	CI
19.46	19.59	-	-0.12	0.29
19.46	-	20.09	-0.62	0.29
-	19.59	20.09	-0.50	0.29

***** Significant at 0.05

The post hoc analysis of obtained ordered adjusted means proved that (1) there was significant differences existed between High intensity interval Training and control group (2) there was significant differences existed between very high intensity interval Training and control group and (3) there was no significant difference between High intensity interval Training group and very high intensity interval Training group on agility.

Table 5: Computation of Analysis of Covariance of Training Groups and Control Group on Muscular Endurance

Test	EX 1	EX 2	CON	SV	SS	df	MS	F	TV
Pre test	32.46667	34.73333	34.53333	Between	47.244	2	23.6222	0.44	3.22
				Within	2236.4	42	53.2476		
Post test	36.6	37.86667	35.2	Between	53.37777	2	26.6888	0.54	
				Within	2069.7333	42	49.2793		
Adjusted	37.96969	37.08699	34.61	Between	90.231	2	45.1154	31.45*	
				Within	58.811	41	1.43441		

*Significant at 0.05 level.

As shown in Table, the obtained F value on the scores of pre-test means 0.44 was less than the required table of 3.22 value, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences. The obtained F value on post-test means was 0.54, which was lesser than the required table value of 3.22 the study was not significant. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 31.45 was greater than the required table value of 3.22 and hence it was accepted that there was significant differences among the treated groups.

Table 6: Scheffe's Confidence Interval Test Scores on Muscular Endurance

EX 1	EX 2	CON	MD	CI
37.97	37.09	-	0.88	1.12
37.97	-	34.61	3.36*	1.12
	37.09	34.61	2.48*	1.12

* Significant at 0.05 level of confidence

The post hoc analysis of obtained ordered adjusted means proved that (1) there was significant differences existed between High intensity interval Training and control group (2) there was significant differences existed between very high intensity interval Training and control group and (3) there was no significant difference between High intensity interval Training group and very high intensity interval Training group on muscular endurance.

Table 7: Computation of Analysis of Covariance of Training Groups and Control Group on Muscular Strength

Test	EX 1	EX 2	CON	SV	SS	Df	MS	F	TV
Pre Test	15.33333	16.8	16.2	Between	16.311111	2	8.155556	1.249514	3.22
				Within	274.13333	42	6.526984		
Post Test	18.06667	19.6	16.2	Between	86.977778	2	43.48889	6.946755*	
				Within	262.93333	42	6.260317		
Adjusted	18.81532	18.93691	16.11	Between	76.36	2	38.18017	174.9264*	
				Within	8.949	41	0.218264		

* Significant at 0.05 level.

As shown in Table, the obtained F value on the scores of pre-test means 1.24 was less than the required table of 3.22 value, which proved that the random assignment of the subjects were successful and their scores in speed before the training were equal and there was no significant differences. The obtained F value on post-test means was 6.94, which was greater than the required table value of 3.22 the study was significant. Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 174.92 was greater than the required table value of 3.22 and hence it was accepted that there was significant differences among the treated groups.

Table 8: Scheffe's Confidence Interval Test Scores on Muscular Strength

EX 1	EX 2	CON	MD	CI
18.82	18.94	-	0.12	0.44
18.82	-	16.11	2.70*	0.44
	18.94	16.11	2.82*	0.44

***** Significant at 0.05

The post hoc analysis of obtained ordered adjusted means proved that (1) there was significant differences existed between High intensity interval Training and control group (2) there was significant differences existed between very high intensity interval Training and control group and (3) there was no significant difference between High intensity interval Training group and very high intensity interval Training group on muscular strength.

Conclusions:

It was concluded that there was a significant improvement on Speed, Agility, Muscular strength and Muscular Endurance due to six weeks training compared to control group.

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