

EFFECT OF AEROBIC TRAINING AND STRENGTH ENDURANCE TRAINING ON SELECTED PHYSICAL VARIABLES AMONG FOOTBALL PLAYERS

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Abstract

The primary goal of training is to encourage biological adaptation in order to enhance performance in a particular task. Certain training and loading must be done in order to hasten physiological progress and change. The body goes through a number of training changes that boost efficiency when a person exercises at a level that is near to normal. At different levels, different training methods are employed to improve different facets of physical and motor fitness. This study is to find out effect of aerobic endurance training and strength endurance training on selected physical, physiological and anthropometric variables among football players for this research purpose of the study a total sixty football players were selected from football academy of Ernakulum, Kerala. the ages of the participants ranged from 17 to 21 years and were selected by random sampling method. the participants have a good record for participation in physical education and sports activities. the medical history of the participants was also investigated and medical fitness certificate was obtained from medical practitioner. consent was also sought from parents and teacher before including the students in the study. All the participants volunteered in the study. the participants were explained about the purpose, methods and importance of the study. The ANCOVA was engaged as a statistical system in this study. The Scheffé S test was worn as a after the event test when the modified post examination means' "F" ratio was shown to be significant at the 0.05 level of confidence. aerobic endurance training and strength endurance training groups on flexibility and explosive power. It was also concluded that the aerobic training or strength endurance training result in the improvement in physical variables had significant difference when compared to the treatment at all nonintervention group.

Key word: aerobic training, Strength endurance training

Introduction

Sport training is carried out in order to improve athletic performance. Like any other form of human achievement, sporting success is not the consequence of a specific framework or aspect of the human condition. On the contrary, it is the result of the athlete's entire personality. A person's personality is made up of several elements, including psychological, social, physiological, and physical ones. To improve sports performance, an athlete's social and psychological skills must be developed in addition to their physical and physiological capabilities. To put it another way, a sportsman's overall personality must be addressed in order to increase his performance. As a result, both directly and indirectly, athletic training tries to improve the sportsman's personality.

The goal of sports training is to maximise individual or team performance within a chosen, regulated athletic discipline. No activity can be performed at its highest level of efficiency in a single day. Efficiency is influenced by a number of interconnected areas. Training for sports is a conscious human action. It's also a goal-driven activity. As a result, sports training must involve the study of sports performance and performance capacity as a subject matter. Without a knowledge of sports performance and performance capacity, no effective and relevant theories or methods of training can be developed. Both trained and untrained athletes tend to benefit from strength training as an adequate and efficient method of enhancing muscular fitness and sport-specific performance Lesinski et al., (2016) and Rhea et al., (2003).

Methodology

For this study is to find out effect of aerobic training and strength endurance training on selected Physical variables flexibility and explosive power among football players for this research purpose of the study a total sixty football players were selected from football academy of Ernakulum, Kerala. All the participants were from the same region and all of them had almost similar kind of food habits and daily activities. The ages of the participants ranged from 17 to 21 years and were selected by random sampling method. the participants have a good record for participation in physical education and sports activities. the medical history of the participants was also investigated and medical fitness certificate was obtained from medical practitioner. consent was also sought from parents and teacher before including the students in the study. all the participants volunteered in the study. The ANCOVA was engaged as a statistical system in this study. The Scheffé S test was worn as a after the event test when the modified post examination means 'F' ratio was shown to be significant at the 0.05 level of confidence

Table – I
analysis of covariance for the pre, post and adjusted post-tests data on flexibility of control and experimental groups

Test	Control group	EG–I	EG–II	SOV	SS	df	MS	F –ratio
Pre-test								
Mean	28.22	27.83	28.55	B.M	4.30	2	2.15	0.21
SD(±)	3.35	2.22	2.14	W.G	420.05	42	10.00	
Post-test								
Mean	28.33	37.44	37.38	B.M	1008.11	2	504.05	69.93*
SD(±)	2.30	2.20	2.09	W.G	302.72	42	7.20	
Adjusted post-test								
Mean	29.33	37.55	37.35	B.S	941.76	2	470.88	62.56
				W.S	308.57	41	7.52	

**Significant at 0.05 level of confidence.*

The table I describes that the pre-test mean values on the flexibility of control, aerobic endurance training and strength endurance training groups are 28.22, 27.83 and 28.55 respectively. The obtained ‘F’ ratio 0.21 for pre-test scores was less than the table value, 3.21 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on flexibility. The post-test

means values of control, aerobic endurance training and strength endurance training groups are 28.33, 37.44 and 37.38 respectively. The obtained ‘F’ ratio 69.93 for post-test scores was greater than the table value 3.21 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on flexibility. The adjusted post-test means of control, aerobic endurance training and strength endurance training groups are 29.33, 37.55, and 37.35. The obtained ‘F’ ratio of 62.56 for adjusted post-test means was greater than the table value of 3.22 for degrees of freedom 2 and 41 required for significance at 0.05 level of confidence on flexibility. The result of the study indicates that there was a significant difference among the adjusted post-test means of control, aerobic endurance training and strength endurance training groups on flexibility.

Table –II
the scheffe’s test for the difference between paired means on flexibility

Control group	EG–I	EG–II	MD	CI
29.33	37.55	--	8.22*	2.54
29.33	--	37.35	8.20*	
--	37.55	37.35	0.20	

*Significant at 0.05 level of confidence.

The table II shows that the mean difference values between control group & aerobic endurance training and control group & strength endurance training, aerobic endurance training group & strength endurance training group are 8.22, 8.20 and 0.20 respectively which are greater than the confidence interval value 2.54 at 0.05 level of confidence. The results of the study showed that there was a significant difference between aerobic endurance training group & strength endurance training group, control group & aerobic endurance training group and control group & strength endurance training group on flexibility.

Figure-I

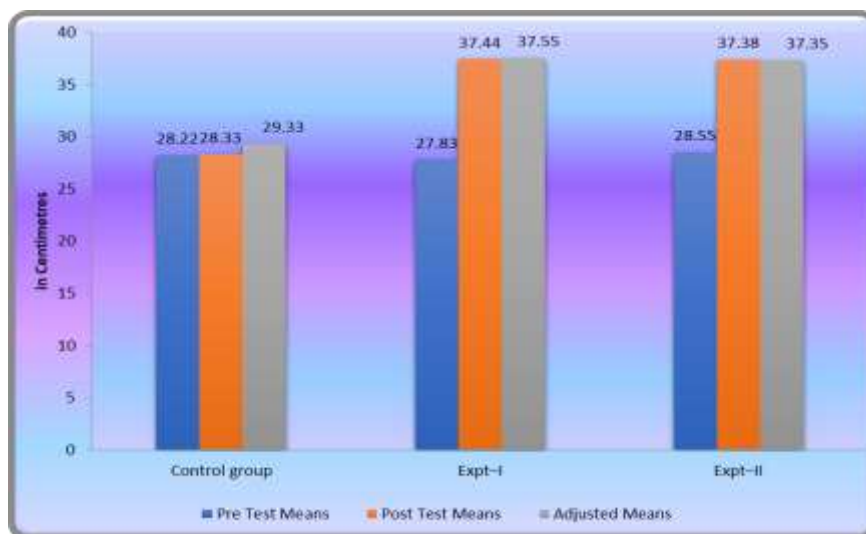


Table – III
analysis of covariance for the pre, post and adjusted post test data on explosive power of control and experimental groups

Test	Control group	EG-I	EG-II	SOV	SS	df	MS	F – ratio
Pre test								
Mean	139.13	138.40	140.33	B.M	1041.91	2	520.95	2.09
SD(±)	4.37	3.64	2.58	W.G	10432.67	42	248.39	
Post test								
Mean	140.47	173.40	169.40	B.M	10123.38	2	5061.69	10.26*
SD(±)	3.99	3.29	2.56	W.G	20710.93	42	493.11	
Adjusted post test								
Mean	141	175.26	169.01	B.S	10031.65	2	5015.83	11.75*
				W.S	17495.55	41	426.72	

*Significant at 0.05 level of confidence.

* (The table values required for significance at 0.05 level of confidence for 2 & 42 and 2 & 41 are 3.22 and 3.23 respectively).

The table III shows that the pre-test mean values on control group, aerobic endurance training and strength endurance training are 139.13, 138.40 and 140.33 respectively. The obtained ‘F’ ratio 2.09 for pre-test scores was less than the table value, 3.21 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on explosive power. The post-test mean values on control group, aerobic endurance training and strength endurance training are 140.47, 173.40 and 169.40 respectively. The obtained ‘F’ ratio 10.26 for post-test scores was greater than the table value 3.21 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on explosive power. The adjusted post-test means of control group, aerobic endurance training and strength endurance training are 141, 175.26 and 169.01. The obtained ‘F’ ratio of 11.75 for adjusted post-test means was greater than the table value of 3.22 for degrees of freedom 2 and 41 required for significance at 0.05 level of confidence on explosive power. The results of the study indicated that there was a significant difference among the adjusted post-test means of on control group, aerobic endurance training and strength endurance training on explosive power.

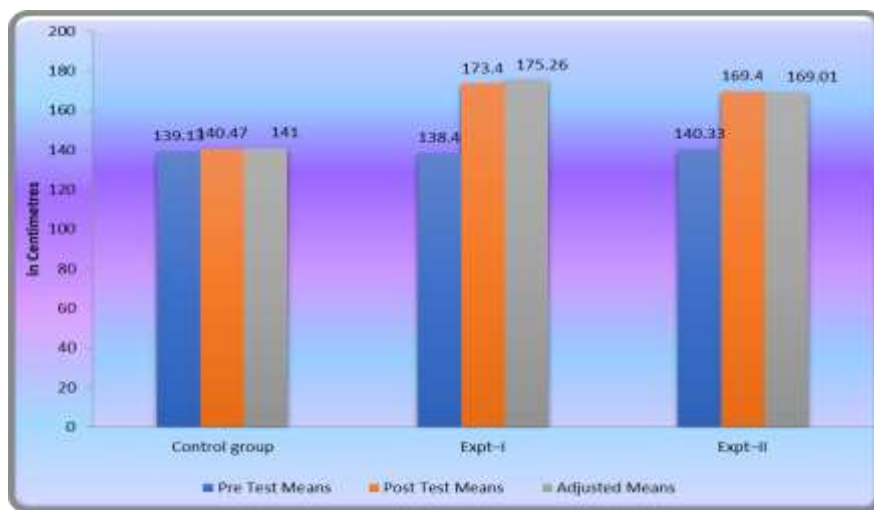
Table – IV
the scheffe’s test for the difference between paired means on explosive power

Control group	EG-I	EG-II	MD	CI
141	175.26	--	34.26*	19.15
141	--	169.01	28.01*	
--	175.26	169.01	6.25	

**Significant at 0.05 level of confidence.*

The table IV shows that the mean difference values between control group & aerobic endurance training, control group & strength endurance training and aerobic endurance training & strength endurance training are 34.26, 28.01 and 6.25 respectively which are greater than the confidence interval value 19.15 at 0.05 level of confidence. The results of the study showed that there was a significant difference between aerobic endurance training & strength endurance training, control group & aerobic endurance training group and control group & strength endurance training group on explosive power.

Figure-II



Conclusion

All the testing and training equipment such as stopwatches, heart rate monitors and measuring tapes were calibrated and exhibited least error. The tester's competency was tested through test-retest reliability method.

Based on the results of the present study the following conclusions were drawn:

1. The result adjusted post-test means in study indicates that there was a significant difference among the adjusted post-test means of control, aerobic endurance training and strength endurance training groups on flexibility according to Keisham Satyaranjan et.al. 2020 and Panel Betül Sekendiz et.al., 2007.
2. The adjusted post-test means of control group, The results of the study indicated that there was a significant difference among the adjusted post-test means of on control group, aerobic endurance training and strength endurance training on explosive power.

It was also concluded that the aerobic training or strength endurance training result in the improvement in physical variables at least to some degrees as compared to the treatment at all nonintervention group.

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