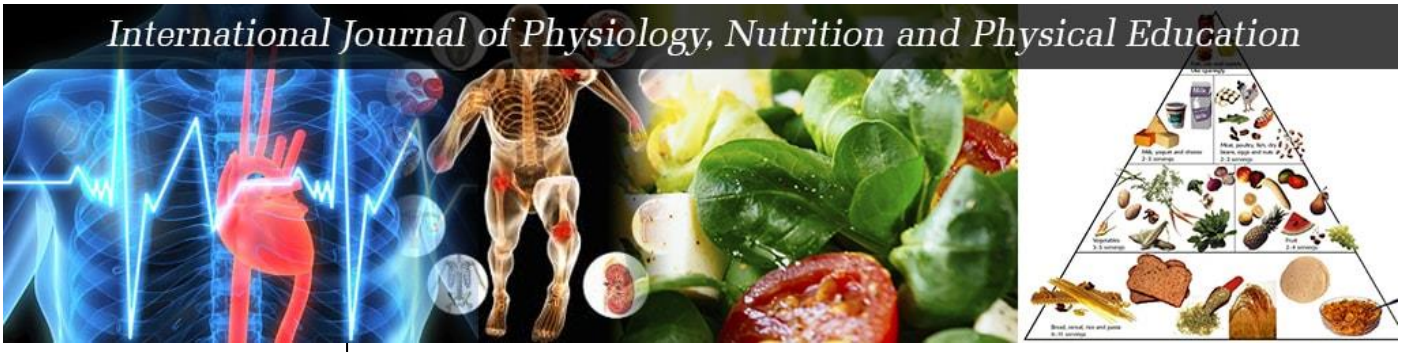

ISSN: 2456-0057
IJPNPE 2019; 4(1): 1467-1470

www.journalofsports.com
Received: 20-11-2018
Accepted: 21-12-2018

Dr. Rajith TR
Lecturer, Department of Physical Education, DB College, Thalayolaparambu, Kottayam, Kerala, India

Correspondence
Dr. Rajith TR
Lecturer, Department of Physical Education, DB College, Thalayolaparambu, Kottayam, Kerala, India

Influence of fitness training and football coaching on selected physiological variables among the school level football players

Dr. Rajith TR

Abstract
Fitness training and football coaching improve the different physiological variables; this type of coaching can be recommended not only for the development of the physiological variables but also for the performance variables. The purpose of the study was to find out the influence of fitness training and football coaching on selected physiological variables among the school level football players. To achieve the purpose of the study, randomly selected 50 boys' football players from Inspire Football Academy and different School in Kuzhimavu, Kerala. Their age level was of 12 to 16 years, the fifty subjects divided into two groups, namely control group and an experimental group consisting of 25 in each. Before and after the coaching camp, both groups subjects were measured of their resting pulse rate (radial pulse method) and cardiorespiratory endurance (Cooper 12 minutes run/ walk test). The experimental group underwent nine weeks of football based fitness training and by the football practice match. The results proved that resting pulse rate and cardiorespiratory endurance significantly develop underwent of the football coaching camp.

Keywords: Resting pulse rate, cardio-respiratory endurance, physiological variables

1. Introduction
Football is a beautiful and popular game compared with other games; the spirit of the game keep throughout the match. One football player requires a lot of physical strength and skill for the perfection of the game. Well-structured training programme creates superior performance; it helps to reduce many disabilities in several ways, including maintaining cardiovascular health, stronger muscles and bones, proper respiratory function and physical components. Coaching camp provides certain benefits for the children, which include improvement of cardio fitness, physical fitness, performance fitness, psychological fitness, motor fitness, etc. Nowadays, youngsters are facing many health problems, planned fitness training and game-based training programme give a better opportunity for them to overcome health problems and achieve good fitness.

Physiological systems are highly related with physical exercises and training. Active participation in the sports and games serves to strengthen and nourish all the organs and systems of the body. During the training periods, the heart pumps faster, and blood pressure increases, thus more oxygen and other nutrients will be sent to all parts of the body. It improves your cardiovascular strength and strengthens your heart.

Resting pulse rate is the number of times the heart beats per minute during complete rest. The higher resting heart rate is independently associated with the development of heart failure [Nanchen, D, *et al*. (2013) [10]. The pulse has been considered as a 'window' into the heart. Decrease your resting pulse rate means your heart is stronger [Mishra, T. K, and Rath, P. K, (2011) [9]. Resting pulse rate is the main symbol of physical fitness; both are inversely correlated, low physical fitness is related to cardiovascular disease in children. We can easily asses the player's strength with the support of the measuring resting pulse rate. These measurements help to avoid excessive exercises.

Cardiorespiratory endurance is the ability to continue dynamic exercise, using large muscle groups, heart and lungs work together for an extended period. High intensity of exercise increases the efficiency of the circulatory, respiratory systems, muscle strength, the heart lungs.

2. Significance of the study

The present study was significant in the following aspects

1. The study would help to find-out a well-structured training programme to develop the physiological variables among the school level football players.
2. The findings of the study would help the coaches, teachers, common people and players to select the most appropriate training or coaching programme.

3. Methodology

3.1 Selection of subjects

The purpose of the study was to find out the influence of fitness training and football coaching on selected physiological variables among the school level football players. To achieve the purpose of the study, 50 subjects were randomly selected from Inspire Football Academy and different Schools in Kuzhimavu, Kerala. The study was delimited to school level football players. Their age delimited within 12 to 16 years. Fifty subjects were divided into 2 equal groups. Group-I underwent the fitness training and football skills training and Group-II was not exposed to any specific training, but they participated in their routine.

3.2 Training Programme

Throughout the coaching camp, the experimental group underwent the fitness training and football coaching for three days in a week. The combined section scheduled in 90 minutes per day including dynamic warm-up, fitness training, football coaching and warm down.

3.3 Criterion variables and test

E	Dependent Variables	Test and Measurements	Unit of Measurement
1	Resting Pulse Rate	Radial Pulse Method	Numbers
2	Cardio Respiratory Endurance	Cooper 12 minutes run/ walk test	Meter

3.4 Statistical techniques

The statistics collected from the control group and experimental group prior to and after the experimentation on selected physiological variables were separately measured. Analysis of Co-variance (ANCOVA) was used to find out the difference between the control group and the experimental group. The test of significance was fixed as a 0.05 level of confidence.

Analysis and Interpretation

The influence the training on resting pulse rate was analyzed separately, and the data is presented below.

Table 1: Analysis of covariance on resting pulse rate of control group and experimental group (Numbers)

Tests/Groups	CG	EG	SV	SS	DF	MS	F
Pre-Test	76.28	76.00	B	0.98	1	0.98	0.20
			w	2349.04	48	48.93	
Post-Test	76.80	70.00	B	578.00	1	578.00	13.01*
			w	2132.00	48	44.42	
Adjusted Post-Test Mean	76.67	70.12	B	535.74	1	535.74	109.19*
			W	230.60	47	4.91	

* Significant at.05 level of confidence (The table value required for 0.05 level of significance with DF 1 and 47 is 4.06)

The table shows that the pre-test means of the control group and fitness training and football coaching in resting pulse rate were 76.28 and 76.00, respectively. The observed F ratio value of 0.20 for pre-test scores was lesser than the table value 4.06 for the degree of freedom 1 and 48 for significance at 0.05 level confidence. The findings of the study show that there was an insignificant difference among the control group and the experimental group on the resting pulse rate. The above table also indicates that pre-test of the control group and the experimental group did not differ significantly on resting pulse rate.

The obtained post-test means of the control group and fitness training and football coaching in resting pulse rate were 78.80 and 70.00, respectively. The observed F ratio value of 13.01 for post-test scores was higher than the table value 4.06 for the degree of freedom 1 and 48 for significance at 0.05 level confidence. The findings of the study show that there was a significant difference between the control group and the experimental group on the resting pulse rate. The above table also indicates that post-test of the control group and the experimental group has a significant difference in resting pulse rate.

The obtained adjusted post-test means of the control group and fitness training and football coaching in resting pulse rate were 76.67 and 70.67, respectively. The observed F ratio value of 109.19 for adjusted post-test scores was higher than the table value 4.06 for the degree of freedom 1 and 47 for significance at 0.05 level confidence. The findings of the study show that there was a significant difference between the control group and the experimental group on the resting pulse rate. The above table also indicates that adjusted post-test means of the control group and the experimental group have a significant difference in resting pulse rate.

Resting pulse rate of pre-test, post-test and adjusted post-tests means of the control group and fitness training and football coaching are graphically represented in figure-I.

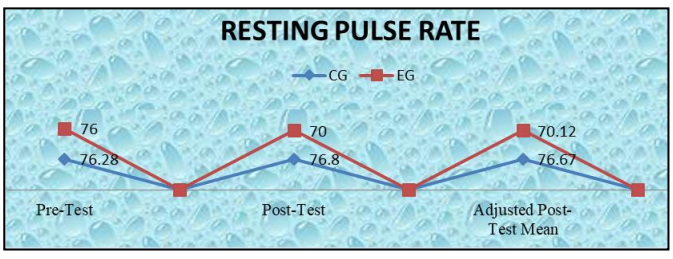

Fig 1: Resting pulse rate of pre, post and adjusted posttests means of control group and experimental group

The influence of the training on respiratory cardio endurance was analyzed separately, and the data is presented below.

Table 2: Analysis of covariance on cardiorespiratory endurance of control group and experimental group (Meter)

Tests/Groups	CG	EG	SV	SS	DF	MS	F
Pre-Test	1922.84	1904.76	B	4086.08	1	4086.08	0.04
			w	4318771.92	48	89974.41	
Post-Test	1854.80	2241.60	B	1870178.00	1	1870178.00	14.73*
			w	6094910.00	48	126977.29	
Adjusted Post-Test Mean	1846.20	2250.19	B	2038166.68	1	2038166.69	43.72*
			W	2191039.91	47	466117.872	

* Significant at.05 level of confidence (The table value required for 0.05 level of significance with DF 1 and 47 is 4.06.)

The table shows that the pre-test means of the control group and fitness training and football coaching group in cardiorespiratory endurance were 1922.84 and 1904.76, respectively. The observed F ratio value 0.04 for pre-test scores was lesser than the table value 4.06 for the degree of freedom 1 and 48 for significance at 0.05 level confidence. The findings of the study reveal that there was an insignificant difference between the control group and the experimental group on cardiorespiratory endurance. The above table also indicates that pre-test of the control group and the experimental group did not differ significantly on cardiorespiratory endurance.

The obtained post-test means of the control group and fitness training and football coaching group in cardiorespiratory endurance were 1854.80 and 2250.19, respectively. The observed F ratio value of 14.73 for post-test scores was greater than the table value 4.06 for the degree of freedom 1 and 48 for significance at 0.05 level confidence. The findings of the present study reveal that there was a significant difference between the control group and the experimental group on cardiorespiratory endurance. The above table also indicates that post-test means of the control group and the experimental group have a significant difference in cardiorespiratory endurance.

The obtained adjusted post-test means of the control group and fitness training and football coaching group in cardiorespiratory endurance were 1846.20 and 2250.19, respectively. The observed F ratio value of 43.72 for adjusted post-test scores was greater than the table value 4.06 for the degree of freedom 1 and 47 for significance at 0.05 level confidence. The findings of the study reveal that there was a significant difference between the control group and the experimental group on cardiorespiratory endurance. The above table also indicates that adjusted post means of the control group and the experimental group have a significant difference in cardiorespiratory endurance.

Cardiorespiratory endurance of adjusted post-tests means of yoga practice group and control group are graphically represented in figure-II.

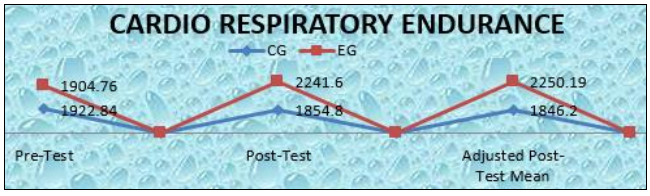

Fig 2: Cardiorespiratory endurance of pre, post and adjusted posttests means of control group and experimental group

Discussion and findings

The present study examined the influence of fitness training and football coaching on resting pulse rate and cardiorespiratory endurance among school football players. The findings show that there is a significant increase in the value of the resting pulse rate and cardiorespiratory endurance. Marcos B. Almeida and Claudio Gil S. Araújo (2013) found that there was a significant change in resting pulse rate by aerobic exercise. Cornelissen, V. A., *et al*., (2009) [5] found that sedentary women pulse rate had a positive impact by ten weeks of aerobic training. Quan, H.L., (2014) [14] showed that physical fitness programme makes a positive change in the resting pulse rate.

The result of the present study was in accordance with the study conducted by Nayef Aljbour (2012) [11]. He investigated that a six weeks continuous training programme has made an effective contribution in upgrading the cardiorespiratory endurance and resting heart rate of the sample of the study. Kulothungan, P. (2016) [8] conducted a study in which the subjects underwent the aerobic cross-training and it improved cardiorespiratory endurance. Thus, to be a successful football player, one has to possess adequate physiological fitness and is very essential. Eight-Weeks training improved physiological variables. The vacation training makes a positive impact not only on all type of sports person but also on the children.

Conclusions

It was concluded that fitness training and football coaching of school football players made a significant difference in resting pulse rate and cardiorespiratory endurance. It was found that for the football players, athletes and common students, this type of coaching camp was very useful to increase their physiological, physical and performance variables. Planned coaching camp increases the children's general health and prevents diseases.

Reference

4 Almeida MB, Araújo CGS. Effects of aerobic training on heart rate, Rev Bras Med Esporte, 2014, 9.

5 Brown SJ. US. Patent No. 8,140,663. Washington, DC: U.S. Patent and Trademark Office, 2012.

6 Senthil Kumar C. Effect of land plyometric and sand plyometric training on selected physical and physiological variables among hockey players, International Journal of Physical Education, Sports and Health. 2016; 3(3):540-544.

7 Cornelissen VA, Verheyden B, Aubert AE, Fagard RH. Effects of aerobic training intensity on resting, exercise and post-exercise blood pressure, heart rate and heart-rate variability. Journal of Human Hypertension. 2009; 24(3):175-182. https://doi.org/10.1038/jhh.2009.51

8 Geneen HS. U.S. Patent No. 3,978,849. Washington, DC: U.S. Patent and Trademark Office, 1976.

9 Holmgren A, Mossfeldt F, Sjöstrand T, Ström G. Effect of Training on Work Capacity, Total Haemoglobin, Blood Volume, Heart Volume and Pulse Rate in

Recumbent and Upright Positions1. Acta Physiologica Scandinavica. 1960; 50(1):72-83.
10 Kulothungan P. Effect of aerobic cross training and aerobic training on cardiovascular endurance. 2016; 3(3):593-596.
11 Mishra TK, Rath PK. The pivotal role of heart rate in health and disease. 2011: 12(4):297-302.
12 Nanchen D, Leaning MJG, Locatelli I, Cornuz J, Kors JA *et al*. Resting Heart Rate and the Risk of Heart Failure in Healthy Adults The Rotterdam Study. 2013; 403-410.
13 Nayef Aljbour. The Impact of the Continuous Training on the Cardio-Respiratory Endurance of the Students of Basic Stage in the Directorate of Education of Sahas, District Jordan Journal of Education and Practice, 2012, 3(16).
14 Ostchega Y, Porter KS, Hughes J, Dillon CF. Resting Pulse Rate Reference Data for Children, Adolescents, and Adults : the United States. 2011; 41:1999-2008.
15 Peters H, Whincup PH, Cook DG, Law C, Li L. Trends in resting pulse rates in 9 – 11-year-old children in the UK. 2014; 1980–2008:10-14. https://doi.org/10.1136/archdischild-2013-304699
16 Quan HL, Blizzard CL, Sharman JE, Magnussen CG, Dwyer T, Raitakari O *et al.* Heart Rate and the Association of Physical Fitness With Carotid Artery Stiffness, American Journal of Hypertension. 2014; 27(1):65-71.