

Vol III Issue X April 2014

ISSN No :2231-5063

International Multidisciplinary Research Journal

Golden Research Thoughts

Chief Editor
Dr.Tukaram Narayan Shinde

Publisher
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor
Dr.Rajani Dalvi

Honorary
Mr.Ashok Yakkaldevi

Welcome to GRT

RNI MAHMUL/2011/38595

ISSN No.2231-5063

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

International Advisory Board

Flávio de São Pedro Filho Federal University of Rondonia, Brazil	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken	Hasan Baktir English Language and Literature Department, Kayseri
Kamani Perera Regional Center For Strategic Studies, Sri Lanka	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Dept of Chemistry, Lahore University of Management Sciences[PK]
Janaki Sinnasamy Librarian, University of Malaya	Catalina Neculai University of Coventry, UK	Anna Maria Constantinovici AL. I. Cuza University, Romania
Romona Mihaila Spiru Haret University, Romania	Ecaterina Patrascu Spiru Haret University, Bucharest	Horia Patrascu Spiru Haret University, Bucharest,Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pinteau, Spiru Haret University, Romania
Anurag Misra DBS College, Kanpur	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Titus PopPhD, Partium Christian University, Oradea,Romania	George - Calin SERITAN Faculty of Philosophy and Socio-Political Sciences AL. I. Cuza University, IasiMore

Editorial Board

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India	Iresh Swami Ex - VC. Solapur University, Solapur	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University,Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yaliker Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU,Nashik
Salve R. N. Department of Sociology, Shivaji University,Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary,Play India Play,Meerut(U.P.)	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra Maulana Azad National Urdu University
	Sonal Singh, Vikram University, Ujjain	

Address:-Ashok Yakkaldevi 258/34, Raviwar Peth, Solapur - 413 005 Maharashtra, India
Cell : 9595 359 435, Ph No: 02172372010 Email: ayisrj@yahoo.in Website: www.aygrt.isrj.net



GRT EFFECT OF FUNCTIONAL AND AEROBIC TRAINING ON SELECTED FITNESS AND PERFORMANCE VARIABLES AMONG ARIABLES AMONG FOOTBALL PLAYERS AT COLLEGE LEVEL

Sariful Isalm and S. Thirumalaikumar

Part time Ph.D Scholar, Department of Physical Education, Tamil Nadu , Physical Education and Sports University, Chennai.
Associate Professor, Department of Physical Education, Tamil Nadu , Physical Education and Sports University, Chennai.

Abstract:-The Purpose of the study is to find out the effect of functional and aerobic training on selected fitness and performance variables among Football players at College level. Pre test and post test randomized group design was applied to this research. Sixty College men Football players from Kolkatta city were randomly selected and they were assigned into four equal groups. Each group consisted of fifteen subjects. Pre test was conducted for all the Sixty subjects on selected fitness variables namely agility, explosive power and playing ability. Playing ability was measured by experts rating. This initial test scores formed as pre test scores of the subjects. Experimental Group I was exposed to Functional Training (FTG) experimental group II was exposed to Aerobic Training (ATG), Experimental III was exposed combined functional and aerobic training (CFAT) and the control group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all the Sixty subjects were measured on the selected fitness and playing ability. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's Post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The result of the study reveals that the experimental trainings significantly improved fitness variables namely agility, explosive power, and playing ability of the Football players.

Keywords: Functional Training, Aerobic Training Agility, Explosive power, Playing ability.

INTRODUCTION

Training has been explained as programme of exercise designed to improve the skills and increase the skills and increase the capacities as resting heart (Hardayal Singh, 1991)

Aerobic exercise refers to exercise that improves or involve oxygen consumptions by the body. It also refers to use of oxygen in the body's metabolic or energy- generating process.

Functional training is the ability to produce and maintain a balance between mobility and stability along the kinetic chain while performing fundamental patterns.

Every individual possesses a certain standard in each of the components of fitness. It is the quality and quantity of these components that determine overall fitness. Specialization in these components enables players to demonstrate their advanced competence in sport related contexts such as football. Deficiencies in fitness will affect the ability of a player to express technical and tactical abilities during competition. (Gareth Stratton et al., 2004).

Everybody has some degree of fitness. But it varies from individual to individual and in the same individual from time to time. It is a combination of physical attitudes, social adoptability, emotional stability and mental efficiency. (Yobu.A, 2010).

Agility is the ability to change the position and control the movement of the body quickly and efficiently. Agility is central to successful football performance because of the requirements to twist, turn, jump and sprint. Agility refers to the controlled ability to change position and direction rapidly and accurately. Two condition exist under which the ability of the performer should be influenced diversely (1) a reaction of a known type and in a known direction, to a stimulus that is anticipated; and (2) a reaction of an undermined type and in an unknown direction to a set of stimuli that may vary widely and

hence, he somewhat unpredictable. (Gupta, 2003).

Explosive power is the ability to release maximum force in the vertical jump. The predominant requirement for success in a large number of sports skills is explosive power. For the lower body, this is perhaps best exemplified by the vertical jump. It represents the product of strength and speed of movements which is very essential. (Hardayal Singh, 1991).

In the present study playing ability refers to ability of the player to play football during competitions and was assessed by subjective rating.

STATEMENT OF THE PROBLEM

The purpose of the study was to find the effect of functional and aerobic training on selected fitness and performance variables among Football players at College level.

HYPOTHESIS

It was hypothesized that the effect of combined functional training with aerobic training would have significant improvement on selected fitness and playing ability than the aerobic training among Football players at College level.

REVIEW OF LITERATURE

Sujatha (2010) conducted a study on "Effects of functional training and aerobic training on motor fitness, physiological variables and playing ability among state level football players". For this purpose three groups of ten female state level basketball players in each were randomly selected. functional training was given with the football training during the pre competitive phase. Aerobic training was given football training alone during the pre competitive phase. The control group was not exposed to any training. The data were collected first at the beginning (Pre- test) and finally at the end of the experimental period of ten weeks (Post –test). The study was aimed to find out the influence of training on selected dependent variables on motor fitness, physiological, variables and playing ability. The collected data were analyzed by ANCOVA and post hoc test. The results of the study shows that the experimental groups had improved the selected variables namely agility, explosive power and playing ability.

METHODOLOGY

Pre - test and post test randomized group design was applied to this research. Sixty College Football players from Kolkatta city were randomly selected and they were assigned into four equal groups. Each group consisted of fifteen subjects. Pre - test was conducted for all the sixty subjects on selected physical fitness variables namely agility, explosive power and playing ability. Playing ability was measured by experts rating. This initial test scores formed as pre test scores of the subjects. Experimental Group I was exposed to functional training group (FTG), experimental group II was exposed to aerobic Training (ATG), combined functional and aerobic training (CFAT) and the control group was not exposed to any experimental training other than their regular daily activities. The duration of the experimental period was 12 weeks. After the experimental treatment, all the sixty subjects were measured on the selected fitness and playing ability. This final test scores formed as post test scores of the subjects. The pre - test and post - test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's Post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

RESULT AND DISCUSSION ON AGILITY

TABLE I
COMPUTATION OF ANALYSIS OF COVARIANCE ON AGILITY
(Scores in Seconds)

Variables	Test	Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control Group	S.V	S.S	Df	M.S	F
Agility	Pre	16.86	16.93	16.90	16.56	B	1.28	3	0.43	1.21
						W	19.8	56	0.36	
	Post	15.16	15.62	14.67	16.30	B	29.8	3	7.27	17.20*
						W	29.6	56	0.42	
	Adjusted Means	15.13	15.55	14.62	16.45	B	25.8	3	8.62	27.80*
						W	1690	55	0.31	
	Mean gain	1.70	1.31	2.23	0.26	24				

Table F-ratio at 0.05 level of confidence for 3 and 56 (df)=2.77, 3 and 55 (df)=2.77 *Significant

Table I shows that the pre test mean scores of agility of functional training group (FTG) was 16.86 seconds, aerobic training group (ATG) training group was 16.93 seconds, Combined Functional and aerobic training group (CFAT) was 16.90 and control group (CG) was 16.56 seconds. The post test means showed differences due to experimental training and mean values recorded were 15.16, 15.62, 14.67, and 16.30 seconds respectively.

The obtained F value on pre test scores 1.21 was less than the required F value of 2.77 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 17.20 was greater than the required F value of 2.77. This proved that the differences between the post test means of the subjects were significant.

Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 27.80 was greater than the required F value of 2.77. This proved that there was a significant difference among the means due to experimental training on agility. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

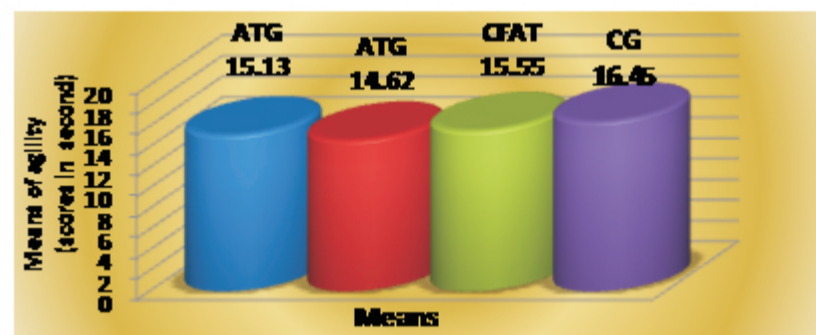
TABLE II
SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON AGILITY
(Scores in Seconds)

MEANS				Mean Difference	Required C.I
Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control group		
15.13	-	14.62	-	0.51	0.59
15.13	15.55	Control Group -	16.45	1.32*	0.59
-	15.55	14.62	16.45	1.83*	0.59
-	-	Control group -	16.45	0.90*	0.59
-	15.55	14.62	-	0.93*	0.59
15.13	-	-	-	0.42	0.59

The multiple mean comparisons shown in Table -II proved that there existed significant difference between the adjusted means of Functional training, and control group, Aerobic training and control group, combined functional and aerobic training (CFAT) and control group, aerobic Training (ATG) and combined functional and aerobic training. There was no significant difference between Functional training and Aerobic training and Functional training and combined functional and aerobic training Combined Functional and Aerobic Training was better than the Functional training, aerobic

training and control groups on agility of the Football players. The result of the study is in corroboration with the study conducted by Sujatha (2012).

Figure -1
Bar diagram ordered adjusted means of agility



RESULT AND DISCUSSION ON EXPLOSIVE POWER

TABLE III
COMPUTATION OF ANALYSIS OF COVARIANCE ON EXPLOSIVE POWER
(Scores in Centimetres)

Test	Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control Group	S.V	S.S	df	M.S	F
Pre	45.33	44.07	44.07	46.20	B	48.98	3	16.33	1.12
					W	813.6	5	14.53	
Post	55.80	55.60	55.47	49.53	B	410.9	6	139.3	13.28*
					W	583.4	5	101.49	
Adjusted Means	55.68	55.84	55.70	49.18	B	466.2	6	155.4	16.30*
					W	524.5	5	9.54	
Mean gain	10.47	11.53	11.40	-3.33		04	5		

Table F-ratio at 0.05 level of confidence for 3 and 56 (df)=2.77, 3 and 55 (df)=2.77 *Significant

Table I shows that the pre test mean scores on explosive power of functional training group (FTG) was 45.33 centimetres, aerobic training group (ATG) was 44.07 centimetres, Combined Functional and aerobic training group (CFAT) was 44.07 centimetres and control group (CG) was 46.20 centimetres. The post test means showed differences due to experimental training and mean values recorded were 55.80, 55.60, 55.47 and 49.53 centimetres respectively.

The obtained F value on pre test scores 1.12 was less than the required F value of 2.77 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 13.28 was greater than the required F value of 2.77. This proved that the differences between the post test means of the subjects were significant.

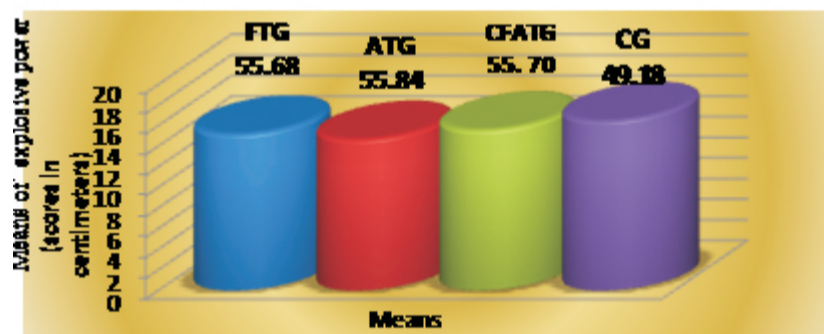
Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 16.30 was greater than the required F value of 2.77. This proved that there was a significant difference among the means due to experimental training on explosive power. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table IV.

TABLE IV
SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON EXPLOSIVE POWER
(Scores in Centimetres)

MEANS				Mean Difference	Required C.I
Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control group		
55.68	55.84	-	-	0.15	3.25
55.68	-	-	49.18	6.51*	3.25
-	55.84	-	49.18	6.66*	3.25
-	-	55.70	49.18	6.53*	3.25
-	55.84	55.70	-	0.13	3.25
55.68	-	55.70	-	0.02	3.25

The multiple mean comparisons shown in Table –IV proved that there existed significant differences between the adjusted means of functional training, and control group, Aerobic training and control group, combined functional and aerobic training (CFAT) and control group. There was no significant difference between functional training group and aerobic training group, aerobic Training (ATG)and combined functional and aerobic training (CFAT) group and combined functional and aerobic training (CFAT) and functional training group. The result of the study is in corroboration with the study conducted by Sujatha (2012).

Figure -2
Bar diagram ordered adjusted means of Explosive power



RESULT AND DISCUSSION ON PLAYIG ABILITY

TABLE V
COMPUTATION OF ANALYSIS OF COVARIANCE ON PLAYIG ABILITY
(Scores in Marks)

Test	Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control Group	S . V	S.S	df	M.S	F
Pre	60.13	60.2	62.67	63.07	B	110.58	3	36.86	1.20
					W	1714.40	56	30.61	
Post	72.93	84.73	75.67	63.47	B	3448.67	3	1149.56	63.42*
					W	1014.93	56	18.12	
Adjusted Means	73.20	84.98	75.45	63.17	B	3507.05	3	1169.02	67.46*
					W	9536019	55	17.33	
Mean gain	12.8	24.53	13	0.4					

Table F-ratio at 0.05 level of confidence for 3 and 56 (df)=2.77, 3 and 55 (df)=2.77 *Significant

Table I shows that the pre test mean scores on explosive power of functional training group (FTG) was 60.13marks, aerobic training group training group (ATG) was 60.20 marks, Combined Functional and aerobic training group (CFAT) was 62.67 marks and control group (CG)was 63.07marks. The post test means showed differences due to experimental training and mean values recorded were 72.93,84.73,75.67and 63.47 marks respectively.

The obtained F value on pre test scores 1.20 was less than the required F value of 2.77 to be significant at 0.05 level. This proved that there was no significant difference between the groups at initial stage and the randomization at the initial stage was equal.

The post test scores analysis proved that there was significant difference between the groups, as the obtained F value 63.42 was greater than the required F value of 2.77. This proved that the differences between the post test means of the subjects were significant.

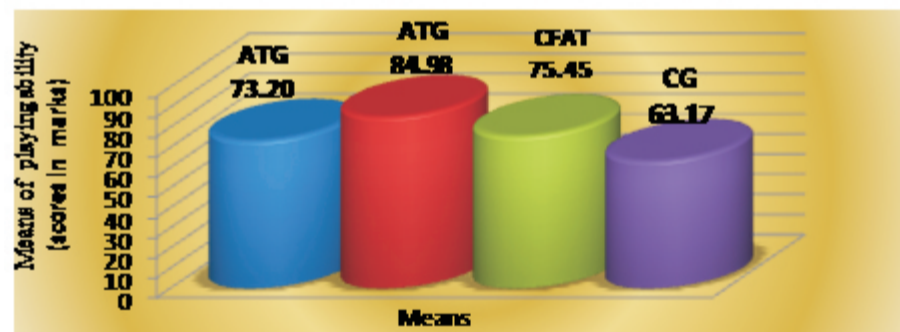
Taking into consideration the pre and post test scores among the groups, adjusted mean scores were calculated and subjected to statistical treatment. The obtained F value of 67.46 was greater than the required F value of 2.77. This proved that there was a significant difference among the means due to experimental training on playing ability. Since significant improvements were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table V.

TABLE V
SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON PLAYING ABILITY
(Scores in Marks)

MEANS				Mean Difference	Required C.I
Functional Training	Aerobic Training	Combined Functional and Aerobic Training	Control group		
73.20	84.98	-	-	11.79*	4.38
73.20	-	-	63.17	10.02*	4.38
-	84.98	Control Group	63.17	21.81*	4.38
-	-	75.45	63.17	12.28*	4.38
-	84.98	Control group	75.45	9.54*	4.38
73.20	-	75.45	-	2.25	4.38

The multiple mean comparisons shown in Table –IV proved that there existed significant differences between the adjusted means of Functional training, and control group, Aerobic training and control group, combined functional and aerobic training (CFAT) and control group, functional training group and Aerobic training group, Combined Functional and aerobic training group and Aerobic training. There was no significant difference between Functional training group and combined functional and aerobic training (CFAT) group. Aerobic training was better than the Functional training group, combined functional and aerobic training (CFAT) group and control group on playing ability of the Football players. The result of the study is in corroboration with the study conducted by Siujatha (2012).

Figure -3
Bar diagram ordered adjusted means of playing ability



CONCLUSIONS

- 1.It was concluded that Aerobic training (ATG), Functional training (ATG) and combined functional and aerobic training (CFAT) showed significant improvement on the selected variables namely, agility, explosive power and playing ability among college level Football players. .
- 2.There was significant difference among the experimental and control groups on the selected variables namely, agility, explosive power and playing ability among college level Football players
- 3.Combined functional and aerobic training (CFAT) was found to be better than Aerobic training and Functional training groups while improving the selected variables such as agility and playing ability of college level Football players.
- 4.In explosive power, three experimental groups namely Aerobic training, combined functional and aerobic training (CFGT) group and Functional training group had equal improvement among college level Football players.

REFERENCES

- 1.Gareth Stratton, Thomas Reilly, A. Mark Williams & Dave Richardson (2004), “Youth Soccer: From Science to Performance” Taylor & Francis e-Library, 80-82.
- 2.Gupta A.K. (2003), “Test and Measurement in Physical Education”, Delhi: Sports Publications,
- 3.Ashok Vihar, 156-162.
- 4.Hardayal Singh (1991), “Science of Sports Training”, New Delhi: D.V.S. Publications, 115.
- 5.Sujatha M (2012), “Effects of functional and aerobic training on motor fitness, physiological variables and playing ability among state level football players” Unpublished Masters Thesis from Tamil Nadu Physical Education and Sports University, Chennai.
- 6.Yobu. A (2010), “Test, Measurement and Evaluation in Physical Education in Physical
- 7.Education and Sports” New Delhi: Friends Publications, 188-189.



Sariful Isalm

Part time Ph.D Scholar, Department of Physical Education, Tamil Nadu , Physical Education and Sports University, Chennai.



S. Thirumalaikumar

Associate Professor, Department of Physical Education, Tamil Nadu , Physical Education and Sports University, Chennai

Publish Research Article International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

Associated and Indexed, India

- * International Scientific Journal Consortium
- * OPEN J-GATE

Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005, Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.net