G Sethu
Research Scholar, Dept. of
Phy.Edu, Sri A.V.V.M Pushpam
College (Autonomous)
Pondicherry

Dr. C Robert Alexandar
Dean of Sciences, Research
Department of Physical Education,
Sri A.V.V.M Pushpam College
(Autonomous) Pondicherry.

Combined and individualized effect of weight training and game specific exercises on selected physical and physiological variables of men football players in Pondicherry State

G Sethu and Dr. C Robert Alexandar

Abstract
The purpose of the study was to find out the combined and individualized effect of weight training and game specific exercises on selected physical and physiological variables of men football players in Pondicherry state. To achieve this purpose of the study forty-five men football players were selected studying Bachelor's degree in the Department of Physical Education and Sports Sciences, Pondicherry University, Pondicherry state, India at randomly. They were divided into three equal groups of each fifteen players as weight training group (Group I), game specific exercises training group (Group II) and act as control group (Group III). Group I and II were underwent their respective training programme for three days per week for twelve weeks who did not underwent any special training programme apart from their regular physical education curriculum. The following physiological variables such as speed and systolic blood pressure were selected as criterion variables. The speed was assessed by taking in seconds and systolic blood pressure was assessed by using sphygmomanometer, stethoscope. All the subjects of three groups were tested on selected criterion variables at prior to and immediately after the training programme as pre and post test selected. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. There was a significant difference among weight training group, game specific exercises training group and control group on physical and physiological variables among speed and systolic blood pressure.

Keywords: weight training, game specific exercises, Physical and Physiological, university men football players.

1. Introduction

Sports have an undeniable role in the society. As society changes so does sports. Games in the early years were local and informal. The rules were simple and changing according to the number of participants and the locale. As cities grew, clubs were formed and interclub competitions began. Eventually cities played against other cities as transportation developed and as coaches, steamboats and railways reduced the time to travel long distance. Finally, there were regional, national and international competitions and corresponding governing bodies. All these developments took time and occurred as cities reached a certain stage of development and inventions occurred to make these improvements possible.

Sport is an Institutionalized competitive activity that involves vigorous physical exertion or the use of relatively complex physical skills by individuals whose participation is motivated by a combination of the intrinsic satisfaction associated with the activity itself and the external rewards earned through participation.

Speed, the rate of motion or equivalently the rate of change of position. Different from instantaneous speed, *average speed* is defined as the total distance covered over the time interval. For example, if a distance of 80 kilometers is driven in 1 hour, the average speed is 80 kilometers per hour. Likewise, if 320 kilometers are travelled in 4 hours, the average speed is also 80 kilometers per hour. When a distance in kilometers (km) is divided by a time in hours (h), the result is in kilometers per hour (km/h). Average speed does not describe the speed variations that may have taken place during shorter time intervals (as it is the entire distance

Correspondence
G Sethu
Research Scholar, Dept. of
Phy.Edu, Sri A.V.V.M Pushpam
College (Autonomous)
Pondicherry.

covered divided by the total time of travel), and so average speed is often quite different from a value of instantaneous speed.

As refereed in the new complete Medical Health Encyclopaedia, the heart is a pump that sends the blood circulating through our body. The pumping action takes place when the left ventricle of the heart contracts. This forces the blood out into the arteries, which expand to receive the ongoing blood. Nevertheless, the arteries have a muscular lining that resists this pressure and thus blood is squeezed out into the smaller vessels of the body. Blood pressure is the amount of pressure of the blood because of the heart pumping and the resistance of the arterial walls. The maximum pressure occurs when the left ventricle contracts, it is called the systolic pressure. The minimum pressure occurs just before the heart beats and it is called diastolic pressure. In other words, the split-second of maximum work, at the peak of the ventricles contraction is called systolic pressure and the split second of peak relaxation, when the blood from atria is drained into the ventricles filling it with blood is called the diastolic pressure.

Blood pressure apparatus measures the force with which blood passes through a major artery, such as in the arm, and the pressure varies corresponding to the hearts systolic and diastolic pressure.

Methodology
The purpose of the study was to find out the combined and individualized effect of weight training and game specific exercises on selected physical and physiological variables of men football players in Pondicherry state. To achieve this purpose of the study forty-five men football players were selected studying Bachelor's degree in the Department of Physical Education and Sports Sciences, Pondicherry University, Pondicherry state, India at randomly. They were divided into three equal groups of each fifteen players as weight training group (Group I), game specific exercises training group (Group II) and act as control group (Group III). Group I and II were underwent their respective training programme for three days per week for twelve weeks who did

not underwent any special training programme apart from their regular physical education curriculum. The following physiological variables such as speed and systolic blood pressure were selected as criterion variables. The speed was assessed by taking in seconds and systolic blood pressure was assessed by using sphygmomanometer, stethoscope. All the subjects of three groups were tested on selected criterion variables at prior to and immediately after the training programme as pre and post test selected. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

Training Programme
During the training period, group I underwent weight training programme, group II underwent game specific exercises programme, for three days per week for twelve weeks in addition to their regular physical education activity, every day workout lasted about 45-60 minutes including warm-up and warm down exercises. Group III acted as control who did not participate any specific training, however, they per-form regular physical education programme.

Statistical Analysis
The data was collected from three groups at prior to and after completion of the training period on selected criterion variables, were statistically examined for significant difference if any, by applying analysis of covariance (ANCOVA). The Scheffe's post hoc test was applied to know the significant difference between groups, if they obtained 'F' ratio was significant. In all cases .05 level of confidence was utilized to test the significance.

Speed
The analysis of covariance of the data obtained for speed of pre-test and post-test of control group weight training group and game specific exercises training group have been presented in Table I.

Table 1: Analysis of Covariance for the Pre and Post Test on Speed of Control Group Weight Training Group and Game Specific Exercises Training Group (In Seconds)

Test	Control group	Weight - training group Expt–A	Game Specific training group Expt-B	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test								
Mean	4.76	4.75	4.74	B.M.	0.04	2	0.02	0.22
SD(±)	0.08	0.10	0.10	W.G.	0.35	42	0.09	
Post-test								
Mean	4.65	4.48	4.58	B.M.	0.23	2	012	52.94*
SD(±)	0.04	0.05	0.05	W.G.	0.09	42	0.02	
Adjusted post-test								
Mean	4.76	4.50	4.61	B.S.	0.48	2	0.24	33.59*
				W.S.	0.29	41	0.01	

*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 I shows that the pre-test mean values on control group, weight training and game specific training are 4.76, 4.75 and 4.74, respectively. The obtained 'F' ratio 0.22 for pre-test scores was less than the table value, 3.22 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on speed. The post-test mean values on control group, weight training and game specific training are 4.65, 4.48 and 4.58 respectively. The obtained 'F' ratio 52.94 for

posttest scores was greater than the table value 3.22 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on speed. The adjusted post-test means of control group, weight training and Game specific training are 4.76, 4.50 and 4.61, respectively. The obtained 'F' ratio of 33.59 for adjusted post-test means was greater than the table value of 3.23 for degrees of freedom 2 and 41 required for significance at 0.05 level of confidence on speed. The result

of the study indicates that there was a significant difference among the adjusted post-test means of control group, weight training and game specific training on speed.

Since the obtained 'F' ratio value was significant, further to find out the paired mean difference, the Scheffe's test was employed and presented in table-II.

Table 2: The Scheffe's Test for The Difference between Paired Means on Speed

Control group	Cross training group Expt-A	Game Specific training group Expt-B	Mean Differences	Confidence Interval Value
-	4.50	4.61	0.10*	
4.76	4.50	-	0.25*	0.04
4.76	-	4.61	0.16*	

*Significant at 0.05 level of confidence.

The table II shows that the mean difference values between

weight training & game specific training, control group & weight training and control group & game specific training are 0.10, 0.25 and 0.16, respectively which are greater than the confidence interval value 0.04 at 0.05 level of confidence. The results of the study showed that there was a significant difference between weight training & game specific training, control group & game specific training and weight training and control group.

The results of the study showed that there were a significant difference between control group & weight training on speed. The adjusted post test mean values of control group, weight training group and game specific training groups on speed.

Systolic Blood Pressure

The analysis of covariance of the data obtained for systolic blood pressure of pre-test and post-test of control group weight training group and game specific exercises training group have been presented in Table I.

Table 3: Analysis of Covariance for the Pre and Post Test on Systolic Blood Pressure of Control Group Weight Training Group and Game Specific Exercises Training Group (Sphygmomanometer, Stethoscope)

Test	Control group	Weight training group Expt–A	Game Specific training group Expt-B	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre-test								
Mean	111.60	111.07	108.27	**B.M.**	96.18	2	48.09	0.55
SD(±)	8.47	7.78	11.42	**W.G.**	3681.47	42	87.65	
Post-test								
Mean	111.67	120.93	116.73	**B.M.**	645.91	2	322.96	4.96*
SD(±)	8.57	8.84	7.40	**W.G.**	2889.20	42	68.79	
Adjusted post- test								
Mean	111.08	120.59	117.66	**B.S.**	708.96	2	354.48	6.81*
				W.S.	2133.34	41	52.03	

*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, weight training and game specific training are 111.60, 111.07 and 108.27 respectively. The obtained 'F' ratio 0.55 for pre-test scores was less than the table value, 3.22 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on systolic blood pressure. The post-test mean values on control group, weight training and game specific training are 111.67, 120.93 and 116.73, respectively. The obtained 'F' ratio 4.69 for post-test scores was greater than the table value 3.22 for degrees of freedom 2 and 42 required for significance at 0.05 level of confidence on systolic blood pressure. The adjusted post-test means of

control group, weight training and game specific training are 111.08, 120.59 and 117.66 respectively. The obtained 'F' ratio of 6.81 for adjusted post-test means was greater than the table value of 3.23 for degrees of freedom 2 and 41 required for significance at 0.05 level of confidence on systolic blood pressure. The result of the study indicates that there was a significant difference among the adjusted post-test means of control group, weight training and game specific training on systolic blood pressure.

Since the obtained 'F' ratio value was significant, further to find out the paired mean difference, the Scheffe's test was employed and presented in table IV.

Table 4: The Scheffe's Test for The Difference between Paired Means on Systolic Blood Pressure

Control group	Weight training group Expt-A	Game Specific training group Expt-B	Mean Differences	Confidence Interval Value
-	120.59	117.66	2.93	
111.08	120.59	-	9.51*	3.66
111.08	-	117.66	6.58*	

*Significant at 0.05 level of confidence.

The table IV shows that the mean difference values between weight training & game specific training, control group & weight training and control group & game specific training are 2.93, 9.51 and 6.58, respectively which are greater than the confidence interval value 3.66 at 0.05 level of confidence. The results of the study showed that there were a significant difference control group & weight training and control group & game specific training on systolic blood pressure.

The results of this study showed that game specific training group has significantly differed on systolic blood pressure when compared to weight training group and control group. Weight training group also significantly differed on systolic blood pressure when compared to control group.

The adjusted post test mean values of control group, weight training group and game specific training groups on systolic blood pressure.

Conclusion

The following conclusions were drawn from the results of the study.

- ✓ There was a significant difference among control group, weight training group and game specific exercises training group on speed.
- ✓ There was a significant difference among control group, weight training group and game specific exercises training group on systolic blood pressure.
- ✓ There was a significant difference improvement on among weight training group, game specific exercises training group and control group, on speed and systolic blood pressure.

References

1. Blessing and Daniel lie. The Effects of the twelve week Training programs on sequential measurements of blood Lipids, Hormones, Cardiovascular function, Body composition and strength in sedentary middle aged males Dissertation Abstracts International 1983; 44(4):95.
2. Brilla and Lorraine Ruth, Effects of Hypomagnesaemia and Exercise on Total cholesterol High Density Lipoprotein cholesterol and lipoprotein profile in rats, Dissertation Abstracts International 1984; 44(11):133.
3. Edge J. Effect of High and Moderate-Intensity Training on Metabolism and Repeated Sprinters, Medicine and Swenca in Sports and Exercise 2005; 37:11.
4. Kokkinos PF. Effects of low and high-repetition training on Lipoprotein Lipid Profiles. Med. Sci. Sports Exercises 1988; 20(1):50-54.
5. Laura La Bella. Blood Pressure Basics, the Rosen Publishing Group, 2010.
6. Lintunen T. Predicting physical activity intentions using a goal perspectives approach: a study of Finnish youth. Scand J Med Sci Sports. 1999; 9(6):344-52.
7. Paul T Willims. The Effects of weight loss by Exercise or by Dieting on plasma High-Density. Lipoprotein (HDL) levels in Men with low, intermediate and Normal-to-High HDL at Baseline, Med Sci Sports Exerc 1995; 27(1):22-28.
8. Sabrina Keats. The World Book Encyclopedia, 1993.