
Research Papers

EFFECT OF VARIED PACKAGES OF TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES OF COLLEGE WOMEN BASKETBALL PLAYERS

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Abstract

The aim of this study is to determine the effect of varied packages of training on selected physiological variables of college women basketball players. Thirty subjects were selected from the Alagappa University College of Physical Education in Karaikudi and their age ranged from 19 to 23 years. The subjects were equally divided into three groups namely control and two experimental groups with ten subjects in each group. Control group (Group I) did not undergo any training programme rather than their daily routine work. The experimental group (Group II) underwent varied packages of training I (General training) and experimental group (Group III) were treated with varied packages of training II (Basketball skill related). Training was given for a period of 8 weeks, trained forty five minutes duration for six weeks except Sunday.

Anaerobic power and Cardio respiratory endurance were measured through field tests. The Anaerobic power and Cardio respiratory endurance was measured before and after the completion of varied packages of training. The results of pre-test and post-test were statistically analysed by using Analysis of Co-variance. The result revealed that Anaerobic power and Cardio respiratory endurance had significant improvement due to the practices of varied packages of training when compared to the control group. The result when compared between the two experimental groups, it was found that the varied packages of training (General training) group had significant effect on Anaerobic power and Cardio respiratory endurance than the varied packages of training (Basketball skill related).

Key words: Varied Package of Training, Basket Ball, Anaerobic Power and Cardiorespiratory Endurance

INTRODUCTION

Sport's training is the total process of preparation of a sportsman through different means and forms for better performance. The sports performance is the result and expression of the total personality of the sportsman Daniel. Training involves periodic assessment of the athletes/players status and progress. Training varies regular increase in the difficulty of task performance. Training suggests, some form of gradual increase in performance output over an extended period of time, specific physical fitness is a readiness of each system of the body to meet special demands (Ramaswami, 1992). Training is a programme of exercise designed under various categories based upon different kind of scientific principles to improve the skills of a particular game/athletic event and also increase the capacities of the energy of an athlete or a players. The packages of this study includes the following trainings:- they are circuit training, weight training, interval training, aerobic training and anaerobic training (Fox, 1984).

The aerobic and anaerobic training include primarily a cellular effects where the aerobic changes are noticed to both in the muscle tissue as well as the oxygen transports system. Reduced heart

rate recovery. Increased cardiac hypertrophy, increased stroke volume, increased cardiac output, reduced blood pressure at rest and working period. Increased blood volume, Hemoglobin contents and Red Blood corpuscles (RBC) reduced blood flow to the working muscles will occur in our body, because of this training. Varied packages of training type of exercise is of short duration and does not depend on the body's ability to supply oxygen, example : basketball, tennis, soccer, long distance, etcetera. (Hooks, 1962).

.METHODOLOGY

The purpose of the study was to find out the effect of varied packages of training on selected physiological variables of college women basketball players. Thirty subjects were selected from the Alagappa University College of Physical Education in Karaikudi and their age ranged from 19 to 23 years. The subjects were equally divided into three groups namely control and two experimental groups with ten subjects in each group. Control group (Group I) did not undergo any training programme rather than their daily routine work. The experimental group (Group II) underwent varied packages of training I (General training) and experimental group (Group III) was treated with varied packages of training II (Basketball skill related). Training was given for a period of 8 weeks, trained forty five minutes duration for six weeks except Sunday. Anaerobic power and Cardio respiratory endurance were measured through 50 yards run with 15 yards running start and Cooper's 12min run/walk test. The results of pre-test and post-test were compared by using Analysis of Covariance (ANCOVA).

Table – I
Analysis of Covariance for Control Group and Experimental Group on Anaerobic Power and Cardio Respiratory Endurance

Variables	Test	CG	EG I	EG II	SOV	Sum of square	df	Mean square	F ratio
Anaerobic Power	Pre test	7.93	8.05	7.95	B	0.08	2	0.04	0.8
					W	1.43	27	0.05	
	Post test	7.98	7.95	7.65	B	0.59	2	0.295	5.78*
					W	1.38	27	0.051	
	Adjusted Post test	8.02	7.87	7.69	B	0.54	2	0.27	27.00*
					W	0.28	27	0.01	
Cardio respiratory endurance	Pre test	1853	1900	1914.5	B	20672	2	10336	0.44
					W	628332	27	2327156	
	Post test	1819	2000	2022	B	248180	2	124090	6.66*
					W	503050	27	18631.48	
	Adjusted Post test	1850.59	1990.79	2000.47	B	125485.34	2	62742.67	25.77*
					W	63302.16	27	2434.7	

* Significant at 0.05 level.

The table value required for significance at 0.05 level of confidence with degrees of freedom 2 and 27 are 3.35 respectively

The pre test means of control group and two experimental groups on anaerobic power is 7.93, 7.95 and 8.05. The obtained 'F' ratio value is 0.8 for the pre test mean is lesser than the required table value 3.55 for 2 & 27 degrees of freedom at 0.05 level of significance. This reveals that there is no statistically significant difference between the control and the experimental groups on Anaerobic Power before the commencement of the experimental training. It is inferred that the selection of the subjects for the two groups are successful. The post test means of control group and two experimental groups is 7.98, 7.65 and 7.95. The obtained 'F' ratio value is 5.78 for the post test mean is greater than the required table value 3.55 for 2 & 27 degrees of freedom at 0.05 level of significance. This reveals that there is statistical difference between the control and the experimental groups on Anaerobic Power after the commencement of the experimental training. The adjusted post test means on Anaerobic Power of the control and the experimental groups are 8.02, 7.69 and 7.87 respectively. The obtained 'F' ratio value of 27.00 for the adjusted post test data is greater than the required table value 3.35 for 2 & 28 degrees of

freedom at 0.05 level of significance. It reveals that there is significant decrease on time in Anaerobic Power as a result of the experimental training.

The pre test means of control group and two experimental groups on Cardio respiratory endurance is 1853, 1914.5 and 1900. The obtained 'F' ratio value is 0.44 for the pre test mean is lesser than the required table value 3.55 for 2 & 27 degrees of freedom at 0.05 level of significance. This reveals that there is no statistically significant difference between the control and the experimental groups on Cardio respiratory endurance before the commencement of the experimental training. It is inferred that the selection of the subjects for the two groups are successful. The post test means of control group and two experimental groups is 1819, 2022 and 2000. The obtained 'F' ratio value is 6.66 for the post test mean is greater than the required table value 3.55 for 2 & 27 degrees of freedom at 0.05 level of significance. This reveals that there is statistical difference between the control and the experimental groups on Cardio respiratory endurance after the commencement of the experimental training. The adjusted post test means on Cardio respiratory endurance of the control and the experimental groups are 1850.59, 2000.47 and 1990.79 respectively. The obtained 'F' ratio value of 25.77 for the adjusted post test data is greater than the required table value 3.35 for 2 & 28 degrees of freedom at 0.05 level of significance. It reveals that there is significant increase Cardio respiratory endurance as a result of the experimental training.

Since the result showed significant difference among the three groups, the scheffe's post hoc test was used to find out the significant difference between the paired means.

**ORDERED ADJUSTED ANAEROBIC POWER AND CARDIO RESPIRATORY
ENDURANCE MEANS AND DIFFERENCE BETWEEN MEANS FOR EXPERIMENTAL
GROUPS AND CONTROL GROUP IN
ANALYSIS OF COVARIANCE PROBLEM**

S. No	Variables	Adjusted Mean			Mean Difference		Confidence interval value
		Control Group	Experimental Group I	Experimental Group II			
1.	Anaerobic Power	8.02	7.87	..	0.15	S	0.13
		..	7.89	7.69	0.20	S	0.13
		8.02	..	7.69	0.33	S	0.13
2.	Cardio Respiratory Endurance	1850.59	1990.79	..	140.2	S	57.16
		..	1990.79	2000.47	9.68	NS	57.16
		1850.59	..	2000.47	149.88	S	57.16

Table shows that the Scheffe's post-hoc method of testing the significance for the differences between the paired means following a significant analysis of co variance for varied exercise training groups and control groups. The adjusted Anaerobic Power efficiency means in order of magnitude and the difference between the means for the control and two experimental groups are given in the table. The mean differences between the control and varied exercise training group (gendral training) was 0.15, which was significant at 0.05 level of confidence interval. In the comparison between varied exercise training group (gendral training) and varied exercise training group (Basketball skill related) the difference was 0.20, which was significant at 0.05 level of confidence interval. The ordered adjusted aerobic power means and differences between control group and varied exercise training group (Basketball skill related) was 0.33, which was significant at 0.05 level of confidence interval. This indicates that the varied exercise training group (Basketball skill related) had a better improvement when compared to the varied exercise training group (gendral training) and control group. The differences in means of varied exercise training group (Basketball skill related), varied exercise training group (gendral training) and control group is presented in fig.

GRAPHICAL REPRESENTATION ON PRE-TEST, POST-TEST AND ADJUSTED POST-TEST MEANS ON ANAEROBIC POWER OF CONTROL GROUP AND EXPERIMENTAL GROUPS

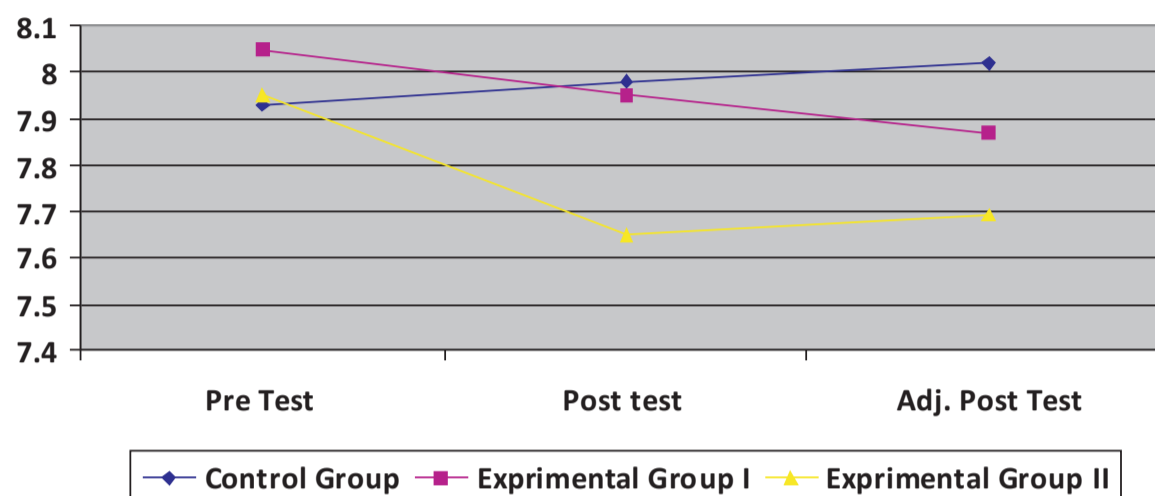
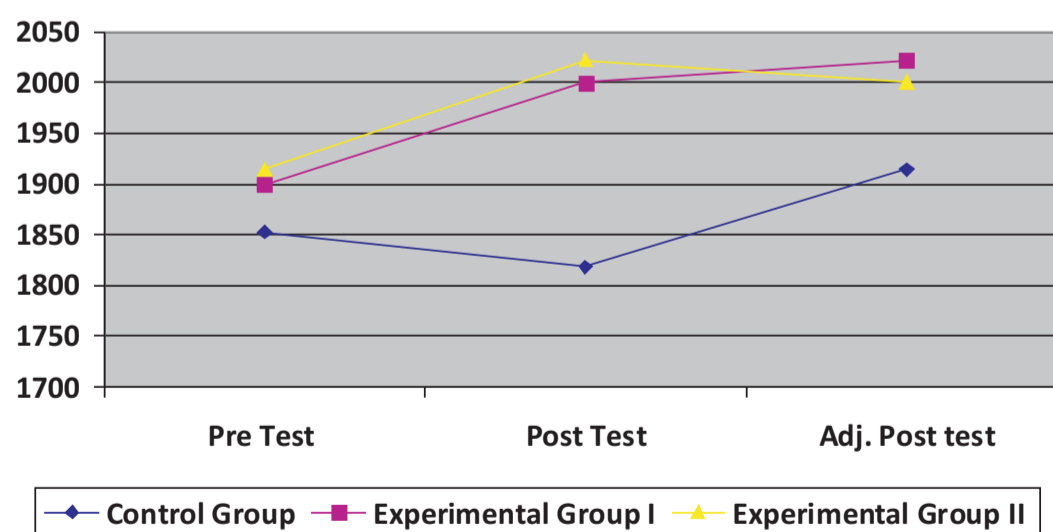


Table shows that the Scheffe's post-hoc method of testing the significance for the differences between the paired means following a significant analysis of co variance for varied exercise training groups and control groups. The adjusted Cardio respiratory endurance efficiency means in order of magnitude and the difference between the means for the control and two experimental groups are given in the table. The mean differences between the control and varied exercise training group (general training) was 140.2, which was significant at 0.05 level of confidence interval. In the comparison between varied exercise training group (general training) and varied exercise training group (Basketball skill related) the difference was 9.68, which was not significant at 0.05 level of confidence interval. The ordered adjusted cardiorespiratory endurance means and differences between control group and varied exercise training group (Basketball skill related) was 149.88, which was significant at 0.05 level of confidence interval. This indicates that the varied exercise training group (Basketball skill related) had a better improvement when compared to the varied exercise training group (general training) and control group. The differences in means of varied exercise training group (Basketball skill related), varied exercise training group (general training) and control group is presented in fig.

GRAPHICAL REPRESENTATION ON PRE-TEST, POST-TEST AND ADJUSTED POST-TEST MEANS ON CARDIO RESPIRATORY ENDURANCE OF CONTROL GROUP AND EXPERIMENTAL GROUPS



DISCUSSION

The study was framed to analyze the effect of varied packages of training on selected physiological variables of college women basketball players (aged 19 and 23 years). The subjects were given training on varied exercise training group package I, package II continuously for a period of 6 weeks for six days in a week. The selected physiological variables are Anaerobic Power and Cardio respiratory endurance. The main aim of the study was to maintain and enhance the efficiency of physical fitness.

The result of the study is in consonance with the findings of the following studies by Leubbers PE et.al (November 2003), Madusoothan (1995), Nummila, A. Amero and H. Rusko (June 1992) and Reymond J. Standacher (1983).

CONCLUSION

It was observed from the pre test results, that there is no significant difference among control and experimental groups. While the post test results of control and experimental groups which was analyzed statistically revealed that, there is a significant difference among the three groups. The training program has influenced the experimental groups where as there is no effect in the control group.

In the analysis of co-variance on Anaerobic Power and Cardio respiratory endurance among control and two experimental groups, a significant difference was seen and which source light on the applicable effect of varied exercise training group package I, package II. From the statistical analysis it is clear that both the training programmes had its own effects. But the package II training showed more effects in the physiological variable Anaerobic Power and Cardio respiratory endurance when compared to package I and control group.

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