_____

EFFECTS OF SELECTED PHYSICAL ACTIVITIES ON BIO CHEMICAL VARIABLES AMONG UNIVERSITY LEVEL CRICKET PLAYERS

Dr. S. Rameshkumar[1] , T. Rajaram[2]   and M. Balu[3]
[1]Director of Physical Education SRKV College of Arts and Science Coimbatore.
[2]Director of Physical Education Chikkanna Govt Arts College Tiruppur.
[3]Research Scholar.

_____

ABSTRACT

Man is being called an active animal. He responds to his environment by possessing capacity and desire through physical movement. During movement he is dependent upon his skeletal muscles, his nervous system, his circulatory system, and many other parts of the body. All components of his body are intern dependent upon movement for their continued vigor, health and development. Physical activity is one of numerous factors, which influence the growth and development by children and adolescents. It is of the utmost importance to know the physiological mechanism that sustains and acts as the, basis of everybody response to exercise. In the course of physical exertion a number of co-ordinates and compensatory adjustments takes place throughout the body. It is the general consensus that enduring benefits to health in respect of desirable body composition require the incorporation of habituate physical activity from an early age.The purpose of the study was to investigate the effects of selected physical activities on bio chemical variables among university level cricket players. The subjects were selected from Bharthiar University affiliated colleges. According to the University Records, the average age of the subjects was ranging between Eighteen to Twenty five years. The subjects were assigned at random to one control group and one experimental group, each consisting of Ninety (90) subjects. The experimental group was asked to take part in selected physical activities for ten weeks. After consulting experts in the field and also going through the available literature on the subject, the following Biochemical variables were selected for this study. Biochemical variables are Resting Diastolic Pressure, Hemoglobin and Serum Cholesterol. The analysis of data revealed that the training programme showed significant changes in some selected variables in Resting systolic pressure, Resting diastolic pressure, Hemoglobin and Serum Cholesterol due to ten weeks of training programme for selected physical activities .

KEYWORDS: Resting Systolic Pressure.

INTRODUCTION:

Man is being called an active animal. He responds to his environment by possessing capacity and desire through physical movement. During movement he is dependent upon his skeletal muscles, his nervous system, his circulatory system, and many other parts of the body. All components of his body are intern dependent upon movement for their continued vigor, health and development.

TRAINING PROCEDURE

The programmes of different physical activities were prepared with great care. Exercise were chosen primarily to warm-up the complete body.The following selected physical activities for the study. General warmin up:15minuteStretching, Briskwalking,Jogging,Hopping, Running,Skipping Calisthenics: 10minutes Arm exercises, Trunkexercises, Legexercises and, Abdominal exercises Team Games:20 minutes Foot Ball, Volley Ball, Kabaddi, Kho-Kho.The investigator prepared the training schedule for the experiment. The experimental subjects took training under the supervision of the investigator who was assisted by trained Physical Education Teachers. The training programme was conducted thrice a week for ten weeks with 45 minutes duration i.e. from 7.00 to 7.45 a.m. The time-table for training schedule was prepared by the investigator in consultation with the University authorities.

SELECTION OF SUBJECTS

The subjects were selected from Bharathiar university According to the University Records, the average age of the subjects was ranging between Eighteen to Twenty five years.The subjects were assigned at random to one control group and one experimental group, each consisting of Ninety (90) subjects.

Statistical Technique

The data collected from the groups on selected physiological variables were analyzed statistically through Analysis of Co-variance as suggested by Clark and Clark. The level of confidence was set at 0.05 level.

TABLE – 1
Computation of Analysis of Covariance on Resting Diastolic Pressure of Control and Experimental groups between Pre-Test and Post-Test.
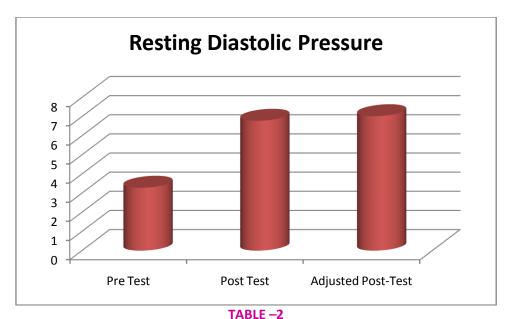
	Control Group	Experimental Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	74.866	72.233	BGM WGM	312.050 16898.500	1 178	312.050 94.935	3.2870
Post-Test Means	73.700	69.966	BGM WGM	627.200 16449.800	1 178	627.200 92.414	*6.7868
Adjusted Post-Test Means	100.993	94.938	BGM WGM	640.931 16449.800	1 178	640.931 62.414	*7.0254

From the Table **1** it was observed that the pre-test mean values of control and experimental groups were **74.866** and **72.233** respectively. The obtained F.ratio **3.2870 was insignificant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was Lesser than the Table F-ratios 2.90.

The Post-Test means of the Control and Experimental groups were **73.700** and **69.966** respectively. The obtained F-ratio **6.7868** was **significant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Greater** than the Table F-ratios 2.90.The adjusted Post-Test means of the Control and Experimental groups were **100.993** and **94.938** respectively. The obtained F-ratio **7.0254** was **significant** at 0.05 and 0.01 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Greater** than the Table F-ratios 2.90. The above results indicate that the mean values of the **Resting Diastolic Pressure** was decreased significantly due to the physical activities done by the Experimental groups. The results were also indicating that the Ten weeks of training programme consisting of selected

physical activities show significant change in the mean performance of **Resting Diastolic Pressure** of Experimental group.

Figure 1
Computation of Analysis of Covariance on Resting Diastolic Pressure of Control and Experimental groups between Pre-Test and Post-Test.

TABLE –2
Computation of Analysis of Variance and Covariance on Hemoglobin of Control and Experimental groups between Pre-Test and Post-Test.

	Control Group	Experimental Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	10.556	10.756	BGM WGM	1.800 114..742	1 178	1.800 0.644	2.7924
Post-Test Means	10.903	11.516	BGM WGM	16.928 67.234	1 178	16.928 0.377	*4.8164
Adjusted Post-Test Means	14.116	17.938	BGM WGM	657.434 67.234	1 178	657.434 0.377	*7.0687

From the Table **2** it was observed that the pre-test mean values of control and experimental groups were **10.556** and **10.756** respectively. The obtained F.ratio **2.7924 was insignificant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was Lesser than the Table F-ratios 2.90.The Post-Test means of the Control and Experimental groups were **10.903** and **11.516** respectively. The obtained F-ratio **4.8164** was **significant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Greater** than the Table F-ratios 2.90. The adjusted Post-Test means of the Control and Experimental groups were **14.116** and **17.938** respectively. The obtained F-ratio **7.0687** was **significant** at 0.05 and 0.01 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Greater** than the Table F-ratios 2.90.The above results indicate that the mean values of the **Hemoglobin** was increased significantly due to the physical activities done by the Experimental groups. The results were

_____
Journal for all Subjects : www.lbp.world

3

also indicating that the Ten weeks of training programme consisting of selected physical activities show significant change in the mean performance of **Hemoglobin** of Experimental group.

Figure 2
Computation of Analysis of Variance and Covariance on Hemoglobin of Control and Experimental groups between Pre-Test and Post-Test.
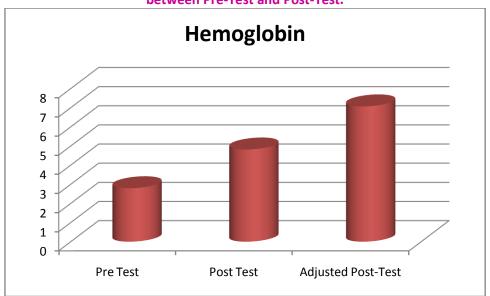

TABLE –3
Computation of Analysis of Covariance on Serum Cholesterol of Control and Experimental groups between Pre-Test and Post-Test.
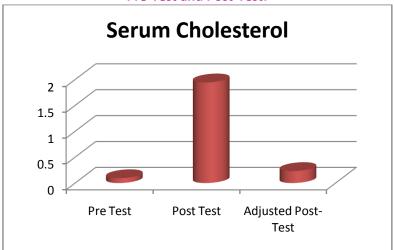
	Control Group	Experimental Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	166.888	167.333	BGM WGM	8.888 17088.888	1 178	8.888 96.005	0.0926
Post-Test Means	165.000	163.333	BGM WGM	125.000 11450.000	1 178	125.000 64.325	1.9432
Adjusted Post-Test Means	173.452	167.317	BGM WGM	33.728 11450.000	1 178	33.728 64.325	0.2303

From the Table **3** it was observed that the pre-test mean values of control and experimental groups were **166.888** and **167.333** respectively. The obtained F.ratio **0.0926 was insignificant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was Lesser than the Table F-ratios 2.90.The Post-Test means of the Control and Experimental groups were **165.000** and **163.333** respectively. The obtained F-ratio **1.9432** was **significant** at 0.05 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Lesser** than the Table F-ratios 2.90.

_____
Journal for all Subjects : www.lbp.world

4

The adjusted Post-Test means of the Control and Experimental groups were **173.452** and **167.317** respectively. The obtained F-ratio **0.2303** was **significant** at 0.05 and 0.01 levels of confidence for the degree of freedom 1 and 178, as the obtained F-ratio was **Lesser** than the Table F-ratios 2.90.

The above results indicate that the mean values of the **Serum Cholesterol** was not increased significantly due to the physical activities done by the Experimental groups.The results were also indicating that the Ten weeks of training programme consisting of selected physical activities does not show significant change in the mean performance of **Serum Cholesterol** of Experimental group.

Figure 3
Computation of Analysis of Covariance on Serum Cholesterol of Control and Experimental groups between Pre-Test and Post-Test.

The purpose of the present study was to find out the effect of selected physical activities on selected bio chemical variables that are considered relevant for the development of Health and Fitness.

To achieve the purpose of the study, one hundred and ninety male students of Bharthiar University affiliated colleges were selected as subjects under random group design. The subjects were divided into experimental group with selected physical activities and other served as control group without participating in any physical activities.

During the 10 weeks period all selected physical activities were imparted to the experimental group in the morning between 7.00 to 7.45 A.M. But there was no training given to the control group.The training programme started with pre-test on selected biochemical variables on both groups and post-test were also conducted after ten weeks of experimental programme. The investigator selected the variables keeping in mind the facilities available for the same.   The variables selected for this study were Resting Diastolic Pressure, Hemoglobin and Serum Cholesterol.

The analysis of data revealed that the training programme with selected physical activities showed significant gains in some selected variables.   The effect of training programme also showed significant changes in bio chemical variables.

CONCLUSIONS
1. The study indicates that the selected physical activities shows appropriate adoptive changes in biochemical variables in the experimental group within the limitations of ten weeks duration.
2. The different physical activities decreased Resting Diastolic Pressures among cricket players.
3. The different physical activities increased Hemoglobin levels significantly among cricket players
4. The different physical activities have no effect on Serum Cholesterol among cricket players

_____
Journal for all Subjects : www.lbp.world

5

_____

REFERENCE

Barly L. Johnson and Jack K. Nelson,Carlton r. Meyers, Measurement in Physical Education (New York : The Ronald Press Company, 1974), P.320.

Clark, Harrison H. and Clarke, David H. Advanced Statistics with application to Physical Education. Englewood cliffe, New Jersey : Prentice Hall : inc 1972.

Cureton, Physical Fitness of Champion Athletes, P.48 David K. Miller and T. Earl Allen, Fitness a life time commitment (U.S.A. Burgers Publishing Co. 1982) P-2.

Delsanto.Frank, "Study of the Effects of Physical Conditioning Programme on Selected Physiological Components of College Aged Men", Dissertation Abstracts International 36 (June 1976) : 7726-A

.Engene r. Anderson, "The Effects of Varying workload Intensity and Duration of Exercise Time on Selected Cardio-vascular and Anthropometric Measures", Completed Research in Health, Physical and Recreation 20 (May 1978) : 262.

Frank Del Santo " A study of the effect of three physical conditioning programmes on selected physiological components of college men" Dissertation Abstracts International 36, June, 1976);7928-A.