

EFFECT OF PHYSICAL TRAINING ON FEMALE ATHLETES ON THEIR SELECTED PHYSIOLOGICAL VARIABLES

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Abstract

The purpose of the study is to find out the effect of physical training on different physiological variables. Thirty five (35) female students who were pursuing Bachelor of Physical Education and Master of Physical Education courses at Institute of Professional Studies, Gwalior (M.P.) were randomly selected as subject for this study. The subjects age was ranged between 18 to 28 years. All the subjects took activity part in all activity classes of their course and all were physically fit and thus were capable to performing all the tests efficiently. In order to find out the significance effects physical training programming on selected physiological variables. Paired 't' test was applied and the level of significant was set at 0.05. the study reveal that systolic blood pressure, diastolic blood pressure, heart rate, respiratory rate and reduced and increased significantly by physical conditioning programme.

Keywords: Resting Pulse Rate, Vital Capacity, Peak flow Rate, Hemoglobin and Blood Pressure

Introduction

A sport today has emerged into a highly organized activity of human society. It is highly organized from of play and play is a general innate tendency which is very important for preservation, growth and development of organism. From time immemorial human beings have been laying stress on the importance of "physical fitness" as a strong base for "total fitness" of an individual. Physical fitness is not only of the most important key to be healthy but it is also the basis of dynamic and creative intellectual activity. The relation between soundness of the body activity and of mind is subtle and complex. To keep himself fit, a person requires some sort of physical activity.

For a health and deceases life every individual is very conscious about and this consciousness is possible only when a person is physically healthy and fit. Through a good physical fitness programme a person is not only physically fit but also mentally, socially and spiritually perfect. Not only this, a good physical fitness programme would bring about a better circulation of blood in the body and better toned muscles increasing efficiency of the various tissues, and organs thereby enabling the body to perform better. Leaving apart performance, talking about a better personality is also

one of the contribution of physical fitness, which ultimately makes a person more socially accepted and recognized his status in the society. Many of the diseases are also cured or prevented through physical exercise like high blood pressure, diabetes, hyper tension, depression, stress, sodalities, back pain etc. Every person has some idea of physical fitness even though his concept about physical fitness may not be very clear. Not only in the present age but even the people of the ancient times were aware of the importance of physical fitness.

There are many important physiological characteristics required for improved performance in sportsmen. Each of sports have its own distinctive skills, tactics and movement patterns, they all similar physiological demands such as high aerobic power, high lactate tolerance and increased anaerobic capacity. These physiological capacities allow the team-sports players to repeat sprints often with quite short recovery periods over a prolonged duration. This type of activity commonly reffered to as prolonged high-intensity intermittent exercise.

Physiological variables may be defined as those variables which are directly linked with various physiological systems such as heart rate, blood pressure, vital capacity, fat percentage, respiratory rate and hemoglobin. Physiological variables such as cardiovascular efficiency, percentage of fat, reaction time, vital capacity etc should be taken into consideration while training athletes.

Methodology

Purpose

The purpose of the study is to find out the effect of conditioning programme on different physiological variables. Thirty five (35) female students who were pursuing Bachelor of Physical Education and Master of Physical Education. Course from College of Physical Education, Institute of Professional Studies, Gwalior (M.P.) were randomly selected as subject for this study. The subjects age was ranged between 18 to 25 years. Subjects were hosteller and day scholars and regularly participated in all activity classes of their course and all were physically fit and thus were capable to performing all the tests efficiently.

Collection of Data

In the beginning of academic session of Department of Physical Education initial data (Pre-Test) was collected at various selected variable. After collecting initial data all the selected subjects were undergone fourteen (14) weeks of conditioning programme. Consist of various type of exercise involving all the body parts. Duration of this conditioning programme was of 35 minutes daily five day a week under the supervision of the faculty of department of physical education. After completing the fourteen (14) weeks of the physical conditioning programme Post-Test final data were collected.

Variables Selected: Resting Pulse Rate, Vital Capacity, Peak flow Rate, Hemoglobin and Blood Pressure

Statistical Techniques

In order to find out the significance effects conditioning programming on selected physiological variables. Paired 't' test was applied and the level of significant was set at 0.05.

TABLE NO. 1
COMPARISON OF PRE AND POST TEST OF SELECTED PHYSIOLOGICAL VARIABLES.

Variable	Test	Mean	SD	MD	SE	t-ratio
Resting Pulse Rate	Pre-test	67.1	2.41	1.6	0.56	2.86*
	Post-test	65.9	3.81			
Vital Capacity	Pre-test	3.20	0.72	0.15	0.025	4.51*
	Post-test	3.31	0.81			
Peak Flow Rate	Pre-test	4.23	0.55	0.42	0.099	4.28*
	Post-test	4.54	0.60			
Hemoglobin	Pre-test	12.01	0.32	0.55	0.32	1.72
	Post-test	12.56	0.21			
Diastolic Blood Pressure	Pre-test	123.20	6.03	01.00	0.63	1.58
	Post-test	122.11	5.62			
Systolic Blood Pressure	Pre-test	83.53	4.73	1.60	1.82	0.88
	Post-test	85.13	4.97			

* Significant at 0.05 level of significance

Table no. 1 explains about impact of raining on selected subjects various physiological variables. Significant impact was found on half of the selected variables i.e., Resting Pulse Rate, Vital Capacity and Peak Flow Rate as calculated t test is higher than required t test at 0.05 level significance i.e., 2.05 where as in case of blood pressure it not so. Graphical representation of above table is made in fig. no. 1.

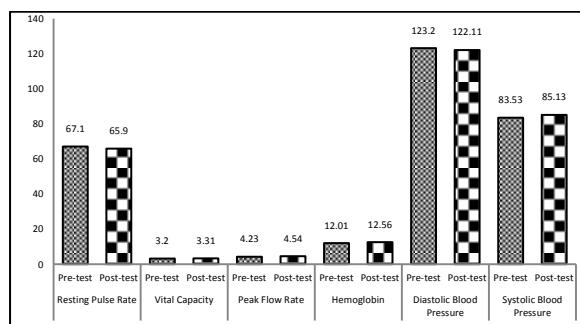


FIG. NO. 1: MEAN VALUES OF PRE AND POST-TEST VALUES OF SELECTED PHYSIOLOGICAL VARIABLES.

Discussion of Findings

Kentucky conducted a study to find out the effect of training upon body weight excess fat and lean tissue and find out that after one half months of intensive physical training excess fat was disappeared. Significant gains of lean tissue and loss of fat are in evidence the heaviest girls more fat and gained lean body tissue than the lightest girls, who lost less excess fat and gained more lean body tissue. The study indicates that after seven weeks of inactivity, excess fat increases. In the same way it is evident from the result of the present study of 18 to 28 years physiological variables like resting pulse rate, vital capacity, peak flow rate and blood pressure got positive effect. So it can be concluded that the study reveal that resting pulse rate, vital capacity and peak flow rate reduced and increased significantly by physical conditioning programme.

Reference

- Trahan, B.J. (1974). "The Effects of Two Specific Exercise Programme on the Body Composition of Women" Dissertation Abstracts International, Vol.14, No.8 p.4847- A.
 Thompson, C.W, Buskrik, E.R and Goldman (1957), "Changes in body fat, Estimated From Skin Fold Measurement of College Basketball And Hockey Players During A Season", Research Quarterly, Vol.27 p.418.
 Goose, Carl E. Will (1969), "Physical fitness our Primary Objective", Journal of Health Physical Education and Recreation, p. 32.
 Donald, D., Harper, Billings, Charles D. and Mathew, Donald D. (1969), "Comparative Effects of Two Physical Conditioning Programme on Cardio-Vascular fitness in Men", Research Quarterly, Vol. 31 pp.290-293.
 Burke, Edmund J. (1976), "Validity of Selected Laboratory and Field Test of Physical Working Capacity", Research Quarterly, Vol.47 p.95.
 Edward Charles Chalouupaka (1972), "The Physiological Effects of two Training Maintenance Programme following an 8 weeks of Interval Training". Dissertation Abstracts International, Vol.33 p: 1484.
 Mc Ardle W.D., Katch F.I., Katch V.L. (2006). Essentials of Exercise Physiology. 3rd ed. Philadelphia PA: Lippincott Williams and Wilkins; 2006.
 Rampinini, E., Impellizzeri FM., Castagna C, et al. (2007). Factors Influencing Physiological Responses to Small-Sided Soccer Games. J Sports Sci.;25:659–66.