



EFFECT OF ISOMETRIC EXERCISES ON SPEED OF COLLEGE GOING ATHLETES

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Abstract

The purpose of this study was to know the effect of isometric exercises on speed. Thirty (30) subjects were randomly selected comprising of both male and female athletes for isometric group(15) and control group(15) belonging to the age group of 22-28 years from College of Physical Education, Institute of Professional Studies, Gwalior and were divided into two equal groups, i.e. Isometric training group as experimental group and another as Control group. For the purpose of this study and to get valid conclusion, researcher has chosen one variable namely speed as dependent variable and isometric exercises as independent variable. To know the effect of isometric exercises on speed Random group Design was used and to analyze the both group (Isometric and control) "paired t test" was used at 0.05 level of significance. The Time of performance was recorded to the nearest 1/10 of a second. Finding of the study shows that there was no significant effect of isometric exercises on speed.

Key Words: Isometric Exercise, Intensity, Time and Speed

Introduction

Scientific truth is not a copy of an image passively received as the fruit of laborious and

endless dialogue between thought and reality. At any moment of history, man's practices reflect what he believes to be true at that time, but extent to which these are in accordance with the realities is dependent upon his prowess of observation, his ability to perceive relationships and his capacity for devising theories which account for their relationships. The theories grow out of his observations and each theory he formulates tends to make his observations more acute by establishing a prospective within which they may be more sharply focused, thus enabling him to ask more pointed questions, which will in turn elicit more precise information to be used in testing the theory. As a result of the circular process, he may modify his theories which will then modify his beliefs and practices. This motivates the next phase of the endless dialogue, and so the spiral human knowledge about any area of man's life rises in overwidening cycles of theory and retested by fact. Strength is the key to the success in modern sports and games. Such a statement may sound extreme, but nevertheless, it is true. Strength, however, is the key element because it is more easily improved than the other elements. It is in fact the only element that can be improved with one hundred percent success. Agreement is unanimous that the good big man will always beat the good little man, i.e., the good strong man will always beat



the good weary man. That being the reason, the demand has come for great interest in fitness training method. Weight training is not usually thought of as an end in itself, but as a means to an end – the primary emphasis should be on the power, the muscle exert, not on the form of the lift. In most educational systems, physical education (PE) is a course which promotes physical activity and various sports. The intent is generally to promote fitness and health, as well as the benefits of team-building, teamwork, sportsmanship, and fair play. Physical education teaches the students to work as an individual or as part of a team. The definition of physical education is the same in different countries in the world in terms of its goals in promoting discipline. Knowing the definition of physical education is important so that students will be able to be more interested with the program and its benefits. In addition, definition of physical education plays a significant function in enlightening the students and providing the students the understanding of its importance. The program provides the students with instructions that are individualized and challenging, which can advance the confidence, skills, motivation and knowledge necessary in life.

Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and body building, where skill does not have to be shown and the criteria are not as well defined.

Isometric exercise is a form of exercise involving the static contraction of a muscle

without any visible movement in the angle of the joint. This is reflected in the name; the term "isometric" combines Greek the prefixes "iso" (same) with "metric" (distance), meaning that in these exercises the length of the muscle does not change, as compared to isotonic contractions in which the contraction strength does not change but the joint angle does.

Methodology

Total thirty (30) subjects were randomly selected as subjects, both male and female from College of Physical Education, Institute of Professional Studies, Gwalior (M.P.). These subjects were ranged from 22 to 28 years and were divided into two equal groups, i.e. Isometric training group as experimental group and another as Control group. To ascertain cooperation from the subject the scholar had an information talk with the subjects explaining to them the requirement of the study in detail. The variable for this study were Isometric exercises as independent variable whose effect was seen on speed which was the dependent variable. In order to know the effect of isometric exercises on speed random group design was adopted and equal no of subjects was assigned at random to two groups of fifteen subjects each. To analyse the collected groups (Isometric and control) "paired t test" was used and level of significance was set as 0.05.



Findings

TABLE NO. 1
COMPARISON OF MEAN VALUE OF PRE AND POST TEST
OF EXPERIMENTAL GROUP

Test	Mean	S.D.	M.D.	S.E.	't'
Pre-test	8.47	1.24		0.32	
Post-test	8.37	1.24	0.10	0.32	1.24

*Significant at 0.05 level Significance; $t_{(0.05)(14)} = 2.15$.

Table no. 1 shows that there is insignificant difference among pre and post test of speed of experimental group as calculated t-ratio value 2.07 is smaller than tabulated t-value 2.15. This shows that isometric training with prescribed load and intensity in this research proved to be insufficient for significance improvement in 50 meter run.

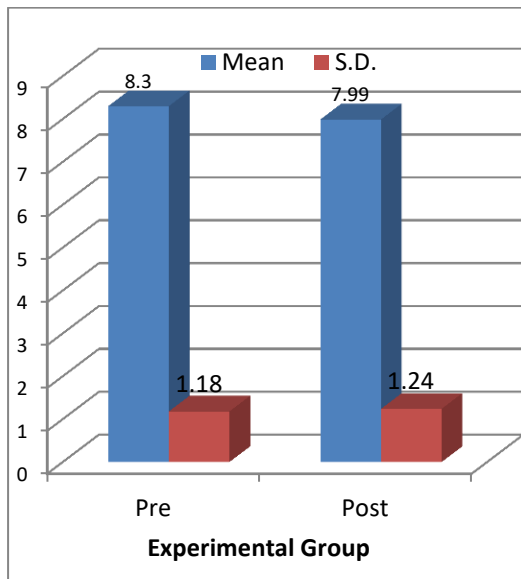


Fig no. 1: Graphical representation of pre and post Mean and Standard Deviation value of Experimental Group.

TABLE NO. 2
COMPARISON OF MEAN VALUE OF PRE AND POST TEST
OF CONTROL GROUP

Test	Mean	S.D.	M.D.	S.E.	't'
Pre-test	8.30	1.18		0.30	
Post-test	7.99	1.24	0.31	0.32	2.07*

*Significant at 0.05 level Significance; $t_{(0.05)(14)} = 2.15$.

Table no. 2 shows that there is insignificant difference among pre and post test of speed of control group as calculated t-ratio value 1.24 is smaller than tabulated t-value 2.15.

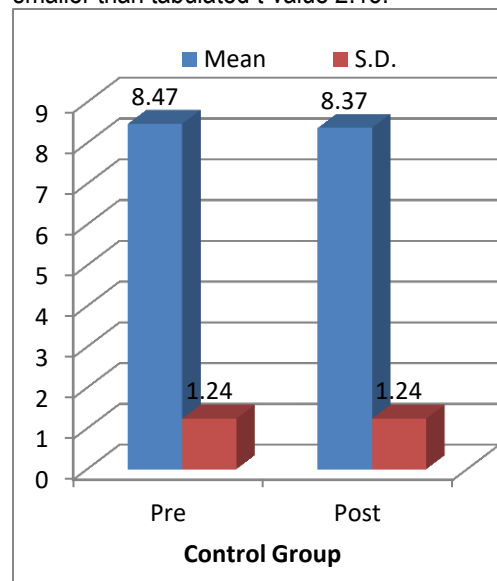


Fig no. 2: Graphical representation of pre and post Mean and Standard Deviation value of Control Group.

Discussion of Findings

The findings of the study shows that the experimental group trained by isometric exercises and control group did not show any significant increase in the performance of track



event of 50 meters run. The scientific and systematic designed isometric training brings work stress on muscles and respiratory system. Doing these training under stress for a longer period of time brings physiological changes. Doing isotonic exercises for eight weeks might have increased the strength and physiological component but for the significant improvement of motor component like speed, the movement frequency needs to be improved significantly with strength. It is confirmed by the result of the study that for the improvement of 50 meter speed only isometric exercises with the applied intensity and load is not enough. Training with higher intensity and load or combining isometric exercises with the development of other motor component might improve the speed significantly.

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