

Effects of Strength Exercises on Physical Variables of B.P.Ed Students

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Abstract

The purpose of the study was to determine the effect of strength training exercises on selected physical variables like legs strength, arms strength, and abdomen strength. Total of 30 B.P.Ed students were selected as subjects from Shri K.G. Nadgir college of Physical Education, Dharwad, st: Karnataka. The ages of students were between 21 to 26 years. The study was limited to the following physical variables of legs strength, abdominal strength and arms strength. Explosive leg strength was measured by standing broad jump and was recorded to the nearest of a centimeters. Arms strength was measured by Arm strength index was computed by the application of Roger's formula. Pull-ups and push-ups and was recorded in the numbers. Abdominal strength was measured by bent knee sit- ups and was recorded in numbers. To find out the effect of strength training exercises on selected physical variables, dependent 't' test was applied and the level of significance was set at the 0.05. The study indicates that six week of strength training, increase muscular strength. In same way it is evident from the results of present study on physical variables like Arm Strength, Abdominal Strength and Leg Strength got positive effect. So it can be conducted that the study reveals that arm strength, abdominal strength and leg strength increased by strength training.

KEYWORDS: Strength Training, Explosive Strength, Abdomen Strength, Sit-Up, Pushups & Pull Ups.

Introduction

Strength training exercises is not usually thought as an end in itself, but as means to an end. The primary objective is not to learn to lift as much as possible, but to increase strength and power for application to some other sports. Strength training may be either of isometric, iso-kinetic contraction. There is some noteworthy advantage in training with weights than other type of strength training. Since weights can be added to the bar in small amount, it is to control the resistance to the working muscles. By recording the amount of strength lifted each day the trainer is able to gradually and accurately increase the overload of a muscle during a workout and form are workout the next. Scientists and physiologists have held the view that physical components of an athlete have a lot of to do with his performance. More than the techniques and tactics of a player or a term physical and physiological characteristics help him to better performance. The research findings show that a high level of technique perfections alone cannot produce success in competitive sports. Most of the games demand a higher level of speed, strength, endurance, flexibility, coordination and optimum fitness of the organism. Despite the effectiveness of strength training for

athletic and general physical improvement and despite the already large and still growing number of proponents.

Many athletes and fitness enthusiasts still shy away from it. They have heard that it will make them muscle bound, slow, tight, too heavy or that muscles will turn to fat when they stop training with weights. Even their coaches misinform them that it will ruin their knees, disrupt their motor patterns and may even give them pre-mature gray hair. While athletes throughout they are flocking to the gymnasium to build up strength through strength training. Sum of the Indians still feel that lifting strength makes one stiff and muscles bound and they still speak of slim and sleek sprinters. In spite of the progress that has been made in the field of strength training and its physiological impact in the last decade, the information gathered will be not sufficient with special reference to strength training of women subject. Besides some characteristics differences of the Strength training on males to that of females have been evident.

METHODS

SELECTION OF SUBJECTS

Total of 30 B.P.Ed students were selected as subjects from Shri K.G. Nadgir college of Physical Education, Dharwad st: Karnataka. The ages of students were between 21 to 26 years.

ADMINISTRATION OF TEST AND COLLECTION OF DATA

The study was limited to the following physical variables of legs strength, abdominal strength. All the subjects were divided randomly into two groups "A" and "B" by drawing lots. Each group consisted of 15 subjects. All the subjects were having regular activity period during which they undergoes physical activities as per the institute schedule. The group "A" acted as experimental group and group "B" acted as control group (group "A" underwent a specific strength training) Based on the review of related literature, the comparable study related field, delimitation of the present study, feasibility, as well as purpose of the study following variables was selected legs strength, abdominal strength and arms strength. Explosive leg strength was measured by standing broad jump and was recorded to the nearest of a centimeters. Arms strength was measured by Arm strength index was computed by the application of Roger's formula. Pull-ups and push-ups and was recorded in the numbers. Abdominal strength was measured by bent knee sit- ups and was recorded in numbers.

STATISTICAL ANALYSIS

Values are presented as mean values and SD. Independent samples t tests were used to test if population means estimated by two independent samples differed significantly. Level of significance was set at the 0.05. Data was analyzed using SPSS Version 16.0 (Statistical Package for the Social Sciences, version 16.0, SSPS Inc, Chicago, IL, USA). To find out the effect of strength training on selected physical variables, independent 't' test was applied and the level of significance was set at the 0.05.

RESULTS:

To find out the significance difference between the initial and final scores of the experimental and control groups dependent 't' test was administered. Effects of

training on leg strength have been presented in table no.1. The mean differences of the criterion measures for the control experimental group are presented from Table 1 to 6.

Table no. 1
Comparison of Mean Values of Pre and Post Test of Leg Strength of Experimental Group

Test	Mean	Sd	Md	Se	't'-test
Pre- Test	2.24	.11	.61	.025	4.31
Post Test	2.84	.20		.051	

*level of significance 't' 0.05 (14=2.05)

Table no-1 show that there is significant difference among pre and post test of Leg Strength of experimental group as calculated value t-ratio 4.31 is higher than tabulated t-value 2.05. Thus it is proofed that six (6) weeks of strength training exercises had significant effect on Leg Strength. As the results indicate research hypothesis is accepted.

Table no. 2
Comparison of Mean Values of Pre and Post Test of Leg Strength of Control Group

Test	Mean	Sd	Md	Se	't'-test
Pre- Test	2.32	.19	.13	0.046	.062
Post Test	2.45	.019		0.052	

*level of significance 't' 0.05 (14=2.05)

Table no-2 show that there is in significant difference among pre and post test of Leg Strength of control group as calculated value t-ratio .062 is lower than tabulated t-value 2.05. Thus it is proofed that six (6) weeks of strength training exercises had no effect on Leg Strength. As the results indicate research hypothesis is rejected.

Table no-3
Comparison of Mean Values of Pre and Post Test of Arms Strength of Experimental Group

Test	Mean	Sd	Md	Se	't'-test
Pre- Test	408	168.9	179.5	43.61	2.91 *
Post Test	587.5	177.8		48.50	

*level of significance 't' 0.05 (14=2.05)

Table no-3 show that there is significant difference among pre and post test of Arms Strength of experimental group as calculated value t-ratio 2.91 is higher than tabulated t-value 2.05. Thus it is proved that six (6) weeks of strength training exercises significant effected on the Arms Strength. As the results indicate research hypothesis is accepted.

Table no.4
Comparison of Mean Values of Pre and Post Test of Arms Strength of Control Group

Test	Mean	Sd	Md	Se	't'-test
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Pre- Test	325.3	135.4	20.8	3.89	.0427
Post Test	346.2	142.65		36.83	

*level of significance 't' 0.05 (14=2.05)

Table no-4 show that there is insignificant difference among pre and post test of Arms Strength of Control group as calculated value t-ratio .427 is less than tabulated t-value 2.05. Thus it is proofed that six (6) weeks of strength training exercises had not effected on the Arms Strength. As the results indicate research hypothesis is rejected.

Table no.5
Comparison of Mean Values of Pre and Post Test of Abdominal Strength of Experimental Group

Test	Mean	Sd	Md	Se	't'-test
Pre- Test	42.2	6.29	19.3	1.63	14.64*
Post Test	61.13	6.75		1.74	

*level of significance 't' 0.05 (14=2.05)

Table no-5 show that there is in significant difference among pre and post test of Abdominal Strength of Experimental group as calculated value t-ratio 14.64 is higher than tabulated t-value 2.05. Thus it is proofed that six (6) weeks of strength training exercises had effected on the Abdominal Strength. As the results indicate research hypothesis is accepted.

Table no.6
Comparison of Mean Values of Pre and Post Test of Sit Ups of Control Group

Test	Mean	Sd	Md	Se	't'-test
Pre- Test	38.9	7.92	0.8	1.82	1.41
Post Test	40.08	7.80		1.83	

*level of significance 't' 0.05 (14=2.05)

Table-6 show that there is in significant difference among pre and post test of Sit Ups of Control group as calculated value t-ratio 1.41 is than tabulated t-value 2.05. Thus it is proved that six (6) weeks of strength training exercises had not effected on the Arms Strength. As the results indicate research hypothesis is rejected.

DISCUSSION & CONCLUSION:

The purpose of the study was to find out the effect of six week of strength training exercise on selected physical variables like legs strength, arms strength, and abdomen strength on B.P.Ed students. The study indicates that six week of strength training exercises, increase muscular strength. The physical variables like Arm Strength, Abdominal Strength and Leg Strength got positive effect. So it can be concluded that the study reveals that arm strength, abdominal strength and leg strength increased by strength training exercises.

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