

Importance of vacation fitness training programme on muscular strength and explosive power among the elementary school students

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ABSTRACT

Vacation fitness training improves certain physical variables, especially the muscular strength and explosive power; these variables have a major role for the better performance of different sports and games. The purpose of the study was to examine the importance of vacation fitness training programme on muscular strength and explosive power among the elementary school students. To achieve the purpose of the study forty school level boys were randomly selected from Inspire Football Academy and different schools in Mundakayam, Kerala and their age ranged from 12 to 15 years. The subjects were divided into two groups of twenty each; group I underwent the fitness training programme for six weeks – per day ninety minutes and four days in a week. The group II acted as a control group and was not given any exposure and kept under control. The selected criterion variables are muscular strength and explosive power assessed before and after the training period. The data were statistically analyzed with covariance (ANCOVA). The results reveal that the six-week fitness training programme had significantly increased the muscular strength and explosive power among elementary school students.

1. Introduction

The benefits of coaching camp are plenty, understanding the value of playtime, building leadership skill and confidence. The camps lead a better environment to freely learn and increase their capabilities. Many researchers suggest that vacation camp proves beneficial long into adulthood, there are emotional intelligence, independence, learning skills, healthy living and self-confidence. It creates meaningful friendship and lessons, a better environment for children to take social risks.

One of the major benefits of the coaching camp is the development of social skill, especially the interaction with others in a positive way. The camp experience creates an increase in emotional intelligence in children and gives them the chance to become more empathetic. Many parents support this type of camp because they are active in the physical exercise programme, they can achieve a better life. The World Health Organization recommended that the age of 5 to 17 children should participate in physical activities at least sixty minutes in a day. Physical fitness and physical activity are considered to be essential elements for the enhancement of health and quality of life, they lead to the holistic development of a child. Ryan, P., et al., (1997) suggested that any activity that uses large muscle groups, which can be maintained continuously, and rhythmical in the aerobic in nature, e.g., walking-hiking, running-jogging, cycling-bicycling, cross country skiing, aerobic dance/group exercise make the best result in the people. Many sports camps' prime aim is to teach the children the significance of healthy life and physical activity. It provides knowledge of the importance of proper nutritious meals and eating healthy.

Muscular strength is the ability of the muscles to produce the force with single maximal effort. For example, how much weight you can carry, how much push up you can take. We can

achieve muscular strength through strength training. The benefits of the strength training build lean muscle mass, improve the metabolism, stronger muscles and better body looks. According to Avery, D., the training program consisted of primary exercises that focused on enhancing muscular strength and power. The planned physical exercises programme increases muscular strength, particularly motor fitness, cardio fitness and performance fitness. In the sports and games, one of the important fitness components is muscular strength, it demanding for the execution of a variety of sports activities throughout life. Many research study shows that the muscular strength prevent chronic diseases and increases the performance of the activities of daily life (Wolfe, R.R., 2006).

The maximum capacity of the leg to release muscular force in the shortest time as it executes a vertical jump or broad jump. Explosive power connects with strong muscle. The abdominal strength and leg strength required for jumping demand activities. Sports and games that demand to jump, kicking, throwing and a sudden burst of power to change direction very essential the explosive muscle power (Newton, R.U., & Kraemer, W.J., 1984). Maximum explosive power is the great ability of the neuromuscular system to create a single maximum voluntary contraction with maximum speed. (Thomas, et, al., 1996)

2. Methodology

Selection of subjects: The total forty subjects were randomly selected from Inspire Football Academy and different schools in Mundakayam, Kerala and their age ranged from 12 to 15 years.

Selection of variables: Dependent variables of present study such as muscular strength and explosive power. The

vacation fitness training programme was considered as an independent variable of the study.

Muscular strength measured by sit-ups; the subjects were instructed to lay down in the mat and sit-ups were done according to instruction. The total number of sit-ups done per minute was the score of the subjects.

Explosive power measured by the standing broad jump test, this test was performed according to Euro fit Test Battery (Oja et al. 1995). The subjects were instructed to jump forward with maximum power and land with the feet together. Two trials were given and each subject's best performance was recorded.

Collection of data: The data were collected through the administration of muscular strength measured by sit-ups and explosive power measured by the standing broad jump. The muscular strength and explosive power were estimated in all participants before and after the six-week fitness training programme.

Training programme: During the training period, the experimental group underwent their fitness training programme for six weeks – four days in a week, eighty to ninety minutes per day with suitable warming up, fitness training and proper cool down exercise. The fitness training were slow continuous running, hill running, chasing, stepping and specific jumping exercise in an alternative day in weeks.

Statistical analysis: The data were statistically analysed with covariance (ANCOVA) with the SPSS (version 23) package. The Importance of vacation fitness training programme on muscular strength and explosive power among elementary school students. All the cases 0.05 level confidence fixed.

3. Analysis and Interpretation

The influence of the training on muscular strength was analysed separately, and the data is presented below.

TABLE-I
ANALYSIS OF COVARIANCE ON MUSCULAR STRENGTH OF CONTROL GROUP AND EXPERIMENTAL GROUP (NUMBERS)

Tests	CG	EG	SV	SS	df	MS	F
Pre-Test	26.65	26.45	B	0.4	1	0.4	0.01
			w	1201.5	38	31.62	
Post-Test	25.60	30.40	B	230.4	1	230.4	8.97
			w	975.6	38	25.67	
Adjusted Post-Test Mean	25.52	30.48	B	245.46	1	245.46	36.08
			W	251.72	37	6.8	

* Significant at .05 level of confidence
(The table value required for 0.05 level of significance with df 1 and 37 is 4.11.)

The Table-1 shows that the pre-test mean values on Muscular strength of control group and experimental group are 26.65 and 26.45 respectively. The obtained 'F' ratio 0.01 for pre-test scores was less than the table value 4.10 for df (1, 38) that indicates there is no significant difference in Muscular strength between groups.

The post-test mean values on Muscular strength of control group and experimental group are 25.60 and 30.40 respectively. The obtained 'F' ratio 8.97 for post-test scores was greater than the table value 4.10 for df 1 and 38 required for significance at 0.05 level of confidence on Muscular strength.

The adjusted post-test means of a control group and experimental group are 25.52 and 30.48 respectively. The obtained 'F' ratio of 36.08 for adjusted post-test means was greater than the table value of 4.11 for df 1 and 37 required for significance at 0.05 level of confidence on Muscular strength. The results of the study reveal that there was a significant difference among the adjusted post-test means of the control group and experimental group on Muscular strength.

Muscular strength of pre-test, post-test and adjusted post-tests means of the control group and fitness training and football coaching are graphically represented in figure-I.

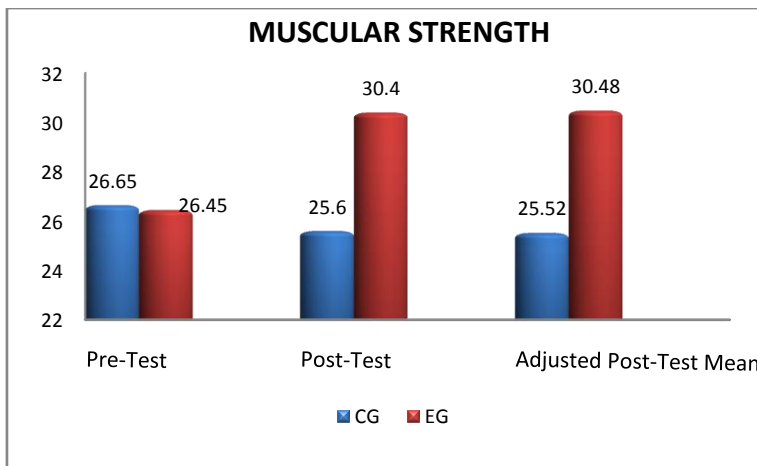


Figure I : MUSCULAR STRENGTH OF PRE, POST AND ADJUSTED POST TESTS MEANS OF CONTROL GROUP AND EXPERIMENTAL GROUP

The influence of the training on respiratory cardio endurance was analysed separately, and the data is presented below.

TABLE-II
ANALYSIS OF COVARIANCE ON EXPLOSIVE POWER OF CONTROL GROUP AND EXPERIMENTAL GROUP

Tests/Groups	CG	EG	SV	SS	df	MS	F
Pre-Test	134.6	135.1	B	2.5	1	2.5	0.12
			w	7702.6	38	202.7	
Post-Test	132.3	143.7	B	1299.6	1	1299.6	7.8
			w	6328.4	38	166.54	
Adjusted Post-Test Mean	132.5	143.5	B	1209.54	1	1209.54	32.18
			W	1390.86	37	37.59	

* Significant at .05 level of confidence
(The table value required for 0.05 level of significance with df 1 and 37 is 4.11.)

The Table-1 shows that the pre-test mean values on the explosive power of the control group and experimental group are 134.60 and 135.10 respectively. The obtained 'F' ratio 0.12 for pre-test scores was less than the table value 4.10 for df (1, 38) that indicates there is no significant difference in explosive power between groups.

The post-test mean values on the explosive power of the control group and experimental group are 132.30 and 143.70 respectively. The obtained 'F' ratio 7.80 for post-test mean was greater than the table value 4.10 for df 1 and 38 required for significance at 0.05 level of confidence on explosive power.

The adjusted post-test means of the control group and experimental group are 132.50 and 143.50 respectively. The obtained 'F' ratio of 32.18 for adjusted post-test means was greater than the table value of 4.11 for df 1 and 37 required for significance at 0.05 level of confidence on explosive power. The results of the study show that there was a significant difference among the adjusted post-test means of the control group and experimental group on explosive power.

The explosive power of adjusted post-tests means of yoga practice group and control group are graphically represented in figure-II.

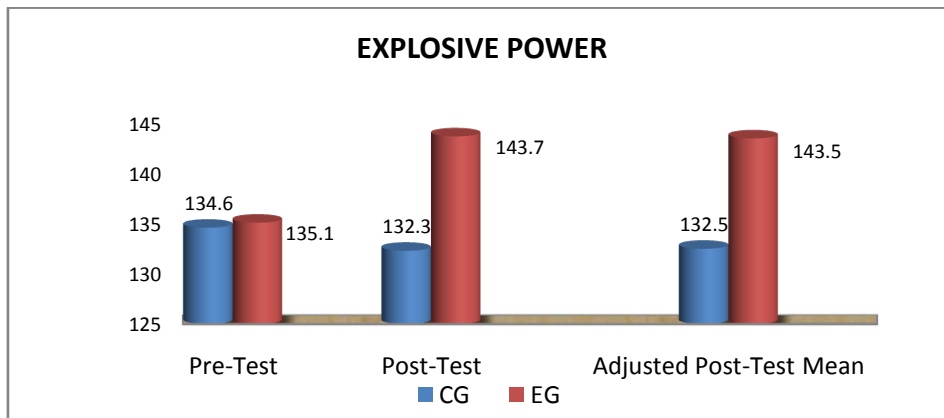


Figure-II: EXPLOSIVE POWER OF PRE, POST AND ADJUSTED POST TESTS MEANS OF CONTROL GROUP AND EXPERIMENTAL GROUP

4. Discussion and findings

As a result, the present study found out to support the view that the six weeks fitness training programme increases muscular strength and explosive power of elementary school students significantly. This study showed that in addition to six weeks fitness training programme, it influences multidimensional development of muscular performance and physical fitness. The Ana, R., et al., (2019) study supported the present study results, the eight weeks concurrent training programme makes a positive impact of explosive power in prepubescent children. Assessment of muscular strength is important for elderly people because of many health problems associated with loss of muscle strength and muscle mass (Hyatt et al., 1990). In recent days, the lacks of physical activities affect the children. This defeats the muscle mass and

leads to the reduction of muscle strength (Rutherford, & Jones, 1992).

5. Conclusions

Based on the results obtained the conclusion within the limitation of the present study is given below.

- Muscular strength of school-level boy-students was significantly increased by pre and -post-test.
- The explosive power of elementary school students also significantly increased by pre and post-test. So from the above result it was observed that both the muscular strength and explosive power has been improved by six weeks vacation fitness training programme.

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