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EFFECT OF TRADITIONAL STRENGTH TRAINING AND FUNCTIONAL STRENGTH TRAINING EXERCISES ON ARM STRENGTH OF COLLEGE MALE POLEVAULTERS

D.Baskar Ph.D., Scholar, Alagappa College of Physical Education, Alagappa University, Karaikudi.

Dr.K. Murali Rajan* Associate Professor, Alagappa University College of Physical Education, Karaikudi.
*Corresponding Author

ABSTRACT The purpose of the study was to realize the effect of selected traditional strength training and functional strength training exercises on the improvement of arm strength among college men Polevaulters. To work on the purpose 45 Polevaulters who were the students of colleges under the University of Madras, Chennai, Tamilnadu, were taken as the subjects. The selected group of subjects was divided into three groups viz. traditional strength training group, functional strength training group and control group. The traditional strength training and functional strength training schedule which was administered on experimental groups only, selected traditional strength training and functional strength training exercises were given. This traditional strength training and functional strength training programme exercises were carried out for a period of 12 weeks for one hour every evening, excluding Tuesday, Thursday, Saturday, and Sunday for each experimental group. Control group was no treatment group and were engaged in their own daily activity programme. As delimited to measure the arm strength pull-ups tests were used. For the administration and scoring of these tests item procedure mentioned in AAPHER, youth fitness test (1958) was taken as the model. It was realized from the results of the study that there was significant effect of the functional strength training exercise than traditional strength training on the arm strength of the selected polevaulters.

KEYWORDS : Traditional Strength Training, Functional Strength Training, Polevaulters, Arm Strength.

1. INTRODUCTION

Training is mainly an art and like the artist a successful training programme must have two attribute. The first one is creative training, which indicates success in any sports hinges on its ability to respond quickly of flexibly, strength, speed and reliably to player demands and better opportunities. The second attribute is technical mastery of the skills used (Shaker, 2007). Therefore, a systematic and appropriate training programme is a great asset for all players.

Traditional strength training exercise programs are commonly thought to involve exercises that isolate specific muscles in order to increase strength more effectively (McGill et al. 2009). Applying this philosophy, the focus of a traditional exercise program is to increase the strength or endurance of a particular muscle or muscle group without regard to training movements that are related to activities of daily living or sport performance. Traditional, machine-based and free weight exercise programs that restrict movement along one plane of motion (usually sagittal) may elicit poorer carry-over effects to real life activities that occur in multiple planes (Whitehurst et al. 2005).

Functional strenth training is becoming increasingly popular within the fitness field and sports training field and has been considered as a better alternative training for traditional resistance training for improving various fitness factors including strength, endurance, coordination and balance. The verb form of the word "function" pertains to the performance of an action, work or activity. Thus, exercise training programs that are deemed to be "functional" should be designed to mimic tasks or activities that occur in a person's daily life to make training adaptations more transferable

All three types of strength training i.e. traditional strength training (STG), functional strength training (FTG), and endurance training (ETG) can enhance physical capacity. But Functional strength training can be a cost effective form of training in terms of less demand for instructors and equipment and could be an effective way to improve physical function, strength and indices of well-being in the elderly.

Lagally and colleagues (2009) studied the acute physiologic and metabolic responses to functional strength training in younger adults (19–27 years) and found that the exercise program performed elicited caloric expenditure levels that were associated with maintaining health according to the American College of Sports Medicine (ACSM). Thus, the purpose of the study was to find the effect of selected traditional strength training and functional strength training exercise on the development of arm strength of polevaulters.

2. METHODS AND MATERIALS

2.1. Subjects

A total of 45 polevaulters who were the students of University of Madras, Chennai were taken as the subjects of the study. According to the demand of the study total subjects were divided into three different groups A, B and C.

Group 'A' was first experimental group comprising 15 polevaulters and were engaged in prescribed traditional strength training schedule, 'B' was second experimental group comprising 15 polevaulters and were engaged in prescribed functional strength training schedule, whereas group 'C' was control group comprising 15 polevaulter were engaged in their own daily activity programme.

2.2. Tools and Facility

As delimited to measure the arm strength pull-ups tests were used. For the administration and scoring of these tests, procedure mentioned in AAPHER youth fitness test (1972) was taken as the model.

2.3. Traditional and Functional Strength Training Schedule

The pre design traditional and functional strength training programme was carried out for a period of 12 weeks for one hour every evening. In this the time required for conducting pre-test and post-test is excluded. The group 'A' subjects underwent the selected traditional strength training and the group 'B' subjects underwent the selected functional strength training programme for thrice in the week that is, on Monday, Wednesday and Friday. Control group was treated as no treatment and was not subjected to any experimental training. The control group was allowed to engage themselves in their daily routine physical activities.

2.4. Statistical Technique

To find out the effects of selected traditional strength training and functional strength training exercise on arm strength of college men polevaulters F-ratio test was used between the pre-test and post-test data. The level of significance was set at 0.05 level.

3. RESULTS

In the table given below results of the study is presented.

Table - I Analysis Of Covariance On Arm Strength Of Experimental And Control Groups

Test	Traditional strength training group	Functional strength training group	Control Group	sv	ss	df	MS	F ratio
Pre test	6.33	6.27	6.33	Between	0.04	2	0.022	0.01
				Within	99.60	42	2.37	
Post test	6.86	10	6.47	Between	112.31	2	56.16	33.95*
				Within	69.47	42	1.65	

Adjusted	6.85	10.03	6.45	Between	115.29	2	57.64	98.69*
				Within	23.947	41	0.58	

(The required table value for significance at the 0.05 level of confidence with degrees of freedom 2 and 41 is 3.23 and degree of freedom 2 and 42 is 3.22)

*Significant at .05 level of confidence

The adjusted post test means of arm strength of traditional strength training group, functional strength training group and the control group are 6.85, 10.03 and 6.45 respectively. The obtained 'F' ratio value of 98.69 on arm strength were greater than the required table value of 3.23 for the degrees of freedom 2 and 41 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post test means of experimental and control groups on arm strength.

Since, the adjusted post test 'F' ratio value is found to be significant the Scheffe's test is applied as a post hoc test to determine the paired mean differences, and it is presented in table-II.

Table-ii

Scheffe's Test For The Difference Between The Adjusted Post Test Paired Means Of Arm Strength

Means			MD	CI
Traditional strength training group	**Functional strength training group**	**Control Group**		
6.85		6.45	0.40	0.69
	10.03	6.45	3.58*	0.69
6.85	10.03		3.18*	0.69

*significant

Table-II shows the Scheffe's test results that there is a significant difference between the adjusted post tests means of traditional strength training group and functional strength training group. The is no significance difference between the adjusted post tests means of traditional strength training group and control group on arm strength. Also the result of the study reveals that there is significant improvement on arm strength of the functional strength training group better than the traditional strength training group and control group on arm strength.

Discussion and Findings

The present study result showed that the twelve weeks of the traditional strength training influenced to increase on arm strength of college men polevaulters. It is observed from this finding that significant differences exist among traditional strength training group, functional strength training group and control group on arm strength.

Conclusion

The conclusion of the study stated that the functional strength training group has shown significant improvement on arm strength among college men polevaulters.

And the functional strength training group was better than the traditional strength training group on arm strength among the college men polevaulters.

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