

THE EFFECTS OF COMPLEX TRAINING WITH MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES YOUNG CHILDREN

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ABSTRACT

The purpose of the study is to find out the Effects of Complex Training with Muscular Strength Endurance and Flexibility on the Low Motor Abilities Young Children. To achieve the purpose of the study, 60 male young children were selected from vasavi School, Karnataka, India. The selected subject's age ranged from 15-17 years and muscular strength endurance in (sit ups) and flexibility (sit and reach) were selected as a criterion variables and test for this study. Pre-test data was taken before the training and the post test data was collected after the completion of a twelve week training period. The subjects were randomly put into the four groups of 15 in each. The first group (n=15, OBRTG group) underwent own body strength training, the second group (n=15; PTG group) underwent Plyometric training, the third group (n=15) underwent complex training (own body strength training followed by Plyometric training) the group IV (n=15, CG group) did not have any specific trainings. Based on this study 't' ratio was applied to find out the significant difference between the pre and post tests and analysis of covariance was applied with regards to the selected variables. The results of the complex training programme shows the significant improvement in muscular strength endurance and flexibility of young children.

Keywords: OBRTG group - Own Body Resistance Training, PTG group- Plyometric Training Speed, Explosive Power.

1. INTRODUCTION

According to Hakkinen et al., (1998) the strength training in combination with some explosive types of exercises be recommended as a part of overall physical training to maintain the functional capacity in middle-aged and elderly people. For explosive muscle performance, the underlying factors are muscle fiber type, muscle hypertrophy, enzymatic and neural adaptations. It is also important to investigate the impact of power-type strength training on the low back, leg muscles and joints, as well as the injury risks and adherence, and motivation for training. For being effective in improving the explosive muscle performance, training programs should be designed so as to motivate, easy to achieve, effectively concerning the time in exercises, low expenses, and they should consider the exercise history and present exercise activity, health status and musculoskeletal symptoms and diseases of the individual. Combination of both resistance strength training and Plyometric explosive power training helps to use the combination of resistance and Plyometric exercises to effectively engage the nervous system and activate more fibers (Beachle & Earle, 1994). Ebban (2002) states that resistance training followed by Plyometric training alternates biomechanically similar to high load weight training exercises with Plyometric exercises. This type of training describes a power-developing workout that combines weights and Plyometric exercises. About ten years ago, these workouts were greeted with great acclaim as research indicates that they could significantly enhance fast twitch

muscle fiber power, therefore, produce dynamic sports performance. The logic behind this pair of exercise is that the resistance work gets the nervous system into full action so that type II b fibers are available for the explosive exercise; Hence a better training benefit of complex training programme can be used in the general, specific and competitive phase of training.

2. STATEMENT OF THE PROBLEM

The purpose of the study is to find out the effects of complex training with muscular strength endurance and flexibility on the low motor abilities on young children

3. HYPOTHESIS

1. The own body strength training can significantly improve the muscular strength endurance and flexibility on the low motor abilities on young children.
2. The Plyometric training can significantly improve the muscular strength endurance and flexibility on the low motor abilities on young children.
3. The complex training significantly improve the muscular strength endurance and flexibility on the low motor abilities on young children.
4. The complex training can significantly improve better than the strength training, Plyometric training and control group on muscular strength endurance and flexibility on the low motor abilities on young children.
5. The Plyometric training may significantly improve better than the strength training and control group on speed and explosive power of young children.
6. The own body strength training may significantly improve better than the control group on the muscular strength endurance and flexibility on low motor abilities on young children.

4. METHODOLOGY

The purpose of the study is to find the Effects of Complex Training with Muscular Strength Endurance and Flexibility on the Low Motor Abilities on Young Children. To achieve the purpose of the study, 60 male young children were selected from Karpagam University, Vasavi school, Karnataka, India. The subject’s age ranged from 15-17 years and the students voluntarily participated in

this study. The selected variables were tested by muscular strength endurance in (sit ups) and flexibility (sit and reach). Pre-test data was taken before the training and the post test data was collected after the completion of a twelve week training period. The subjects were randomly assigned by the groups. The first group (n=15, OBRTG group) underwent own body strength training, the second group (n=15; PTG group) underwent Plyometric training, the third group (n=15,CTG group) underwent complex training (own body strength training followed by Plyometric training) the forth group (n=15, CG group) did not have any specific trainings. Based on this study ‘t’ ratio was applied to find out the significant difference between the pre and post tests with regards to the selected variables and analysis of covariance was applied.

Table-1

SIGNIFICANCE OF MEAN GAIN /LOSES BETWEEN PRE AND POST TEST OF OWN BODY STRENGTH TRAINING ON THE MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN.

Variable	Test	Mean	S.D	M.D	S.E.M	‘t’ ratio
Muscular Strength Endurance (in numbers)	Pre-Test	24.33	2.05	1.46	0.21	6.81*
	Post -Test	25.80	2.11			
Flexibility (in centimeter)	Pre-Test	33.60	2.79	1.80	0.20	9.00*
	Post -Test	35.40	2.72			

0.05 level of Significance (2.14)

Table-2

SIGNIFICANCE OF MEAN GAIN /LOSES BETWEEN PRE AND POST TEST OF PLYOMETRIC TRAINING IN THE MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variable	Test	Mean	S.D	M.D	S.E.M	‘t’ ratio
Muscular Strength Endurance (in numbers)	Pre-Test	24.93	1.86	2.06	0.24	8.32*
	Post -Test	27.00	1.85			
Flexibility (in centimeter)	Pre-Test	34.26	4.63	2.06	0.18	11.37*
	Post -Test	36.33	4.56			

0.05 level of Significance (2.14)

Table-3

SIGNIFICANCE OF MEAN GAIN /LOSES BETWEEN PRE AND POST TEST OF COMPLEX TRAINING IN MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variable	Test	Mean	S.D	M.D	S.E.M	't' ratio
Muscular Strength Endurance (in numbers)	Pre-Test	24.80	4.22	3.46	0.38	8.91*
	Post -Test	28.26	3.15			
Flexibility (in centimeter)	Pre-Test	35.06	2.46	1.866	0.19	9.72*
	Post -Test	36.93	2.21			

0.05 level of Significance (2.14)

Table-4

SIGNIFICANCE OF MEAN GAIN /LOSES BETWEEN PRE AND POST TEST OF CONTROL GROUP ON THE MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variable	Test	Mean	S.D	M.D	S.E.M	't' ratio
Muscular Strength Endurance (in numbers)	Pre-Test	24.53	2.69	0.13	0.09	1.46
	Post -Test	24.66	2.58			
Flexibility (in centimeter)	Pre-Test	32.46	5.24	0.13	0.09	1.46
	Post -Test	32.60	5.22			

0.05 level of Significance (2.14)

Table-5

ANALYSIS OF VARIANCE ON PRE TEST MEANS AMONG OBSTG, PTG, CTG AND CG ON THE MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Muscular Strength Endurance (in numbers)	Between Groups	3.250	3	1.083	.132	0.941
	Within Groups	460.400	56	8.221		
Flexibility (in centimeter)	Between Groups	54.450	3	18.150	1.153	0.336
	Within Groups	881.200	56	15.736		

0.05 level of Significance (2.77)

Figure -1

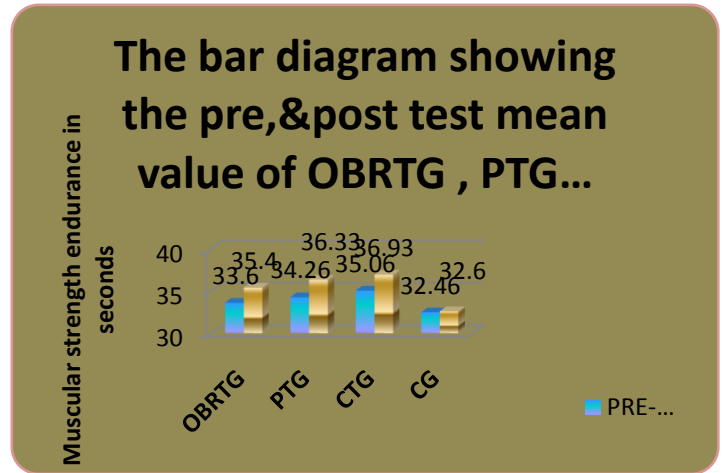


Figure-2

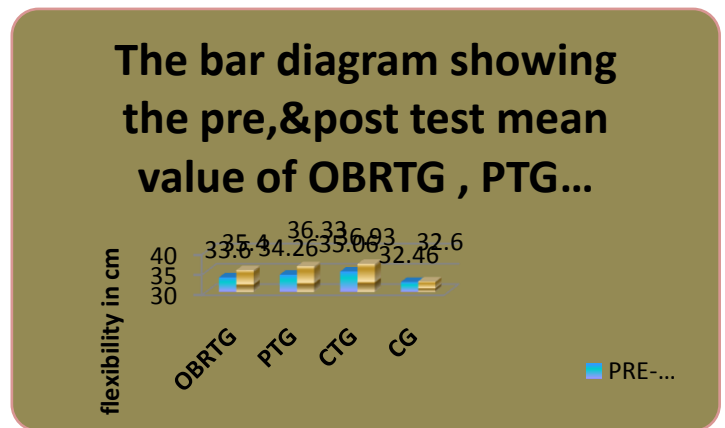


Table-6

ANALYSIS OF VARIANCE ON POST TEST MEANS AMONG OBSTG, PTG, CTG AND CG ON THE MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Muscular Strength Endurance (in numbers)	Between Groups	108.067	3	36.022	5.887	.001
	Within Groups	342.667	56	6.119		
Flexibility (in centimeter)	Between Groups	165.517	3	55.172	3.654	.018
	Within Groups	845.467	56	15.098		

0.05 level of Significance (2.77)

Table-7

ANALYSIS OF VARIANCE ON ADJUSTED POST TEST MEANS AMONG OBSTG, PTG, CTG AND CG ON MUSCULAR STRENGTH ENDURANCE AND FLEXIBILITY ON THE LOW MOTOR ABILITIES ON YOUNG CHILDREN

Variables	Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Muscular Strength Endurance (in numbers)	Between Groups	89.494	3	29.83	41.30	0.000
	Within Groups	39.718	55	0.72		
Flexibility (in centimeter)	Between Groups	37.118	3	12.37	28.64	0.000
	Within Groups	23.760	55	0.43		

0.05 level of Significance (2.77)

5. RESULTS

1. The result of the study shows that the own strength training significantly improved the muscular strength endurance and flexibility on the low motor abilities on young children.
2. The result of the study shows that the Plyometric training significantly improved the muscular strength endurance and flexibility on the low motor abilities on young children.
3. The result of the study shows that complex training significantly improved the muscular strength endurance and flexibility on the low motor abilities on young children.
4. The result of the study shows that the complex training significantly improved better than the strength training, Plyometric training and control group muscular strength endurance and flexibility on the low motor abilities on young children.
5. The result of the study shows that the Plyometric training significantly improved better than the strength training and control group muscular strength endurance and flexibility on the low motor abilities on young children.
6. The result of the study shows that the own body strength training significantly improved better than the

control group on muscular strength endurance and flexibility on the low motor abilities on young children.

CONCLUSION

It is concluded that complex training is the best training to improve the speed and explosive power among young children.

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