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Review Of Research

TO COMPARE THE EFFECT OF SHOULDER STRENGTH AMONG SPRINTERS ON PLYOMETRICS PUSH-UPS AND HAND PRESS

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ABSTRACT

The purpose of the study was to compare the effect of Plyometrics push-ups and hand press (front press) on the development of shoulder strength. The subjects were Thirty male Athletes of track and field practice group of LNIPE, Gwalior. The age of the subject varied between 18-22 years. The subject were assigned to three groups i.e Two experimental (A & B) and One control group (C), each group consisting of 10 subjects. The experimental group (A) participate in Plyometrics push-ups and the experimental group (B) participated in hand press (front press). The duration of the training programme was eight weeks. Two hand medicine ball put were taken in the beginning and at the end of the experimental period of eight weeks. The significance difference between the pre-test and post-test means for two hand medicine ball put performance among the groups were analysed by using analysis of covariance. The level of significance chosen was at 0.05. the result pertaining to t-test indicated that Plyometrics push-ups and hand press groups showed significant improvement as a result of 8 weeks training, whereas control group did not show any significant improvement. The analysis of data also revealed that both the experimental groups had equally training effect.

KEYWORDS : *Plyometrics training , shoulder strength , analysis of covariance.*

INTRODUCTION

Plyometrics training is an excellent method of developing body power and it is proved to be very effective method for improving explosive strength. It offers rich variation of exercises and load structure. Any activity that activates the stretch reflex mechanism is Plyometrics exercise. A Plyometrics exercise is based upon the belief that a rapid lengthening of muscle just prior to the contraction will result in much stronger contraction.

METHODOLOGY:-

Thirty male athletes of track and field match practice group of LNIPE, Gwalior acted as subjects for the study. The age of subject varied between 18-22 years. All the subject were residents of the institute having similar routine, diet, work, rest, sleep etc. the subjects were assigned to three groups, two experimental group and one control group each consisting of 10 subjects. The subjects were involved in regular training in sprinting during their match practice period. The criterion measure chosen

was to cover the maximum horizontal distance in meters and centimetres covered by the medicine ball put and the best of three attempts was taken as the final scores. The data was collected by administering the two hand medicine ball put test. The test was administered in the play field of LNIPE, Gwalior the pre-test data was collected in the beginning of January and the post test was collected at the end of February.

The subjects were trained Plyometrics training Monday, Wednesday and Friday for a period of eight weeks. The subjects performed Plyometrics push-ups for 10 times in each se, for 3 sets, with a recovery period of 4-5 minutes in between each set during two weeks, and there after increased the repetition by 5 every two weeks. The numbers of sets were kept constant i.e three.

The subjects were trained weight training programme for thrice a week i.e Tuesday, Thursday and Saturday for a period of eight weeks. The subjects performed front press or military press for 10 minutes in each set, for 3 sets with a weight of 20 kg and a recovery period of 4-5 minutes in between each set during first two weeks, and then after increased the weight by 5 kg every two weeks. The numbers of sets were kept constant i.e three. To find out the comparative effect of Plyometrics push-ups and hand press on explosive shoulder strength among sprinters the statistical technique applied was t-ratio and analysis of covariance is used at 0.05 level of significance.

FINDINGS:-

It is evident from the Table-1 that 't' values obtained for the two experimental groups (group-A and group-B) were 7.95 and 13.53 respectively which were significant as they were much greater than the 't' value of 2.26 required to be significant at 0.05 level of confidence. The 't' value for the control groups was 0.30 which was not significant at 0.05 level.

TABLE-1

SIGNIFICANCE OF DIFFERENCES BETWEEN THE PRE-TEST AND POST-TEST MEANS OF TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUPS IN TWO-HAND MEDICINE BALL PUT PERFORMANCE.

Groups	Post-test means	Pre-test means	DM	?DM	t-ratio
Group-A	7.631	7.520	0.111	0.01396	7.95*
Group-B	8.148	7.936	0.212	0.015668	13.53*
Group-C	7.581	7.564	0.017	0.05641	0.30

* Significant t0.05 (9) = 2.26

In order to find out the significant difference among the groups in two-hand medicine ball put performance, analysis of covariance was applied. The results pertaining to it are given in Table-2

TABLE-2

ANALYSIS OF COVARIANCE OF THE SCORES OF TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUPS IN TWO-HAND MEDICINE BALL PUT PERFORMANCE.

	Groups			Source of variance	SS	DF	Mss	F-ratio
	A	B	C					
Pre-test means	7.52	7.94	7.56	Among	1.05	2	0.52	
				Within	3.35	27	0.12	4.33*
Post-test means	7.63	8.15	7.58	Among	1.98	2	0.99	7.07*
				Within	3.82	27	0.14	
Adjusted post means	7.78	7.88	7.69	Among	0.17	2	0.09	9.00*
				Within	0.35	26	0.01	

* Significant F.05 (2,27) = 3.35

The analysis of covariance for two-hand medicine ball put performance indicates that the obtained F-ratio in case of pre-test means, post-test means and for adjusted post means were 4.33, 7.07 and 9.00

respectively. All the three values were found to be significant at 0.05 level of confidence. The required F-ratio to be significant was 3.35.

As the difference between the adjusted post means for the three groups was found to be significant, the critical difference for adjusted means was applied to find which of the difference between the paired adjusted means was most significant between the paired adjusted final means as shown in the Table-3.

TABLE-3
PAIRED ADJUSTED FINAL MEANS AND DIFFERENCES BETWEEN MEANS FOR THE TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUPS
IN TWO-HAND MEDICINE BALL PUT PERFORMANCE

Group-A	Group-B	Group-C	Mean difference	Critical difference
7.78	7.88		0.10*	0.10
	7.88	7.69	0.19*	0.10
7.78		7.69	0.09	0.10

* Significant CD .05 (2,26) = 0.10

DISCUSSION OF FINDINGS:-

The raw data was computed and t-ratio and analysis of covariance was applied. The application of t-ratio shows significant improvement in shoulder strength due to Plyometrics push-ups and hand press. This may be due to the fact that the load which was Plyometrics push-ups and hand press. This may be due to the fact that the load which was experienced by the subjects in these two training programme was adequate to produce significant improvement in shoulder strength. But no significant improvement in case of control group may be due to their non-participation in the training programme contributing to development of shoulder strength.

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