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Effect of Plyometric and Circuit Training on Hand and Shoulder Muscle Straight on School Children

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Abstract: *The aims was Effect of Plyometric and Circuit Training on Hand and Shoulder Muscle Straight on School Children. School Children (50, 50, 50, boys students) 14 to 16 years from the schools of Vasda, Dist Navsari. Total 150 School Children were selected as subjects for the sample of the present study, in which 50 Children were included in the plyometric training group, 50 Children in circuit training group and 50 Children were included in the control group. The 50 Children of 14 to 16 years age group were included in the present study. The Criterion measurement of Hand and Shoulder Muscle Straight through pull-ups. Statistical technique such as analysis of covariance was applied to know the effects on plyometric training group and circuit training group. Mean difference was examined at 0.05 levels by using Least Significant Difference (Post Hoc) Test. It is hereby clear that, due to Plyometric and Circuit training, significant improvement is seen in the performance of subjects of Plyometric Training Group and Circuit Training Group in Hand and Shoulder Muscle Straight Test with comparison to the Control Group. Noteworthy improvement is seen in Hand and Shoulder Muscle Straight of the subjects selected through 12 weeks training.*

Key Words: *Plyometric, Circuit Training, Hand and Shoulder Muscle Straight.*

1. Introduction :

The Europeans knew only training of jumping when some limited exercises were existed in Europe. Before 1970, unimaginative influence of Eastern European athletes (players) was found on sports all over the world. At that time, Fedvilt had tossed the first coin in 1975. Only American coaches were predominating in the field of sports and games. The term 'Plyometric' was derived from Latin language, which means 'more tough and burly'. It was believed that aim of plyometric was to provide exercise to athletes (players) and to provide disciplined training. Power is produced by joining force with speed while doing movement. In plyometric training, the important thing was that the player jumped, lifted or threw.

To form the structure of the circuit training, the coach measures characteristics of physical fitness of layers by giving a physical fitness test and decides which competencies they lack. Then, the coach constructs the training programme for development of lacking competencies. For example, if the coach sees less strength of shoulder muscles, he will include the exercise helpful to increase the strength of shoulder muscles in the circuit training. If the coach finds less speed, one or two exercises for increasing speed will be selected. In the same way, if developing the muscles of thigh or abdomen, some exercises for development of muscles of thigh or abdomen can be selected. Thus, one or two exercises for muscular power, flexibility, endurance etc are to be included in the circuit training and the structure of the training programme is prepared. Selections of exercises, exercise cycles, duration of training, density of exercise etc. are to be determined while preparing structure for the circuit training.

2. Aims of the Study :

The aims was Effect of Plyometric and Circuit Training on Hand and Shoulder Muscle Straight on School Children.

3. Selection of Subjects :

School Children (50, 50, 50, boys students) 14 to 16 years from the schools of Vasda, Dist Navsari. Total 150 School Children were selected as subjects for the sample of the present study, in which 50 Children were included in the plyometric training group, 50 Children in circuit training group and 50 Children were included in the control group. The 50 Children of 14 to 16 years age group were included in the present study.

Criterion measurement :

No.	Variable	Test	Measurement
1	Hand and Shoulder Muscle Straight	Pull Ups	Number

Statistical Process :

Statistical technique such as analysis of covariance was applied to know the effects on plyometric training group and circuit training group. Mean difference was examined at 0.05 levels by using Least Significant Difference (Post Hoc) Test.

4. Result of the Study :

Table – 1

Analysis of covariance of mean scores of as Hand and Shoulder Muscle Straight of two experimental groups and a control group

Test	Groups			Analysis of variance				
	Plyometric	Circuit	Control	Sum of classes (SS)		*df*	MSS	*'F'*
Pre test mean	6.32	6.74	6.86	A	8.04	2	4.02	1.497
				W	394.52	147	2.683	
Post-test mean	8.82	8.66	5.94	A	261.973	2	130.987	35.046*
				W	549.42	147	3.737	
Adjusted mean	8.821	8.659	5.938	A	259.682	2	129.841	34.503*
				W	549.409	146	3.763	

***Significance Level at 0.05 'F' (2,147) = 3.057 & (2,146) = 3.058**

In the Table-1 above, performance of Hand and Shoulder Muscle Straight Test *'F'* ratio of pre test was found to be 1.497. Comparing it with Table value (3.057), it was found insignificant at 0.05 level. The *'F'* ratio of Post Test was found 35.046. Comparing it with Table value (3.058) it was found significant at 0.05 level. In addition, the *'F'* ratio of Adjusted was found to be 34.503. It is shown in Table-2.

Table – 2

Critical difference of mean scores of Hand and Shoulder Muscle Straight of two experimental groups and a control group

Mean			Mean difference	Critical difference
Plyometric Training	Circuit Training	Control Group		
8.821	8.659		0.162	**0.766**
8.821		5.938	2.882*	
	8.659	5.938	2.720*	

*** Significance at 0.05 levels**

In the Table-2 very significant difference is observed in Plyometric Training Group with mean difference of 2.882 Thereafter, Circuit Training Group shows improvement with mean difference of 2.720. Very significant effect is seen of the training given to Plyometric Training, among Plyometric Training Group and Circuit Training Group in Practical Training. In comparison with Control group, the significant effect of practical training given to both the Experimental Groups of Plyometric Group and the Circuit Group was seen. Between two Experimental Groups no significant effect of practical training was seen. But, in comparison to Control Group, significant effect of practical training was seen in two Experimental Groups.

5. Conclusion :

It is hereby clear that, due to Plyometric and Circuit training, significant improvement is seen in the performance of subjects of Plyometric Training Group and Circuit Training Group in Hand and Shoulder Muscle Straight Test with comparison to the Control Group. Noteworthy improvement is seen in Hand and Shoulder Muscle Straight of the subjects selected through 12 weeks training.

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