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EFFECTS OF PLYOMETRICS AFTER WEIGHT TRAINING ON SELECTED SPEED PARAMETERS OF INTER COLLEGIATE MEN KHO KHO PLAYERS

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ABSTRACT: -

This study was designed to the investigate the effects of plyometric after weight training on selected speed parameters of inter-collegiate men kho-kho players. To achieve the purpose of the study (N=30) thirty college level men kho-kho players were randomly selected from Coimbatore District as subjects. Their age ranged between 18 and 25 years. They were divided into two equal groups. The Group- I was considered Experimental group one and group- II was considered control group. The investigator did not make any attempt equal group. The control group was not any training are the experimental group was given plyometric after weight training for three days per week for the period of twelve weeks. A pilot study was conducted to assess the initial capacity to the subject in order to fix the load. The following variables were chosen namely Acceleration speed (20 m acceleration sprint test), multiple speed (6X40 m multiple sprint test) Speed endurance (150 m run test).All the dependent variables were assessed before and after the training period of 12 weeks. The collected data on selected speed parameters due to effect of plyometric after weight training. Analyzed by capacity mean and standard deviation. In order to find out the significant improvement if any,'t'test was applied at 0.05 level of confidence was fixed to test the level of significance. The study that the speed parameters were significantly improved due to effects of plyometric after weight training.

KEYWORDS: *Plyometric after weight training speed parameters.*

INTRODUCTION :

Kho-kho is an Indian traditional game. Kho-kho game is played mostly in rural and urban areas. Kho-kho is a team game of speed, stamina, endurance and strength. Although it is a team event, individuals' fitness plays a vital role in the achievement of the game. Mostly, it is a missing link of the team. During the practices of session for winning matches, coaches must plan for the individual fitness as well as team fitness.

Plyometrics, also identified as "jump training" (JT) or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increases power (speed-strength). This training focuses on knowledge to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specific repeated jumping. Chu et al., (1998)

Resistance Training or weight training (RT) by children and adolescents has attracted better interest as a mean to develop the health and performance related fitness components. The National Strength and Conditioning Association (NSCA) defines that the Resistance Training (RT) is a particular form of training which involves the progressive use of a large range of resistive loads and a selection of training modalities that considered to enhance health, fitness, and sports

performance (Faigenbaum, 2009).

The hypothesis argued in this study is that intercollegiate men kho - kho players can significantly improve the parameters of Acceleration speed, muilyple speed and Speed endurance by combining technical and tactical sessions with a Plyometric after weight training program over a consecutive 12 weeks period. Therefore, the object of this study was to investigate the changes in the parameters produced during 12 weeks of Plyometric after weight training in thirty inter-collegiate kho - kho players.

METHODS

Experimental approach to the problem

In order to address the hypothesis presented here in, we selected (N=30) intercollegiate men kho-kho players from Coimbatore District. The subjects were randomly assigned into two equal groups namely plyometric after weight training (experimental group) (N=15) and control group (N=15). A pilot study was conducted to assess the initial capacity to the subject in order to fix the load. Plyometric after weight training was given to the experimental group for 3 days per week (alternate days) for a period of twelve weeks. The control group was not given any sort training except their routine.

STATISTICAL ANALYSIS

The collected data before and after training period of 12 weeks on the above said variables due to the effects of plyometric after weight training was statistically analyzed with't' test to find out the significant improvement between pre and post test. In all cases the criterion for statistical significance was set at 0.05 level of confidence. ($P < 0.05$)

TRAINING PROGRAMME

The training programme was lasted for 45 minutes for session in a day, 3 days, in a week for a period of 8 weeks duration. These 45 minutes included 5 minutes warm up, 15 minutes regular physical exercises, plyometric after weight training for 20 minutes and 5 minutes warm down. Every two weeks of training 5% of intensity of load was increased from 65% to 80% of work load. The volume of plyometric after weight training is prescribed based on the number of sets and repetitions. The plyometric after weight training exercises are Bleacher hops, Box jumps, and Leg press, Lunges, burpee, sit ups, power push ups, squats and leg raises Cone hops with change of direction sprint, Double leg hops and Double leg zig zag hops.

TABLE - I
COMPUTATION OF't'-RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON ACCELERATION SPEED

Group		Mean	Standard deviation	Mean Difference	Standard error mean	t-ratio
Experimental Group	Pre test	3.47	0.19	0.59	0.68	3.36*
	Post test	3.24	0.21			
Control Group	Pre test	3.49	0.26	0.01	0.10	0.13
	Post test	3.50	0.20			

*Significant at 0.05 level of confidence 1and 14(2.14)

Table I reveals that the computation of't' ratio between mean of pre and posttest on acceleration speed of inter-collegiate men kho-kho players of experimental .The mean values of pre and post test of experimental group were 3.47 and 3.24 respectively. Since, the obtained't' ratio 3.36 was higher than the required table value 2.145, it was found to be statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the acceleration speed of the experimental group improved due to the influence plyometric after weight training.

Further the table reveals that the computation of't' ratio between mean of pre and post test on acceleration speed of inter-collegiate men kho-kho players. The mean values of pre and post test of control group were 3.49 and 3.50 respectively. Since, the obtained' ratio 1.22 was less than the required table value 2.145, it was found to be statistically not significant for the degree of freedom 1 and 14 at 0.05 level of significance. The results clearly indicated that the acceleration speed of the control group had not been improved.

TABLE -II

COMPUTATION OF't'-RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON MULTIPLE SPEED

Group		Mean	Standard deviation	Mean Difference	Standard error mean	t-ratio
Experimental Group	Pre test	38.68	0.93	0.74	0.28	2.61*
	Post test	37.94	1.08			
Control Group	Pre test	38.64	0.99	0.45	0.26	1.71
	Post test	39.10	0.69			

*Significant at 0.05 level of confidence 1and 14(2.14)

Table II reveals that the computation of't' ratio between mean of pre and post test on multiple speed of inter-collegiate men kho-kho players of experimental group. The mean values of pre and post test of experimental group were 38.68 and 37.94 respectively. Since, the obtained't' ratio 2.61 was higher than the required table value 2.145, it was found to be statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the multiple speed of the experimental group improved due to the plyometric after weight training.

Further the table reveals that the computation of't' ratio between mean of pre and post test on multiple speed of inter-collegiate men kho-kho players. The mean values of pre and post test of control group were 38.64 and 39.10 respectively. Since, the obtained't' ratio 1.71 was less than the required table value 2.145, it was found to be statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the multiple speed of the control group had not been improved.

TABLE -III

COMPUTATION OF't'-RATIO BETWEEN PRE AND POST TEST MEANS OF EXPERIMENTAL GROUP AND CONTROL GROUP ON SPEED ENDURANCE

Group		Mean	Standard deviation	Mean Difference	Standard error mean	t-ratio
Experimental Group	Pre test	21.56	0.67	0.59	0.23	2.52*
	Post test	20.96	0.74			
Control Group	Pre test	21.59	0.63	0.33	0.26	1.22
	Post test	21.92	0.87			

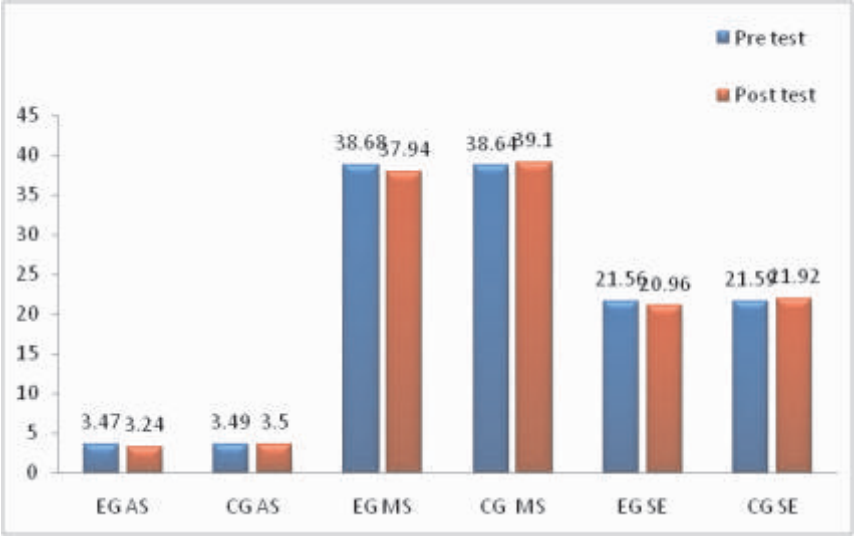
*Significant at 0.05 level of confidence 1and 14(2.14)

Table II reveals that the computation of't' ratio between mean of pre and post test on speed endurance of intercollegiate kho-kho players of experimental group. The mean values of pre and post test of experimental group were 21.56 and 20.96 respectively. Since, the obtained't' ratio 2.52 was higher than the required table value 2.145, it was found to be statistically significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results

clearly indicated that the speed endurance of the experimental group improved due to the plyometric after weight training.

Further the table reveals that the computation of't' ratio between mean of pre and post test on speed endurance of inter-collegiate men kho-kho players. The mean values of pre and post test of control group were 21.59 and 21.92 respectively. Since, the obtained't' ratio 1.22 was less than the required table value 2.145, it was found to be statistically not significant for the degree of freedom 1 and 14 at 0.05 level of confidence. The results clearly indicated that the speed endurance of the control group had not been improved.

Figure shows the pre and post test means of experimental group and control group On Acceleration speed, multiple speed and Speed endurance



DISCUSSION ON FINDINGS

The present study experimented the investigated Effects of plyometric after weight training on selected speed parameters of intercollegiate men kho - kho players. The results of this study indicated that plyometric after weight training improved Acceleration speed, multiple speed and Speed endurance. The findings of the present study had similarity with the findings of the investigators referred in this study. Mathisen et al., (2014) effect of a high-intensity sprint program on 13-year-old female soccer players improved in both linear speed up to 20 meter (acceleration). Balaji et al., (2017) Twelve weeks of maximal power training with plyometrics training programme produced significant improved acceleration speed, and multiple speed of men team handball players. Robert et al., (2013) 8 week plyometric training, resistance training and sprint training improved acceleration speed of men basketball players. Gunnar (2014) improvements in both agility and in linear sprint performance in adolescent male soccer players.

From of result of the present study, it is speculated that the observed changes on Acceleration speed, multiple speed and Speed endurance may be due properly designed plyometric after weight training which are suitable to intercollegiate men kho-kho players.

CONCLUSIONS

Twelve weeks of plyometric after weight training significantly improved the Acceleration speed, multiple speed and Speed endurance of inter-collegiate men kho-kho players.

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