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EFFECT OF PLYOMETRIC TRAINING AND WEIGHT TRAINING ON AGILITY OF INTER COLLEGIATE VOLLEYBALL PLAYERS IN Dr.YSR HORTICULTURAL UNIVERSITY

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ABSTRACT

The purpose of the present study was to investigate the effect of plyometric training and weight training on agility of Volleyball players. To achieve the purpose of the study 60 members Inter collegiate volleyball players were selected from Dr.YSR Horticultural University , were selected as subjects at random and their age ranged between 18 to 21 years were selected as subject at random. The study was formulated as pre and post test random group design, in which 60 were divided into three equal groups. The experimental – 1 (n=20, PT) underwent polymeric training, the experimental group-2 (n=20, WT) underwent weight training and group-3 (n=20, CG) served as a control group did not undergo any training. In this study, two training programme were adopted as independent variables, i.e., polymeric training and weight training. The agility was chosen as dependent variable. It was tested by T-test jump and performance recorded in seconds. The selected two treatment groups were performed twelve groups, as per the stipulated training programme. The capacity of agility was tested by before and after the training period. The collected pre and post data was critically analyzed statistical tool of analysis of covariance, for the observed the significant adjusted post-test mean difference of two different groups. The Scheffe's post hoc test was used to find out pair-wise comparison between groups. To test the hypothesis 0.05 level of significant level was fixed. The result of the present study proved that the two training interventions have produced significant improvements on agility.

Keywords: Polymeric raining, Weight training, Agility and Volleyball Players.

INTRODUCTION

Resistance training is the ideal counterpart to plyomeric training because it helps prepare the muscles for the rapid impact loading of plyomeric exercises. In resistance training, the athlete works to develop the eccentric phase of muscle contraction by first lowering the body or weight and then overcoming the weight using a concentric contraction. Plyomeric training can be successfully integrated with resistance training by immediately imposing a speed-strength task on muscles that have been subjected to pure strength movements such as those in weightlifting (as discussed earlier regarding complex training). Chu and Myer plyomeric and resistance exercises in their research and stated that if plyomeric and resistance exercises were used together, they would result in an increase in explosive power, Bauer *et al*. functional movements and athletic success depend on both the proper function of all active muscles and the speed at which these muscular forces are used. The term used to define this force-speed relationship is power. When used correctly, plyomeric training has consistently been shown to improve the production of muscle force and power.

METHODOLOGY

The 60 Inter Collegiate players were selected from Dr YSR Horticulture University. The study was formulated as pre- and post-test random group design, in which 60 subjects were divided into three equal groups. The experimental Group-1 (n = 20, PT) underwent plyomeric training, the experimental Group-2 (n = 20, WT) underwent weight training, and Group-3 (n = 20, CG) served as a control group did not undergo any training. In this study, two training programs were adopted as an independent variable, that is, polymeric training and weight training. The agility was chosen as the dependent variable. It was tested by *t*-test and recorded seconds. The selected two treatment groups were performed 12 weeks, as per the stipulated training program. The condition of agility was tested before and after the training period. The collected pre- and post-data were critically analyzed with the statistical tool of analysis of covariance, for observed the significant adjusted post-test mean difference of two groups. The Scheffe's *post hoc* test was used to find out pair wise comparisons between groups. The subjects were involved with their respective training for a period of 12 weeks.

Table -1: The results of the analysis of covariance of agility of different groups (Scores in seconds)

Means	G-I(PT)	G-II(WT)	G-III(CG)	Sources of variance	Sum of Square	Df	Mean Square	"F" ratio	Sig
Pre -Test SD +_	13.66 +_ 0.900	13.73 +_ 0.66	13.69 +_0.85	Between	0.013	2	0.006	0.01	0.996
				With in	23.909	42	0.654		
Post-Test SD+_	12.34 +_0.897	12.38 +_0.896	13.15 +_0.657	Between	13.215	2	6.198	13.40*	0
				With in	20.234	42	0.656		
Adjuste Post test	12.45	12.48	12.89	Between	13.65	2	7.89	14.89	0
				With in	17.989	41			

*Significant at 0.05 level of confidence.

Table 1 reveals that the pre-test means values of plyomeric training, weight training, and control groups of college men players on agility are 13.66, 13.73, and 13.69, respectively. The obtained "F" ratio value is 0.01and the P = 0.996 which is greater than 0.05. This shows that there was an insignificant difference between the experimental groups and control group. The post-test mean values of plyomeric training, weight training, and control groups of college men players on agility are 12.34, 12.38, and 13.15, respectively. The obtained "F" ratio value is 13.40 and the P = 0.000 which is <0.05. It shows a statistically significant difference between the experimental groups and control group on agility. The adjusted post-test means values of plyomeric training, weight training, and control groups of college men players on agility are 12.45, 12.48, and 12.89, respectively. The obtained "F" ratio value is 14.83 and the P = 0.000 which is <0.05. It revealed that there is a significant change due to plyomeric training and weight training on agility. To find out the paired mean differences if any Scheffe's *post-hoc* test was applied.

Table 2: The results of Scheffe's post hoc test mean differences on speed among different groups (scores in seconds)

G-I(PT)	G-II(WT)	G-III(CG)	MD	CI
13.43	13.49	-	0.04	0.64
13.43	-	14.46	2.11*	-
-	13.43	14.46	2.09*	-

*Significant at 0.05 level of confidence, Scheffe's CI Value of agility was 0.64.

Table 2 shows the paired mean differences of plyomeric training and weight training and control group on agility. The pairwise mean difference of Group 1 and Group 2 values 0.02 was lesser than the confidential interval value of 0.64. Hence, the first comparison was insignificant. The results of this comparison clearly proved that plyomeric training has produced a significantly different effect on agility than weight training. The pairwise mean difference of Group 1 and Group 3 values 2.11 was higher than the confidential interval value of 0.64. Hence, the second comparison was significant. The results of this comparison clearly proved that polymeric training has produced a significantly different effect on agility than the control group. The pairwise mean difference of Group 2 and Group 3 values 2.09 was higher than the confidential interval value of 0.64. Hence, the third comparison was significant. The results of this

comparison clearly proved that plyomeric training has produced a significantly different effect on agility than the control group.

DISCUSSION ON FINDINGS

The results of the study denote that the experimental groups, namely plyomeric training and weight training, have significantly differed from the selected dependent variables, namely agility, compared to the control group. It is also found that the improvement caused by polymeric training was greater when compared to the effects caused by the weight training group and control group.

AGILITY

The end result of the study clearly indicated that there was a significant difference among the training groups and control group on agility responses to 12 weeks of training intervention among inter collegiate volleyball players. Further significant improvement has been noticed in the level of agility between the experimental groups when compared with the control group. After analyzing statistical end results, the researcher found the selected training groups have significantly increased the level of agility from the base to post interventions. The change from pre- to post intervention is as follows. The plyomeric training group from pre-13.66 to post-12.34 and weight training group from pre-13.73 to post-12.38 has significantly changed the pre- and post-results. The present study demonstrates the increased level of agility of 9.08% and 9.06% for plyomeric training and weight training group, respectively.

CONCLUSIONS

The results of this study indicate that the selected two training interventions, namely plyomeric training and weight training, would produce significantly altered on agility to the college men players. However, plyomeric training influenced the greater development of agility. Further plyomeric training has produced a significant alteration in the condition of agility than weight training.

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