Effect of Plyometric and Resistance Training on College Women Hockey Players

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Abstract

Purpose of the study was to compare the effects of Plyometric and resistance training on hockey skills of College Women Hockey Players. Subjects were selected by using purposive sampling technique between the age group of 18 to 25 years. Subjects were further divided into two experimental groups (plyometric and resistance training group) and one control group of fifteen subjects in each group. Training schedule of ten weeks of plyometric and resistance training was prepared which was followed by the experimental groups on a week. Harbans Singh Field Hockey Test (1982) was further compared by the application of ANCOVA and LSD post hoc test. It was concluded that both training programe has similar potential to develop different skills of College Women Hockey Players.

Keywords: Plyometric training, Resistance training, College women, Hockey players.

Introduction

Speed and strength are integral components of fitness found in varying degrees in virtually all athletic movements. Simply put the combination of speed and strength is power. Throughout this century and no doubt long before, jumping, bounding and hopping exercises have been used in various ways to enhance athletic performance. In recent years, this distinct method of training for power or explosiveness has been termed plyometrics. Whatever the origin of the word the term is used to describe the method of training that seeks to enhance the explosive reaction of the individual through powerful muscular contractions because of rapid eccentric contractions. The Objectives of this study was to find out the effect of plyometric, resistance on College Women Hockey Players.

Methodology

For the present study researcher selected 45 College Women Hockey players. Subjects were selected by using purposive sampling technique between the age group of 18 to 25 years. Purpose of the study along with the various testing procedures and training program was explained to subjects in detail so that they could fully grasp the importance of all features and should suffer not from any confusion regarding the hard work they will have to put in. All the subjects agreed to cooperate whole heartily. After pre test of various skills of Harbans Singh Hockey Skill test, subjects were further divided into two experimental groups (plyometric and resistance training group) and one control group of fifteen

subjects in each group. Training schedule of eight weeks of plyometric and resistance training were given to both experimental groups respectively on alternate days. Data collected with the help of suitable tool were analysed by using the ANCOVA and LSD post hoctest to compare the effect of plyometric and resistance training on experimental and control group. Both the components of Harbans Singh Hockey Skill Test (1982) i.e. dribbling and hitting, and dribbling and shooting was used tool for this study.

Results and Discussion

Table–I

ANCOVA of Plyometric Resistance Training on Dribbling and Hitting Ability of College Women Hockey Players

T Training	Variance	Sum of square	d.f.	Mean square	F-ratio
Plyometric	Between Group	183.35	2	91.67	4.57*
	Within Group	821.51	41	20.04	

Significant at 0.05 level F 0.05 (2, 41) =3.23

Table no 1 indicates that there is a significant difference exists between different training groups as calculated F-ratio of 4.57 was greater than required tabulated F - value of 3.23 at 0.05 level of significance. Further to know the actual difference due to training among different training methods post hoc test was applied

Table-II

LSD Post hoc Test of Plyometric and Resistance Training on Dribbling and Hitting Ability of College Women Hockey Players

Adjusted Mean of Plyometric Training	Adjusted Mean of Resistance Training	Adjusted Mean of control group	Mean Difference	Critical Difference
1.04	1.17		0.13*	0.11
1.04		1.23	0.19*	
	1.17	1.23	0.06	

Above table II indicates that there is a significance difference among plyometric and resistance training groups as well as between plyometric and control group as mean difference of both of them were more than the required critical difference of 0.11. No significant difference was found between resistance training and control group as their mean difference was much lesser than critical difference at 0.05 level of significance. Graphical representation of above table is shown in Figure -1

Figure-1

Adjusted Mean Values of Dribbling and Hitting After Different Types of Training

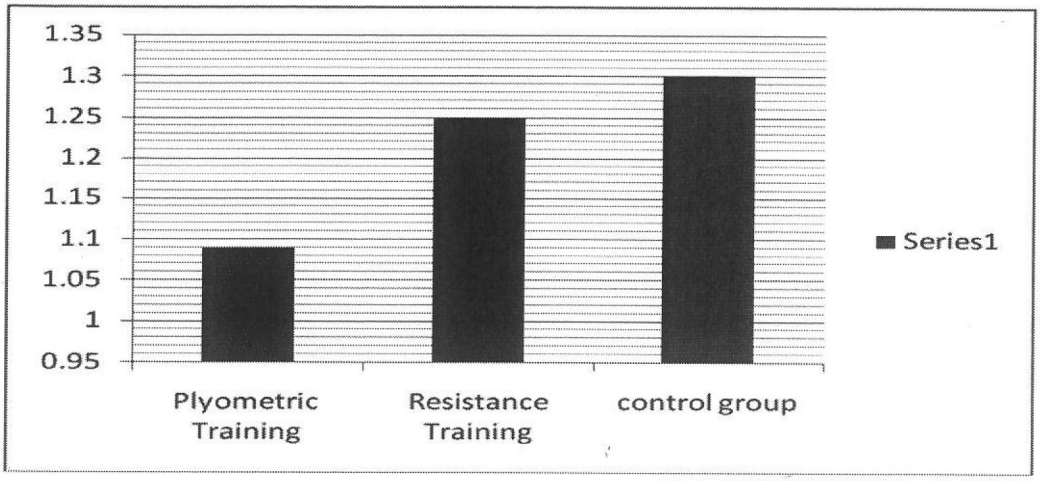


Table-III

ANCOVA of Plyometric and Resistance Training on Dribbling and Shooting Ability of College Women Hockey Players

Training	Variance	Sum of square	D.F	Mean square	F-ratio
Pyometric	Between Group	92.05	2	46.02	3. 3.62*
	Within Group	521.01	41	12.71	

*Significant at 5% level of significance F 0.05 (2, 41) = 3.23

Above Table - III indicates that there was a significant difference between different training groups as Calculated F-ratio of 4.57 is greater than the required tabulated F-value of 3.23 at 0.05 level of significance. Further to know that the actual difference due to training among different training methods post hoc test was applied.

Table-IV

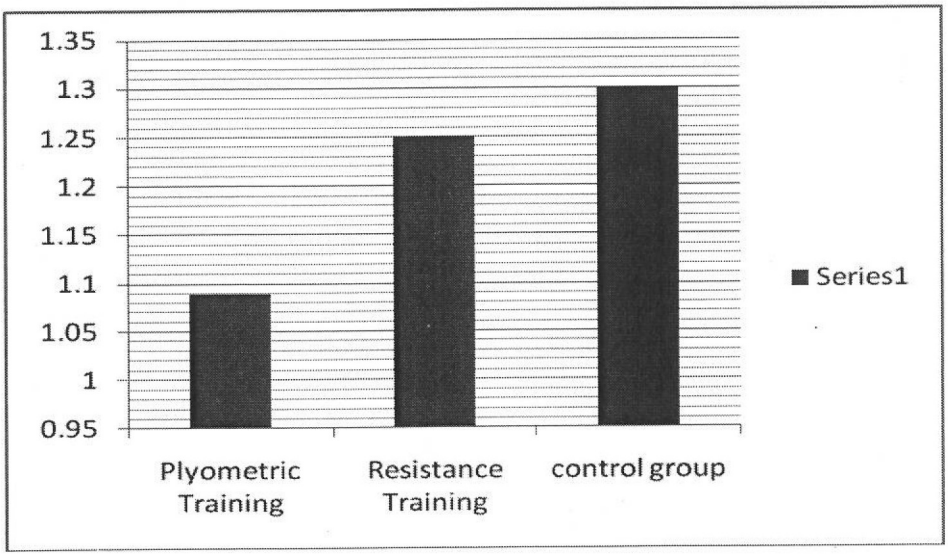
LSD Post Hoc Test of Plyometric and Resistance Training on Dribbling and Shooting Ability of College Women Hockey Players

Adjusted Mean f of Plyometric Training	Adjusted Mean of Resistance Training	Adjusted Mean f of Control Group	Mean Difference	Critica Differenc
1.09	1.25		0.16*	0.13
1.09		1.30	0.21*	
	1.25	1.30	0.05	

Above table - IV indicates that there is a significant difference among plyometric and resistance training as well as between plyometric and control group as mean difference of both of them were more the required critical difference of 0.13. No significant difference was found between resistance training and control group as their mean difference was much lesser than critical difference at 0.05 level of significance. Graphical representation of above table is shown in Figure-2.

Figure-2

Adjusted Mean Values of Dribbling and Shooting after Different Types of Training



On the basis of the result, it accomplished that the Plyometric and resistance training program have a significant impact on the accuracy of dribbling and hitting skill of the subjects of experimental groups. Therefore null hypothesis is rejected in the lights of above findings. The finding of Martel (2006) and Sharma (2009) is also supporting the result of the study.

Conclusion

It was concluded that plyometric and resistance training had significant effect on dribbling and shooting ability of College Women Hockey Players.

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