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Impact of Plyometric Exercises on Speed Among Cricket Players

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Abstract

The purpose of the study was to determine the effect of plyometric exercise on speed among men cricket players. The subjects of the study were 60 men cricket players from Pulwama District of Jammu and Kashmir State of India. The subjects were randomly assignedinto two groups that is an experimental group and a control group with 30 subjects in each group. The experimental group underwent plyometrictraining program for 60 minutes per day for a period of 12 weeks for 5 days a week. The control group did not involve in any fitness program. 50 yards run was administrated before and after the training period and the difference was recorded to notice the effect of plyometric exercise.

KEYWORDS : *Plyometrics, cricket, Speed.*

Introduction

Plyometrics refers to human movement that involves an eccentric(lengthening) muscle contraction immediately and rapidlyfollowed by a concentric (shortening) contraction. This is oftenreferred to as the stretch-shortening cycle. The phase betweenthese two contractions is referred to as the amortization phase.Energy stored during the eccentric phase is partially recoveredduring the concentric phase. In order to best use this stored energythe eccentric phase must be rapidly followed by the concentric. Plyometrics (also known as “plyos”) is a type of exercise trainingdesigned to produce fast, powerful movements, and improve thefunctions of the nervous system, generally for the purpose of improvingperformance in sports. Plyometric movements, in whicha muscle is loaded and then contracted in rapid sequence, usethe strength, elasticity and innervation of muscle and surroundingtissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal. Plyometrics is used to increase the speed or force of muscular contractions, providingexplosiveness for a variety of sport-specific activities. Plyometrics has been shown across the literature to be beneficial to avariety of athletes. Benefits range from injury prevention, powerdevelopment and sprint performance amongst others.Plyometric training involves and uses practicing plyometricmovements to toughen tissues and train nerve cells to stimulatea specific pattern of muscle contraction so the muscle generatesas strong a contraction as possible in the shortest amountof time. A plyometric contraction involves first a rapid musclelengthening

movement (eccentric phase), followed by a shortresting phase (amortization phase), then an explosive muscleshortening movement (concentric phase), which enables musclesto work together in doing the particular motion. Plyometric training engages the myotatic reflex, which is the automaticcontraction of muscles when their stretch sensory receptors arestimulated.Cricket is an excellent all round team sport and has beenwidely accepted as a highly competitivegame. The Cricket players used to involve in different type ofphysical training and this study is also under taken to find outthe effect of plyometric exercises on speed among men Cricketplayers.

Methodology

The purpose of the study was to determine the effect of plyometricexercise on speed among men Cricket players. Thesubjects of the studywere 60 men Cricket players from Pulwama district of J & K state of India. The subjects were randomly assigned into twogroups that is an experimental group and a control group with30 subjects in each group. The experimental group underwentplyometric training program for 60 minutes dailyevening, weekly five days for a period of 12 weeks. Plyometric exercisework out includes Lateral High Hopes , Hurdle jumps, LateralBarrier jumps, Split Squat jumps, Bounding, Bounding with Rings, Zig-Zag Hops, Depth jumps. 50 yards run was administratedto find out the effect of training before and after the trainingperiod and the difference was recorded to arrive at the trainingsignificance.

Result of Speed

The mean, standard deviation and t-test were employed to analyzethe significant difference in the mean value of pre and posttestof experimental and control groups and are presented in Table-1 and Table-2

Table-1

Significant Difference of pre and post-test values of experimental group

Variables	Test	mean	sd	T value
Speed	Pre-Test	7.08	0.208624	5.23896*
	Post-Test	6.518	0.074	

***significant at 0.05 level of confidence t0.05 (22) = 2.074**

The experimental group pre and post-test mean, standard deviationand t-values are presented in Table-2 and it reveals the significantlevel in the effect of plyometric exercise on experimentalgroup. The t-value of the selected variable is above the table valueof 2.074. Hence the study indicates that the plyometric exerciseis useful for the significant improvement of physical fitnessvariable speed.

Table-2
Significant Difference of pre and post-test values of experimental Group

Variables	test	mean	sd	T value
Speed	Pre-Test	7.01	1.000728	0.06493*
	Post-Test	7.06	1.18029	

***significant at 0.05 level of confidence t0.05 (22) = 2.074**

The control group pre and post-test mean, standard deviationand t-values are present in Table-2. The result indicates thatthere is no significant difference in speed.

Discussion

All the subjects of the experimental group underwent regularplyometric training which was assigned to them. From theanalysis it is evident that in the case of 50 yards run significantchanges were noticed after twelve weeks of different plyometric exercises. But the control group did not show anychanges in the 50 yards run timing. The timing significantly reduceddue to the plyometric training. The study reveals thatthe experimental group are significant than the control group. The result of the study is in consonance with the finding of the following studies of Rahman Rahimi. et.al, (2006), Miller, et.al. (2006)

Conclusion

From the results and discussions it is concluded that the plyometric exercises have a positive impact impact on the improvementin speed.In control group there is no significant improvement found and the result of the study indicates that plyometric exercise is useful for the development of various physical fitness variables.

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