



COMPARATIVE STUDY BETWEEN EFFECTS OF PLYOMETRIC TRAINING PROGRAM AND CORE TRAINING ON AGILITY AND BALANCE IN HOCKEY PLAYERS

Physiotherapy

Dr. Deepti

MPT Sports- Demonstrator, UCOP(BFUHS) Faridkot

Dr. Fathejeet Mann MPT Sports-assistant Proffesor, SINPMS(BADAL)

KEYWORDS

INTRODUCTION

Field hockey, is a globally popular sport requiring strength, speed, and skill to achieve elite performance. It involves various aspects of physical fitness and is a fast-paced game requiring extreme fitness for competitive play. Players must possess strong aerobic and anaerobic capacities to succeed. Speed is a crucial component, necessary for both short and long-range quickness to excel offensively and defensively. Instantaneous velocity is essential for stealing the opponent's ball and accelerating with the stick and ball, with strong aerobic capacity helping maintain each sprint effort. For short playing duration the need for accuracy and speed highlight the importance of basic motor abilities for hockey players. Specific motor skills, such as fast power, speed, strength continuity, and coordination, are emphasized in hockey.

Aims and Objectives:

1. To find out the effects of Plyometric Training on agility in Hockey Players.
2. To determine the effect of Plyometric training on balance in hockey players.
3. To find out the effect of Core Training on agility in hockey players.

METHODOLOGY.

Study Design: The research design of present study was quasi experimental in nature.

Research Setting: Government Brijindra College and nearby sports colleges/ stadiums, Faridkot. 4.3

Sample Size: 30 hockey players (Male) playing at collegiate level at Hockey Stadium, Govt. Barjindra College, Faridkot (Punjab). Group A was Experimental group with sample size n=15 Group B was Control group with sample size n=15

Inclusion Criteria:

- Male Subjects aged between 18-21 years.
- Subject will not be involved in any other intervention during the study.
- The subjects who are playing hockey at least thrice a week.

Exclusion Criteria:

- Players who had participated in any formal core training or plyometric training.
- Any known history of sustained trauma.
- Players who are not willing to participate in the study.

Procedure:

Each subject was assessed for agility and balance using the Illinois Agility Test, Shuttle Run Test, and Y-Balance Test. Prior to participation, informed written consent was obtained from all subjects. Following this, they were randomly assigned to one of two groups (Group A and Group B) using a simple random method. Group A underwent Plyometric Training, while Group B received Core Training. The training sessions were conducted three times a week over a period of eight weeks. Assessments were performed on the 0th day (pre-intervention) and again at the end of the 8-week program (post-intervention) to evaluate the effect of the training interventions.

Graphical Representation of Comparison at PRE (0th day) and After Post (8 th Weeks) Score Measurements of Composite Score within Group A.

GROUP A	COMPOSITE SCORE	
PAIRED t-test	PRE	POST
Mean	49.200	57.867
S.D.	2.0771	1.5523
Number	15	15
Mean Diff.	8.6667	
P- value	<0.001*	

Paired t-test for Comparison at PRE (0th day) and After Post (8 th Weeks) Score Measurements of Illinois Agility Within Group B.

GROUP B	ILLINOIS AGILITY	
PAIRED t-test	PRE	POST
Mean	17.007	16.667
S.D.	.7418	.7518
Number	15	15
Mean Diff.	.3400	
P- value	<0.001*	

DISCUSSION

The findings of present study indicate that both training initiatives resulted in notable enhancements in agility and balance, but Plyometric Training (Group A) demonstrated superior gains compared to Core Training (Group B). The observed improvements were consistent with previous research highlighting the role of plyometric exercises in enhancing neuromuscular efficiency, proprioception, and explosive strength.

REFERENCES

1. Markovic, G., & Mikulic, P. (2010). Neuro-musculoskeletal and performance adaptations to lower-extremity plyometric training. *Sports Medicine*, 40(10), 859-895. 53
2. De Villarreal, E. S., Requena, B., & Newton, R. U. (2008). Does plyometric training improve strength performance? A meta-analysis. *Journal of Science and Medicine in Sport*, 11(6), 481-488. 54. McLeod, T. C., Armstrong, T.
3. Miller, M., & Sauers, E. L. (2009). Balance improvements in female high school basketball players after a 6-week neuromuscular-training program. *Journal of Athletic Training*, 44(3), 307-315
4. Sato, K., & Mokha, M. (2009). Does core strength training influence running kinetics, lower-extremity stability, and 5000-M performance in runners? *Journal of Strength and Conditioning Research*, 23(1), 133-140. 56.