EFFECT OF VARIOUS SURFACES OF PLYOMETRIC TRAINING ON EXPLOSIVE POWER AND REACTION TIME AMONG COLLEGE LEVEL PLAYERS

P Arul Jothi Ph.D, Research Scholar, Dr. C. Suresh, Assistant Professor
Department of Physical Education and Sports Science, College of Science and Humanities, SRM Institute of Science and Technology, Kattankulathur, Tamilnadu, India.

Abstract

Aim: To study about the explosive power and reaction time among college players.

Background: We examine the college level players.

Objectives: Total of 45 college players from South-Chennai, TamilNadu, India at the age range between 19 to 24 have participating in this study. That is made to determine the effect of various surface of plyometric training on explosive power and reaction time among college.

Methods: The subjects were separated into three equal groups of 15 each. Experimental group-A lawn surface plyometric training and group-B Wooden surface plyometric training was control group was not treated. Various plyometric exercises will be given for group – A and B for twelve weeks.

Results: The data retrieval process is done by explosive power measured by Sargent Jump Test and reaction time measured by construction method analysis at pre-test and post-test. Collected data’s will be analysed by ‘t’-test. The level of confidence (LOC) 0.05 was fixed.

Conclusion: The result of the research shows various surface plyometric training gave positive performance on explosive power and reaction time when compare to control group.

Keywords: Plyometric Training, various ground surface, College players.

Introduction

Plyometric (ply) practice begins with a quick stretch of a muscle followed by a fast shortening. Strength preparing can further develop muscle execution and coordination of muscle groups. The nerve system is adapted to respond all the more rapidly to the stretch-shortening cycle. Ply either alone or in mix with other preparing modalities evokes various positive changes in the neural and outer muscle frameworks, muscle work and athletic
execution of sound individuals. Ply alludes to practices that are intended to improve neuromuscular performance.

Ply practices establish a characteristic piece of most game developments as they include bouncing, jumping and skipping. The advancement of maximal strength execution as this neuromuscular quality seems to support most different spaces of human actual limit. Ply preparing is a set up strategy for improving athletic execution may likewise work with advantageous variations in the sensorimotor framework that upgrade dynamic limitation instruments and right defective hopping or cutting mechanics.

Ply practices are characterized as capricious stacking promptly followed by a concentric constriction. Useful preparing strategies with dreary bouncing and deceleration exercises might make plastic neurologic transformations to engine programs that further develop coordination for both execution and dynamic restriction. Ply practices increment execution and abatement injury hazard. Neuromuscular transformations are accepted to upgrade dynamic knee steadiness and execution the particular variations answerable for the achievement of ply preparing are as yet hypothetical.

Various surfaces should be considered at plyometric preparing. Hard level surface that is for the most part put together with wood or synthetic materials. Ply preparing on lawn is practical choice for sport trained professionals and competitors. The hardness of the preparation surfaces with their separate compensation coefficient. Distinctive preparing actuated impacts on some neuromuscular elements identified with the productivity of the stretch-shortening cycle.

Methods

The study was a randomized controlled trial. 45Subjects were designed randomly to A- Lawn surface PLYG and B - Wooden surface PLYG as experimental group and C- control group. The control group was instructed to maintain regular activities and to avoid any strenuous physical activity during the study. Subjects in experimental groups completed 12-weeks exercise training on alternate days (3 days of training a week). Performance tests were performed in the week before and the week after the 12 weeks of training period. All testing and preparing occurred simultaneously of day to control for in execution. To eliminate conceivable learning impacts that could bewilder the aftereffects of the review, all subjects took an interest in a 1-week acclimation period before inception of the review to acclimate themselves to the testing and preparing method. Explosive power is measured by Sargent jump
test and reaction time measured by construction method. The three groups were statistically analysed by using ‘t’ test and IBM SPSS 23 was using for statistical analysis and significant level 0.05 of confidence.

<table>
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<tr>
<th>Sn.no</th>
<th>Variables</th>
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<tbody>
<tr>
<td>1.</td>
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<td>Sargent jump test</td>
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<td>2.</td>
<td>Reaction time</td>
<td>construction method</td>
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Results

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<tr>
<th>Groups</th>
<th>Pre</th>
<th>Post</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>T Value</th>
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<tbody>
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<td>LAPLYG</td>
<td>35.70</td>
<td>38.18</td>
<td>2.48</td>
<td>2.25</td>
<td>4.25*</td>
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<td>WDPLYG</td>
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<td>38.58</td>
<td>3.09</td>
<td>2.29</td>
<td>5.21*</td>
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<td>CNG</td>
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<td>35.39</td>
<td>0.23</td>
<td>2.73</td>
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</table>

<table>
<thead>
<tr>
<th>Groups</th>
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<tbody>
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<td>WDPLYG</td>
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<td>25.12*</td>
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<td>CNG</td>
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<td>0.46</td>
<td>2.41</td>
<td>0.74</td>
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</table>

Significant level 0.05 table value 2.01

The obtained 't'- ratio of explosive power of LASDPLYG was 4.25*, WDPLYG was 5.21* is more noteworthy than the table value and get huge LOC 0.05 but the CNG’t’-ratio was 0.32 and it was lesser than table value it ought to be immaterial.

The obtained 't'- ratio of Reaction time of LAPLYG was 17.20*, WDPLYG was 25.21* is more noteworthy than the table value and get huge LOC 0.05 but the CNG’t’-ratio was 0.74 and it was lesser than table value it ought to be inconsequential.

Conclusion

It was concluded that experimental groups have greater significant in explosive power and reaction due to the 12 weeks of plyometric training.

ACKNOWLEDGEMENT

Conflict of Interest: Nil
Ethical Clearance: Nil

Source of Funding: Self
THE AUTHORS CONFIRM CONTRIBUTION TO THE PAPER AS FOLLOWS:

P. Arul Jothi conceptualized and gathered the info with relevancy this work. Dr. C. Suresh and P. Arul Jothi analysed these knowledge and necessary inputs got towards the planning of the manuscript. All authors mentioned the methodology and results and contributed to the ultimate manuscript.

Reference


Krishnan, M. G, R. Effect of continuous training and interval training on selected physiological variables among Delhi university college men students.