



Effect of plyometric training on sand versus grass on vertical jump performance in collegiate male basketball players

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Abstract

The purpose of the study was to compare the effect of plyometric training in sand versus grass on vertical jump performance in collegiate male basketball players.

Methodology: Thirty healthy collegiate male basketball players were selected based on the selection criteria and were divided into two groups. Group A received plyometric training on sand and Group B received plyometric training on grass. Vertical jump performance of the players was assessed using vertical jump test. Student 't' test was used for statistical analysis to find out the vertical jump height in collegiate male basketball players.

Results: There was significant improvement in the vertical jump performance of basketball players in both the groups.

Keywords: basketball players, plyometric training, vertical jump performance

Introduction

Basketball is a multifaceted team sport that requires a well-developed anaerobic fitness to be played successfully. Many authors have suggested that explosive power in the form of vertical and horizontal jumps is an important characteristic for basketball players. It is a high intensity intermittent activity during which players are required to repeatedly perform striding, turning, sprinting and jumping that place considerable demands on the musculoskeletal system. A number of studies have reported that Plyometric Training alone is able to induce muscular performance benefits in lower limb muscles that also contribute to power development and represents a significant advantage of this type of training (Rimmer & Sleveret, 2000; Markovic, Jukic, Milanovic & Metikos, 2007; Asadi & Arazi, 2012) [1]. In addition, Impellizzeri *et al* (2008) reported similar improvements in jumping and sprinting ability following Plyometric Training.

Aim of the study

The aim of the study was to compare the effect of plyometric training in sand versus grass on vertical jump performance in collegiate male basketball players.

Hypothesis

There is no significant difference in comparison of plyometric training in sand versus grass on vertical jump performance in collegiate male basketball players.

Methodology

The study was conducted in K.G. Institution, Coimbatore where thirty healthy active collegiate male basketball players were assessed, examined and selected based on the selection criteria and divided into two groups. Group A (n=15) received plyometric training on sand and Group B (n=15) received plyometric training

on grass. Plyometric training protocol includes vertical jumping, bounding, broad jumping and drop jump. Each player underwent plyometric training for about four weeks with a frequency of three sessions per week for 40-50 minutes per session. Vertical jump test was used to assess the vertical jump performance in the individuals before and after four weeks of plyometric training.

Statistical analysis

The statistical analysis was done using student 't' test to find out the vertical jump height in collegiate male basketball players after four weeks of plyometric training.

Table 1: Shows the Post Test Mean Values of Group A and Group B

S. N	Vertical Jump Test	Mean	Mean Difference	Standard Deviation	't' value
1	Group A	48.60	8.93	1.955	9.359
2	Group B	57.53			

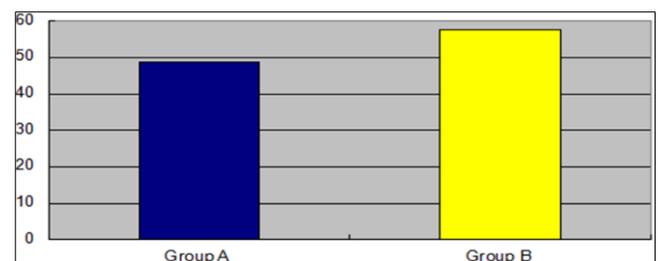


Fig 1

Results

The results were analyzed using student 't' test. Table-I shows the posttest mean values of both the groups and the 't' value of 9.359 shows a significant difference in comparison of plyometric

training in both groups but Group B who received plyometric training on grass showed better significant improvement in vertical jump performance than Group A who received plyometric training on sand.

Conclusion

The study concludes that collegiate male basketball players who underwent plyometric training protocol on grass showed better result in the improvement of vertical jump performance.

References

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