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Comparative Study of Explosive Strength among Long Jumpers and Sprinters

S.Bhavani Rajeshwari

LecturerinPhysicalEducation,RayalaseemaCollegeof
PhysicalEducation,Proddatur,AndhraPradesh

Introduction

The long jump is a track and field event in which athletes combine speed, strength and agility in an attempt to leap as far as possible from a takeoff point. Along with the triple jump, the two events that measure jumping for distance as a group are referred to as the "horizontal jumps". This event has a history in the ancient Olympic Games and has been a modern Olympic event for men since the first Olympics in 1896 and for women since 1948.

Sprinting is running over a short distance at the top-most speed of the body in a limited period of time. It is used in many sports that incorporate running, typically as a way of quickly reaching a target or goal, or avoiding or catching an opponent.

Research Objective

The objective of this study to determine the Explosive Strength in the legs of Long Jumpers and Sprinters.

Review of Literature

Matthews & Comfort (2008) state, it involves “the use of contrasting loads to elicit an acute enhancement in power output”

Prof.Rajesh Kumar and et.al (2009) has studied about the Speed, Agility and Power among Long Jumpers and Sprinters of Junior Colleges. It is concluded that Long Jumpers are good in speed and power and Sprinters are good agility.

Methodology

The sample for the present study consists of 30 Male Long Jumpers and 30 Male Sprinters of Junior Colleges. To assess the Explosive Strength Standing Broad Jump Test was conducted among Long Jumpers and Sprinters.

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Standing Broad Jump Test

- Purpose: to measure the explosive power of the legs
- Equipment required: tape measure to measure distance jumped, non-slip floor for takeoff, and soft landing area preferred. Commercial Long Jump Landing Mats are also available. The takeoff line should be clearly marked.
- Procedure: The athlete stands behind a line marked on the ground with feet slightly apart. A two foot take-off and landing is used, with swinging of the arms and bending of the knees to provide forward drive. The subject attempts to jump as far as possible, landing on both feet without falling backwards.
- Scoring: Record the longest distance jumped, the best of three attempts. 3 Attempts are allowed.

Analysis

Table showing the Mean values and Independent Samples Test of Standing Broad Jump between Sprinters and Long Jumpers of Junior Colleges

Variables	group	Mean ± SD	t	P value
Standing broad jump	Sprinters	2.30 ± 0.157	3.55	0.001
	Long Jumpers	2.26 ± 0.159		

***Significant at 0.05 level**

Results & Discussion

- In Table –I the Mean Values of Sprinters in Standing Broad Jump is 2.30 and Long Jumpers is 2.26. The Standard Deviation on Sprinters is 0.157 and Long Jumpers is 0.159 and t is 3.55 and P-Value is 0.001.
- It was found that Sprinters are having good explosive Strength in legs compare to Long Jumpers.
- Explosive Strength plays major role in producing the leg power among the Sprinters.

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- Increasing leg force development and coordinating it with trunk and arm action is probably the most effective way to increase jumping power.

Conclusions

- It was found that Sprinters are having good explosive Strength in legs compared to Long Jumpers. Core Training is essential for development of speed and power in Long Jumping and Sprinting.

Recommendations

- Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve their skills in Long Jumping and Sprinting.
- This Study is helpful to Coaches to prepare the sprinters to increase the explosive power ability among the legs and to increasing the straid speed.

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