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Relationship between standing height and spiking ability in Volleyball

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Abstract

The present study assessed that Relationship between 'standing height' (anthropometric measurement) and spiking ability in Volleyball and what the relationship between standing height and spiking ability. Ten University level Volleyball players were taken and measurements their height and subjects were evaluated through Bosco Ergo Jump test for measuring the jumping ability for spiking. The result indicates that standing height and all the jumping ability (Bosco Ergo Jump test battery) were positively correlated which means good height may produce better jumping ability.

Keywords: Volleyball, Anthropometry and Spiking

Introduction

Anthropometry simply means "measurement of people". The word is derived from the Greek 'anthros' meaning man, and 'metron' meaning measure. More formally it is the study of the size, shape and strength of the human body, including, mass, volumes, mobility, proportions, centers of gravity, and inertial properties of the whole body and body segments. Anthropometrics is the practice of anthropometry and involves the collection, analysis and application of anthropometric data.

It is the measurement of the size and proportions of the human body, It is a term which refers quantitative measurements of the human body. Numerous measurements of the body can be taken, ranging from bone density scans to height measurements. For spiking good anthropometry characters is require. For example standing height, arm length, leg length, etc.

Method

Ten university level volleyball players were selected conveniently, and the players were from Visva-Bharati university. The age range of the subject was 20-28 years. Their mean height was 175.5cm. and mean body weight was 63.7kg. The body mass index of these subject was 20.68 kg/m².

Criteria measure

In this study the researcher collected data on anthropometric variables and spiking ability of the volleyball players. The anthropometric variables were measure by body weight, standing height and hand raise standing height. The spiking ability was measured by Bosco ergo jump test (Bosco, Luhtanen, Komi, 1983) ^[1].

Anthropometric variables: It is the measurement of size and proposition of the human body. It is term which refers qualitative measurements of the human body. Limited time available for this project restricted the researcher to confined only one anthropometric variables; standing height.

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Fig 1: Standing height

Purpose: To measure the standing height of the subject
Equipment: Wall, tape
Procedure: The height of the subjects was measured with subject standing erect without shoes, adjacent to the wall. The subjects were instructed to keep the heels together, body touching the wall with heels, buttocks and back, head erect without lift and to take a and hold a full breath and standing erect while height measurement taken.
Scoring: Height was recorded correct to the nearest half of a centimeter.

Volley ball spiking ability

Volleyball spiking ability was measured through Bosco ergo jump test (Ciccarone *et al.*). Ergo jump system is a series of jump test for the assessment of muscular mechanics and power developed by Carmelo Bosco (Bosco *et al.* 1983) [1]. The Bosco protocol includes the following jumps, though what is called the Bosco Test may in fact be all, a combination and just one of these tests. All the tests involve a variation of the vertical jump test, though technique differences result in measuring different muscle characteristics. In the Bosco Test there are i) Squat Jump (SJ) ii) Squat Jump with extra weight (SJ+) iii) Counter Movement Jump (CMJ) iv) Abalakov Jump (ABK) v) Drop Jump (DJ) vi) Repetitive Jump (RJ). Many of these test can be measured using a standard timing mat or other vertical jump test equipment, though there have been systems developed specifically to measure and calculate results of the Bosco Jump Protocol.

Design

Test were conducted in the afternoon time of different days

with the availability of the volleyball players. The anthropometric data were collected three times and the man was recorded. Where as volleyball spiking ability conducted by Bosco test was also take and three times for each test. But the best performance was taken for the calculation. Then the two data’s namely anthropometric and spiking ability were statistically calculated to for established co-relation, or not.

Statically procedure

In this study the researcher used mean, S.D for descriptive statistics and calculated co – relation by the help of excel software in the computer.

Analysis and interpretation of data

Anthropometric variables: Standing height The mean standing height of 10 volleyball subject was 69.1inch and presented in this graph

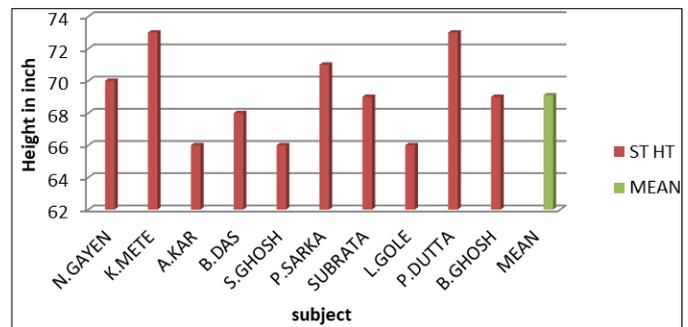


Fig 2: Show the graph Standing height

Discussion

The volleyball in a situational sports classified among activities laying on alternative an aerobic and aerobic process, with an important participation of the muscular mass. The anthropometric character are very much responsible in this over head sports activities. The standing height reaching height and body weight players a very important rate in volleyball particularly for jumping ability. In volleyball the basic nature of the game is to spike the over head ball into the opponent court and the opponent may resist or block the ball over the net. So, the jumping abilities is very vital in volleyball to win the game. Within the limitation of the present study the researcher tried to collect data about some related anthropometry variables and jumping abilities through Bosco test which essentially influenced the volley ball spiking ability. In the following table the co-relation between standing height, hand raise height body weight and volleyball spiking ability were presented for ready references.

Table 1: Standing height and volleyball spiking ability

An Anthropometric Parameters	Volleyball spiking ability						
	S.J	SJ+	CMJ	ABK	DJ(40cm)	DJ(80cm)	R.J
Standing height	0.68939*						
Standing height		0.63841*					
Standing height			0.63812*				
Standing height				0.74217*			
Standing height					0.73684*		
Standing height						0.6522*	
Standing height							0.66594*

*=significant

Standing height and all volleyball spiking ability, measures were positively co-related and some abilities are highly significant.

Conclusion

After reviewing the scientific data on anthropometric and

spiking ability. The researcher formulated his project topic. After collecting the data and compare it with other leading

researchers result. The following conclusion were drawn:

i) Standing height and all the jumping ability (Bosco ergo jump test battery) were positively correlated which means good height may produce better jumping ability. v) In this project researcher collected all the data's through manual measurement technique electronic sophisticated measuring instruments to measure the spiking ability be recommended for future research.

References

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