



International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2018; 5(1): 132-134
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www.kheljournal.com
Received: 21-11-2017
Accepted: 22-12-2017

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Relationship of agility with anthropometric variables of male pace and spin bowlers of Himachal Pradesh

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Abstract

In the study attempt to investigate the relationship of agility with anthropometric variables of male pace and spin bowlers. To solve the purpose of the study 100 male cricket players of Himachal Pradesh were taken as the sample. The anthropometric variables selected for the study were Height, Weight, Total arm length, Upper arm length, Forearm length, Hand length, Hand breadth, Upper arm circumference, Forearm circumference, shoulder length, Total leg length, Upper leg length, Lower leg length, Foot length, Thigh circumference, Calf circumference, hip length. The agility was measured by using shuttle run test taken from AAHPERED youth fitness battery. Anthropometric measurement was used to assess anthropometric variables. The data was analysed by using SPSS. The statistical tools used for the study were mean, SD, Correlation of Co-efficient. The results have shown significant relationship between the above said variables.

Keywords: Anthropometric variables, pace bowlers, spin bowlers, upper arm length

Introduction

Games and sports had become an integral part of human beings; it rose to its greatest height in Greece, which is called "Golden Era" in the history of games and sports. Through the development of various motor fitness components such as agility, power, balance, flexibility, local muscle endurance, cardio vascular endurance, coordination of these entire components one is able to develop the various skills accurately & efficiently. These components can be achieved through scientific and systematically i.e. step wise step. General motor skills are developed from the childhood onwards when the children starts running, jumping, playing, walking etc. Motor ability refers to the level to which one has developed his innate capacity to learn motor skills. "Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively with his potential. Ability to function depends upon physical, mental, emotional & social components of fitness, all of which are related to each other & mutually interdependent." Exercise Scientists have identified 9 elements that comprise the definition of strength, power, agility, balance, endurance, flexibility, co-ordination. But in this study explosive strength, arm strength & agility should be studied. Larson defined motor ability as the ability of the individual in the elements which underline motor performance, such as muscular strength, muscular power, muscular endurance, co-ordination ability & balance etc. The level of motor abilities is of prime importance for the learning of various activities & perfections of different skills in various sports & physical activities. The sports men are not capable to giving their life's best performance at every age. Because the period of high performance is of shorter duration it last only for a few years before and after these years, biologically, a man is not in a state to give his best performance. Anthropometry is an emerging scientific technology and is fast becoming important with the passage of time. This is a discipline, individual tries to assess the physical structure of individual in terms of gross motor performance. Anthropometric techniques are used to assess body composition. Anthropometry is the series of systematized measuring techniques that express quantitatively the dimensions of the human body both in the living and in the cadaver. Anthropometry is often viewed as the traditional and perhaps basic tool of physical anthropology, but it has also been extensively used in 'Physical education' and other sport science and it is now-a-days

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finding increased use in the biomedical sciences as well. In another forms, anthropometry is a science that deals with the measurement of sportsman, which is in motor. This is the most specialized technique to measure the body of the athletes and players.

Body composition makes unimportant contribution of the individuals level of physical fitness, performance etc. it has been found that the athletes who were bean or less or less fatty but heavy because of well developed musculature were superior in performance in certain competitive sports activities. Body composition is the study of three components in the body i.e. bone mass, muscle mass and fat mass. Body composition makes an important contribution to an individual's level of physical fitness, performance, etc. on the other land, the athletes who had substantial amount of adipose tissue have permanently increased energy demands owing to the weight of fat. Therefore, fat plays an important role in order to enhance or hinder the performance.

In the 1950s and mid 1960 anthropology tended increasingly to model itself after the nature sciences. Some such as Llyd Fallers and Clifford Geertz focused on processes on modernization by which newly independent states could develop. Others, such as Julian steward and Leslie White focused von how societies evolve and fit their ecological niche –an approach popularized by Marvin Harris. Economic Anthropology as influenced by karl Polanyi and practiced by Marshall Sahlins and Greg Dalton focused on how traditional

economics ignored culture and social factors. In England, British social Anthropology's paradigm began to fragment as Max Gluckman and peter Worsley experimented with Marxism and authors such as Rodney Needham and Edmund Leach incorporated Levi-Strauss structuralism into their work.

Methodology

To complete the purpose of the study hundred cricket bowlers were randomly selected from Himachal Pradesh Cricket Academy were taken as sample in which fifty pace bowlers and fifty spin bowlers were selected. All the players were anthropometrically measured and Physical fitness was tested. The anthropometric variables selected for the study were Height, Weight, Total arm length, Upper arm length, Forearm length, Hand length, Hand breadth, Upper arm circumference, Forearm circumference, shoulder length, Total leg length, Upper leg length, Lower leg length, Foot length, Thigh circumference, Calf circumference, hip length. The agility was measured by using shuttle run test taken from Aahpered youth fitness battery. Anthropometric measurement was used to assess anthropometric variables. The data was analyses by using SPSS. The statistical tools used for the study were Mean, SD, and Correlation of Co-efficient.

Results and findings

Within the limitations and delimitations of the present study following results are drawn

Table 1: Descriptive Statistics of Anthropometric Variables and shuttle run of the male Pace bowlers

Variables	N	Mean	Std. Deviation
Height	50	161.50	16.21
Weight	50	51.78	6.92
Total arm length	50	73.94	6.13
Upper arm length	50	30.65	2.59
Fore arm length	50	25.83	2.91
Hand length	50	17.64	3.02
Forearm Circumference	50	10.26	2.42
Hand Breadth	50	25.04	3.65
Shoulder length	50	23.14	3.29
Physical Fitness	50	13.59	1.70
Upper Arm Circumference	50	11.51	1.09

Table 1 depicts the mean value of Height (161.50), Weight (51.78), Total arm length (73.94), Upper arm length (30.65), Forearm length (25.83), Hand length (17.64), Forearm

Circumference (10.26), Hand Breadth (25.04), Shoulder length (23.14), Physical Fitness (13.59), Upper Arm Circumference (11.51) of the male pace bowlers.

Table 2: Correlation Table of Anthropometric Variables and shuttle run of the male Pace bowlers

Variables	'r' value	Variables	'r' value
Height	317*	Hand length	-.042
Weight	642**	Forearm Circumference	.547**
Total arm length	872**	Hand Breadth	.551**
Upper arm length	453**	Shoulder length	.263
Fore arm length	.110	Upper Arm Circumference	-.001

Table 2 Depicts the r value of Height (317*), Weight (642**), Total arm length (872**), Upper arm length (453**), Forearm length (.110), Hand length (-.042), Forearm Circumference (.547**), Hand Breadth (.551**), Shoulder length (.263), Upper Arm Circumference (-.001) of the male pace bowlers. It is therefore sad that Agility was found to have positive

relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, and negative relationship has been seen between Hand length and upper arm circumference of male pace bowlers of Himachal Pradesh.

Table 3: Descriptive Statistics of Anthropometric Variables and shuttle run of the male Spin bowlers

Variables	N	Mean	Std. Deviation
Height	50	157.77	16.37
Weight	50	49.82	6.28
Total arm length	50	68.35	4.03
Upper arm length	50	28.63	2.49
Fore arm length	50	23.39	1.84
Hand length	50	16.34	1.70
Forearm Circumference	50	8.20	0.77
Hand Breadth	50	24.17	3.94
Shoulder length	50	21.32	1.91
Physical Fitness	50	13.12	1.97
Upper Arm Circumference	50	11.56	.71

Table 3 depicts the mean value of Height (157.77), Weight (49.82), Total arm length (68.35), Upper arm length (28.63), Forearm length (23.39), Hand length (16.34), Forearm

Circumference (8.20), Hand Breadth (24.17), Shoulder length (21.32), Physical Fitness (13.12), Upper Arm Circumference (11.56) of the male Spin bowlers.

Table 4: Correlation Table of Anthropometric Variables and shuttle run of the male Spin bowlers

Variables	'r' value	Variables	'r' value
Height	.609**	Hand length	.188
Weight	.213	Forearm Circumference	.297*
Total arm length	.760**	Hand Breadth	.731**
Upper arm length	.133	Shoulder length	.266
Fore arm length	.127	Upper Arm Circumference	-.047

Table No. 4 Depicts the r value of Height (.609**), Weight (.213), Total arm length (.760**), Upper arm length (.113), Forearm length (.127), Hand length (.188), Forearm Circumference (.297*), Hand Breadth (.731**), Shoulder length (.266), Upper Arm Circumference (-.047) of the male pace bowlers. It is therefore sad that agility was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Hand length, Forearm Circumference, Hand Breadth, Shoulder length, and negative relationship has been seen between upper arm circumference of male spins bowlers of Himachal Pradesh.

Conclusion

The study concluded that the:-

- The Agility was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, and negative relationship has been seen between Hand length and upper arm circumference of male pace bowlers of Himachal Pradesh.
- The Agility was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Hand length, Forearm Circumference, Hand Breadth, Shoulder length, and negative relationship has been seen between upper arm circumference of male spins bowlers of Himachal Pradesh.

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