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Relationship of cardiovascular efficiency 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 cardiovascular efficiency 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 cardiovascular efficiency was measured by using 600yard run/walk 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: Cardiovascular, Himachal Pradesh, anthropometric

1. Introduction

Anthropology is the scientific study of mankind. Man, the most intelligent species of the animal kingdom, has used his intelligence and skill in making his an institution has been a source of play, work, celebration, exercise and fitness to encompassing larger goals in representing the state or nation in national and international games, bringing pride to the nation besides, oneself and family. Anthropologists in their endeavor in studying the physical structure, size and shape to the understanding of physiological functioning in the physical and socio-cultural environment of mankind have ventured to find the effect it has on the overall performance of a sportsman. 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 access 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 finding increased use in the biomedical sciences as well. Malaria 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. Physical fitness is the ability of the body to adopt and to recover from strenuous exercise. It is alertness without under fatigue, sufficient energy for unforeseen emergencies. Ralph Hickok often people think only of fitness when the term "fitness" is used, but the above definition implies that one should view physical fitness as only a part of total fitness. A person is considered to be fit for particular task or activity when he can accomplish. It was a reasonable degree of efficiency without undue fatigue and recovery from the effects of exertion.

Physical fitness is a measure of the ability of a body to function under the stress of physical effort. This ability reflects the condition of the body organs and system. Everyone has some degree of physical fitness, but some people have so little that they become winded in climbing a flight of stairs.

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Others have so much that they can run a mile in a few minutes some have so little that they fell exhausted by noon on a working day, while others have so much that they can work hard for sixteen hours every day, or after an eight hours work day have enough energy left to enjoy their leisure in vigorous activities.

Barrow stated that many earlier civilizations such as Spartan, Greeks, early Athenian Greeks and early Romani laid great stress upon physical fitness of their countrymen. Physical training was an important objective of their educational programs me. The countries which developed strong nationalistic system of education in 19th and 20th centuries, such as the German Nazis give great important to the physical fitness of their countrymen, Americans after world war-I and II had introduced an organized physical training programmed for the physical fitness of the youth and this continues even today.

Physical fitness among male students in general exists in varying degree. Practically anyone can improve his fitness status physical activity is essential to achieve physical fitness. There are no short cuts. The sprinter who fields to run after season ends with back slide in respect of his total fitness level. Physical fitness is to the human body what fine tuning in to a fanzine. It enables us to perform up to our potential. Therefore, fitness is that which characterizes the degree to which the person is able to function. Fitness is an individual matter whether it is motor fitness or physical fitness.

2. 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 cardiovascular efficiency was measured by using 600yard run/walk 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.

3. Results and findings

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

Table 1: Descriptive Statistics of Anthropometric Variables and 600yard run/walk 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	1.07
Upper Arm Circumference	50	181.08	28.20

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 (181.08) of the male pace bowlers.

Table 2: Correlation Table of Anthropometric Variables and 600yard run/walk dash 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	.232

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 (.232) of the male pace bowlers. It is therefore sad that cardiovascular efficiency was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, Upper Arm Circumference and negative relationship with hand length of male pace bowlers of Himachal Pradesh.

Table 3: Descriptive Statistics of Anthropometric Variables and 600yard run/walk dash 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	190.94	26.72

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 (190.94) of the male Spin bowlers.

Table 4: Correlation Table of Anthropometric Variables and 600 yard run/walk 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	-.049

Table No. 4 Depicts the r value of Height (.609**), Weight (.213), Total arm length (.760**), Upper arm length (.133), Forearm length (.127), Hand length (.188), Forearm

Circumference (.297*), Hand Breadth (.731**), Shoulder length (.266), Upper Arm Circumference (-.049) of the male pace bowlers. It is therefore sad that cardiovascular efficiency was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, hand length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, Upper Arm Circumference and negative relationship with Upper Arm Circumference of male spin bowlers of Himachal Pradesh.

4. Conclusion

The study concluded that the

- The cardiovascular efficiency was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, Upper Arm Circumference and negative relationship with hand length of male pace bowlers of Himachal Pradesh.
- The cardiovascular efficiency was found to have positive relationship with Height, Weight, Total arm length, Upper arm length, hand length, Forearm length, Forearm Circumference, Hand Breadth, Shoulder length, Upper Arm Circumference and negative relationship with Upper Arm Circumference of male spin bowlers of Himachal Pradesh.

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