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Relationship Study of Anthropometric Measurements to Playing Ability of Tennis Players

Mr. Himanshu Saxena* Mr. Prashant Tiwari**
Ph.D Scholar, Sri Satya Sai University of Technology & Medical Sciences, Sehore (M.P.)
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Abstract

The purpose of this study was to find out relationship of selected anthropometric variables to the tennis playing ability.

Twenty male (20) players from Mahatma Jyotiba Phule Soprts Stadium , Etawah (U.P.) were randomly selected as subjects for the study. The age of the subjects were 17 to 21 years. The research scholar made sincere efforts to review the related literature and listed down the important anthropometric characteristics, which are desirable for better performance in tennis. The experts in the field of tennis were consulted and detailed discussions were held pertaining to the performance requisites of tennis. So on the basis of review of literature expert`s opinion and scholar's own understanding of the game the following variables were selected for the purpose of the study: Standing Height, Leg Length and Body Weight. Standing height was measured by stadiometer and recorded to nearest centimeters. Leg length was measured through measuring tape and recorded in centimeters. Body weight was measured by weighing machine and recorded in kilogram. The playing ability of subject was assessed by a panel of three judges during game situation. Each judge was asked to give mark out of 10. The final score was average of three. To find out the relationship between dependent variable (tennis performance) and independent variables (anthropometric measurements) was established by computing Karl Pearson's Product Moment method of correlation (r). For testing the hypothesis the level of significance was set at 0.05 level of significance. The statistical findings of the present study revealed that the selected anthropometric variables are not significantly related to tennis playing ability.

Keywords: Standing Height, Leg Length and Body Weight.

INTRODUCTION

Sports and games are no longer just sports games. They are big business all over the world. The boom in Prize Money and the practice of internationally renowned sportsmen signing on the product has made sports, big business. Sports lover shall over the world are happy that reputed sportsmen are no longer obliged to follow a regime of high thinking and low living. Today, sports have become a part and parcel of our culture. It is being influenced and does influence all our social institutions including education, economics, art, politics, law, mass communication and even international diplomacy

Today, anthropometry plays an important role in industrial design, clothing design, ergonomics and architecture where statistical data about the distribution of body dimensions in the population are used to optimize products. Changes in life styles, nutrition and ethnic composition of populations lead to changes in the distribution of body dimensions (e.g. the obesity epidemic), and require regular updating of anthropometric data collections.

Tests of anthropometry include measurements of body size, structure, and composition. It is important to be aware of the effects of changes to these factors, and to be able to measure them. For most sports body size is an important factor in success, whether it is advantageous to

be short, tall, heavy or light. The body composition, such as the amount of body fat and muscle mass, can also significantly affect sporting performance. A measure which utilizes both body composition and body size measurements is somato type. We study the relationship between the size and shape of the human body and sports performance. We use internationally standardized techniques to measure athletes and use calculations of body composition, dimensions, proportion and ratio to help improve sport performance.

Methodology

Twenty male (20) tennis players from. Mahatma Jyotiba Phule Soprts Stadium,Etawah (U.P.) were randomly selected as subjects for the study. The age of the subjects were 17 to 21 years. The research scholar made sincere efforts to review the related literature and listed down the important anthropometric, which are desirable for better performance in tennis. The experts in the field of tennis were consulted and detailed discussions were held pertaining to the performance requisites of tennis. So on the basis of review of literature expert`s opinion and scholar's own understanding of the game the following variables were selected for the purpose of the study: Standing Height, Leg Length and Body Weight. Standing height was measured by stadiometer and recorded to nearest centimeters. Leg length was measured through measuring tape and recorded in centimeters. Body weight was measured by weighing machine and recorded in characteristics kilogram. Tennis playing ability was measured by The playing ability of subject was assessed by a panel of three judges during game situation. Each judge was asked to give mark out of 10. The final score was average of three. To find out the relationship between dependent variable (tennis performance) and independent variables (anthropometric measurements) was established by computing Karl Pearson's Product Moment method of correlation (r). For testing the hypothesis the level of significance was set at 0.05 level of significance.

Finding

In order to determine the relationship of anthropometric measurements to tennis playing ability among tennis players, Karl Pearson's Product Movement correlation method was used and the variables such as standing height, leg length and body weight were considered as independent variables, where as the tennis playing ability was considered as dependent variables.

Table No. 1: Descriptive Analysis of Selected Anthropometric Measurements of Tennis Players

S. No.	Variables	Mean	Std. Deviation	Minimum	Maximum	Range
1.	**Standing Height**	170.35	4.23	162	178	15
2.	**Leg Length**	88.05	1.80	83	91	6
3.	**Body Weight**	62.75	4.52	57	71	15

Table no. 1 Indicates descriptive analysis of anthropometric variables of tennis players. In case of standing height mean, standard deviation, minimum, maximum and range are 170.35, 4.23, 162, 178 and 15 respectively. Descriptive analysis of leg length of tennis players where mean, standard deviation, minimum, maximum and range are 88.05, 1.80, 83, 91 and 6 respectively. Descriptive analysis of body weight of tennis players where mean, standard deviation, minimum, maximum and range are 62.75, 4.55, 57, 71 and 15 respectively.

Table No. 2: Relationship of Anthropometric Measurements to Playing Ability of Tennis Players

S. No.	Variables	Correlation Coefficient (r)
1.	**Standing Height and Playing Ability**	-0.201
2.	**Leg Length and Playing Ability**	-0.270
3.	**Body Weight and Playing Ability**	0.191

*Significant at 0.05 level of significance $r_{0.05\,(20)} = 0.444$

Table no. 2 reveals there is no significant relationship between standing height and playing ability (r=-0.201), leg length and playing ability (r=-0.270) and body weight and playing ability (r=0.191) as the critical value (0.444) is higher than calculated value in all the cases. Graphical representation of correlation coefficient was given in figure no.1.

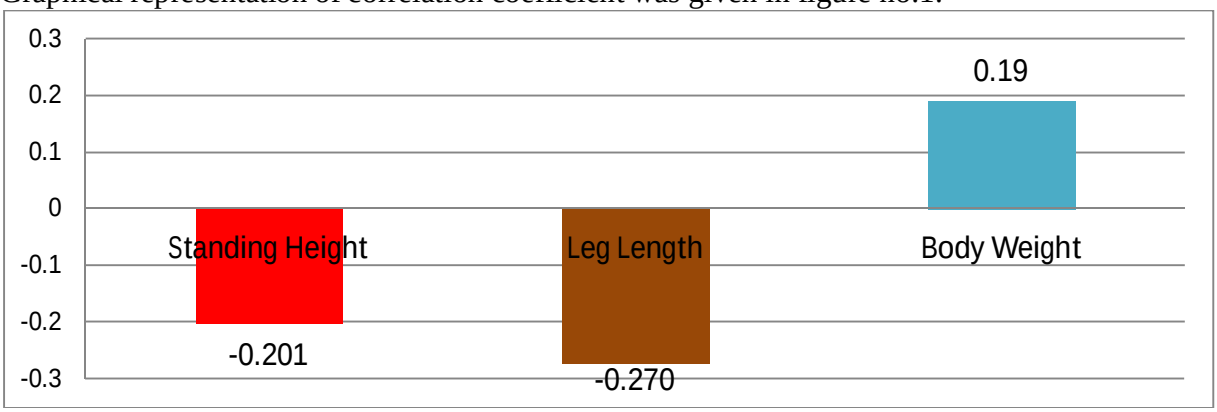

Figure no. 1: Correlation Coefficient of Anthropometric Measurements to Playing Ability of Tennis Players

Discussions of Findings

The statistical findings of the present study revealed that the selected anthropometric variables are not significantly related to tennis playing ability there might be so many reason for it but as per my understanding and after discussion with experts and supervisor we come to the conclusion that its skill which is more important than any other thing.

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