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## Relationship of selected anthropometric variables on skill performance of Shotput event

**Nagaveni TH and N Chandrappa**

### Abstract

The purpose of the research was to investigate the Relationship of Selected Anthropometric Variables on Skill Performance of Athletes of Shotput event. Anthropometric variables are Standing Height and Weight. This study was conducted on 25 boy athletes of Haveri District, Karnataka State. The age group of athletes' range between 12 to 16 years. They have participated in interschool level competition.

**Keywords:** Height, weight, shot put and skill performance

### Introduction

Anthropometric parameters are rightly being considered important in many fields like Industrial design, clothing design, ergonomics, architecture, and even sports. Anthropometry is the measurement of body parameters to indicate nutritive state. Anthropometric variables are highly related to physical performance, being used for the control and monitoring of athletes in different sports. However, whether anthropometric features of male and female athletes result in a different outcome on fitness must be determined.

Anthropometry is the science of obtaining methodical measurements of the physical properties of human body, primarily dimensional descriptors of the body size and shape. It has special importance because of the emergence of complex work systems, where knowledge of the physical measurement of man with accurateness is important.

The ancient Greeks threw stones as a sport, but a version of the modern form of the discipline can be drawn to the highland games in Scotland during the 19<sup>th</sup> century where competitors threw a rounded block, stone, or iron weight form behind a line. The first competitions resembling the modern shot put had occurred in the Middle Ages in which soldiers used cannonballs at their enemies.

Shotput is a sport where an athlete needs to exercise his throwing power with a weight object. It is an Athletics event. It is played with heavy spherical object popularly known as shot. The goal is to throw the shot-put as distant as possible through a pushing action. It requires massive muscular strength and a good balance upon oneself.

**Instruments:** The instruments used for collection of data were stadiometer, weighing machine, shotput and measuring tape.

**Variables:** Height measurement was taken by stadiometer, Weight using weighing machine, shotput distance measured by measuring tape.

### Aim of the study

The purpose of the study was to find out the Relationship of Selected Anthropometric Variables on Skill Performance of Shotput event.

### Significance of the Study

1. This research helps us to understand the Relationship of selected Anthropometric measurements such as height and weight on Skill performance of athletes of shotput event.
2. The findings of the study may help trainers, coaches, and physical education teachers to

identify potential players for shot-put.

- It also helps Athletes to understand the impact of body size and composition, height and weight in particular will have on their performance.

**Hypothesis**

There would be significant relationship between anthropometric variables like height and weight on skill performance of athletes of shotput event.

**Methodology**

The present study was carried out on twenty-five boy athletes from Haveri District, Karnataka State. The age of the subject's range between 12- 16 years. Consecutive sampling was used for the selection of the subject where every subject has participated in interschool level sports competition. To find out the relationship between selected anthropometric variables with the shotput skill performance, Pearson product moment correlation test was used. For the purpose of analysis, the level significance was set at 0.05.

**Criterion measures**

The criterion measures of selected anthropometric measurements variables adopted in this study are as below.

**Anthropometric**

- Height:** To measure height stadiometer was used, and measurement was taken in centimetres.
- Weight:** To measure weight in weighing machine and measurement was taken in kilograms.

**Skill performance of Shot Put**

- Best of two trails was recorded for athletes in shot-put.
- Distance was recorded in meters.

**Analysis and Interpretation of Data**

In order to find the relationship of selected anthropometric variables namely standing height and weight with the performance, Pearson's product correlation was used.

**Table 1:** Descriptive statistics on Shot-put skill performance and Anthropometric variables

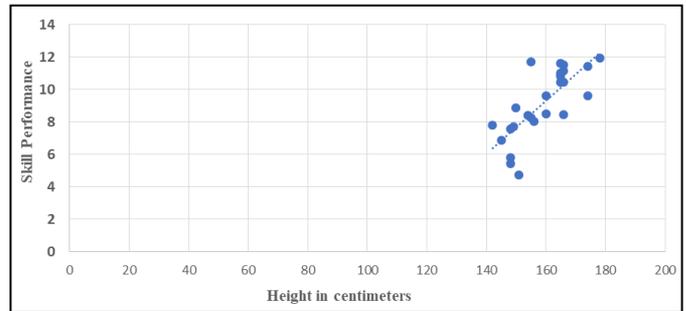
Variables	Mean	Std. Deviation	N
Shot put Strength skill performance (In meters)	9.12	2.10	25
Height (in meters)	158.84	9.81	25
Weight (in Kilograms)	47.88	11.47	25

The results on shotput skill performance and anthropometric variables of inter-school level sports persons of 12 to 16 years of age are provided in Table 1. The shotput skill performance of selected students was 9.12±2.10 metres; Height is 158.84±9.81 centimetres; Weight is 47.88±11.47 kilograms.

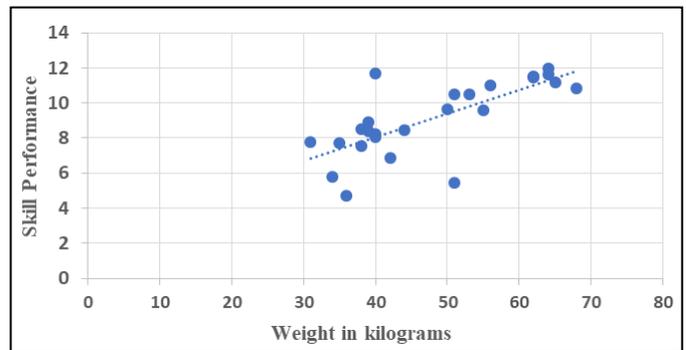
**Table 2:** Summary on correlation between Shot-put skill performance and Anthropometric variables

Sl. No	Variables	Co-efficient of correlation	Sig. (2-tailed)
1.	Height	.762	.000
2	Weight	.731	.000

It is evident from Table 2. That there was positive high correlation between standing height and skill performance of shotput, and also positive high correlation between weight and skill performance of shotput.



**Fig 1:** Height and Skill performance of Shot-put



**Fig 2:** Weight and Skill performance of Shot-put

**Interpretation**

For all 25 Shotput throwers, anthropometric measurements were taken and mean and standard deviation was calculated (displayed above) according to which Skill performance of Shotput mean is 9.12 and SD is 2.10, Height mean is 158.84 and SD is 9.81, Weight mean is 47.88 and SD is 11.47. However, the above table indicates that skill performance of shotput throwers has significant positive relationship on selected Anthropometric variables.

**Discussion**

The study was hypothesized with the purpose to find out the relationship between selected anthropometric variable with the skill performance of shotput. The knowledge about selected anthropometric variables is very important for training and performance enhancement in shotput. Based on the findings of the study it was revealed that the anthropometric variables height and weight were significantly correlated with skill performance of shotput. Height and Weight are more effective for throwing a shotput. The heavier weight of an individual helps to keep the implement stretched back, making it easier to land at the front of the circle with the upper body closed off.

**Conclusion**

Anthropometric parameters are important in evaluating the general health of public and athletes. After analysing the data collected to investigate the relationship of height and weight with the performance score of boy athletes in shot-put event it can be concluded that Anthropometric parameters height and weight has significant positive high correlation with skill performance of Shot-put.

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