A COMPARATIVE STUDY ON ANTHROPOMETRICALVARIABLEOF SPRINTER AND LONG JUMPER ATHLETES

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ABSTRACT

The present study attempts to investigate the physical variations between sprinter and long jumper athletes. A sample comprised of 60 sprinter and long jumper athletes (boys) from different senior secondary school competition of J&K board by using simple random sampling technique. In which 30 sprinter and 30 long jumper athletes. The age of players ranging from 15 to19 years. The steel measuring tape were used for measuring the upper leg length and lower leg length. To compare the upper leg length and lower leg length sprinter and long jumper athletes t-test was applied. The result of the study showed that there was a no significant difference was found between sprinter and long jumper athletes of senior secondary school in their upper leg length. Significant was observed between sprinter and long jumper athletes (boys) of senior secondary school in their lower leg length.

Keywords: *UPPER LEG LENGTH, LOWER LEG LENGTH, SPRINTER, AND LONG JUMPER ATHLETES.*

Introduction

Sports are very essential for every human life which keeps them fit and fine and physical strength. It has great importance in each stage of life. It also improves the personality of people. A sport has always given priority from old ages and nowadays it has become more fascinating. It represents a part of culture, being understood, from its beginning as an ideal means to maintain

health, to form a body and even a character, its main feature being the competition, which stimulates the desire to be known and implicitly, the obtaining of performances.

Anthropometry refers to the measurement of the human individual. An early tool of physical anthropology, it has been used for identification, for the purposes of understanding human physical variation, in pale anthropology and in various attempts to correlate physical traits. Anthropometry involves the systematic measurement of the physical properties of the human body, primarily dimensional descriptors of body size and shape. Since commonly used methods and approaches in analysing living standards were not helpful enough, the anthropometric history became very useful for historians in answering questions that interested them.

A standard anthropometrical analysis during a physical fitness assessment would involve determining the height, mass, somatotype and body fat percentage of an individual or athlete (Maud and Foster, 1995).

Objectives of the study

1. To compare the difference between upper leg length of sprinter and long jumper athletes (boys) J&K board senior secondary school.
2. To compare the difference between lower leg lengthof sprinter and long jumper athletes (boys) J&K board senior secondary school.

Hypotheses of the study

1. There is no significant difference between sprinter and long jumper athletes (boys) of J&K board senior secondary school regarding their upper leg length.
2. There is no significant difference between sprinter and long jumper athletes (girls) of J&K board senior secondary school regarding their lower leg length.

Methodology

For the purpose of this study two sample groups were formed. 1st group comprises of 30 sprinter and 2rd group comprises of 30 jumper athletes (boys) were selected from the different senior secondary school competition of J&K with the age group of 15 to19 years.

TOOLS

Steel measuring tape

(1) Upper Leg length:

A measure of the distance from the inguinal crease to proximal border of patella, when the subject is made to sit on a box with one knee bent at 90 degree angle with his back up straight.

(2) Lower Leg Length:

An apparent lower leg length can be measured from the top of the patella (kneecap) to the underside of the foot. A "direct" measurement using a tape measure can be utilized to measure the lower leg length.

Design of the Study

Design of the study was random group design, as the sprinter and long jumper athletes were randomly selected from these who were talking part in the senior secondary school and comparison of upper leg length and lower leg length between sprinter and long jumper athletes (boys) was done.

T-test was used to test whether there is any significant difference among the chosen upper leg length and lower leg length variable of sprinter and long jumper athletes (boys) of senior secondary schoolboard competition J&K board.

Analysis of data

A statistical analysis was carried out and the result obtained is given below.

Objective 1. To compare the difference between upper leg length of sprinter and long jumper athletes (boys) of J&K board senior secondary school.

Null Hypothesis 1. There is no significant difference in the upper leg length of sprinter and long jumper athletes (boys) of J&K board senior secondary school.

Table: 1.1 Comparison of upper leg lengthbetween sprinter and long jumper athlete of J&K board senior secondary school.

Variable	Group	N	Mean	Std. Deviation	t-Value	df	Sig.
Upper Leg Length (Boys)	Long jumper Boys	30	50.00	3.571	-937	58	.353
	Sprinter Boys	30	50.90	3.862			

Significant at 0.05 level

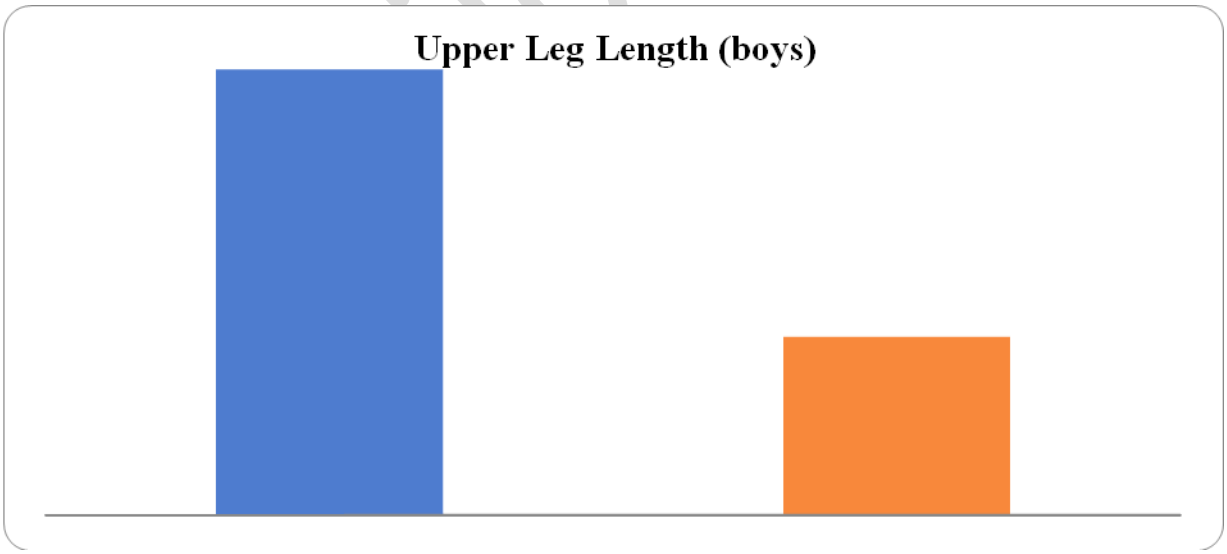

Figure 1.1: Comparison of Means & SD of upper leg lengthsprinter and long jumper athletes (boys) of J&K board senior secondary school

Interpretation

The above table 1.1 indicates that the independent sample t-test is associated with statistically not significant difference t (58) = 1.05, p = .76. The result shows that long jumpers (M = 50.00, SD =3.571) and sprinters athletes boys (M = 50.90, SD = 3.862) of J&K senior secondary school are found to have similar upper leg length. So, the null hypothesis (1), *"There is no significant difference in the upper leg length of sprinters and long jumper's (boys) athletes of J&K board senior secondary school regarding their upper leg length"* is **accepted**.

Objective 2. To compare the difference between lower leg length of sprinter and long jumper athletes (girls) J&K board senior secondary school.

Null Hypothesis 2. There is no significant difference between sprinter and long jumper athletes (boys) of J&K board senior secondary school regarding their lower leg length.

Table: 1.2 Comparison of lower leg lengthbetween sprinter and long jumper athletes (boys) ofJ&K board senior secondary school.

Variable	Group	N	Mean	Std. Deviation	t-Value	df	Sig.
Lower Leg Length Boys	Long jumper Boys	30	41.30	2.365	-2.367	58	.021
	Sprinter Boys	30	43.13	3.520			

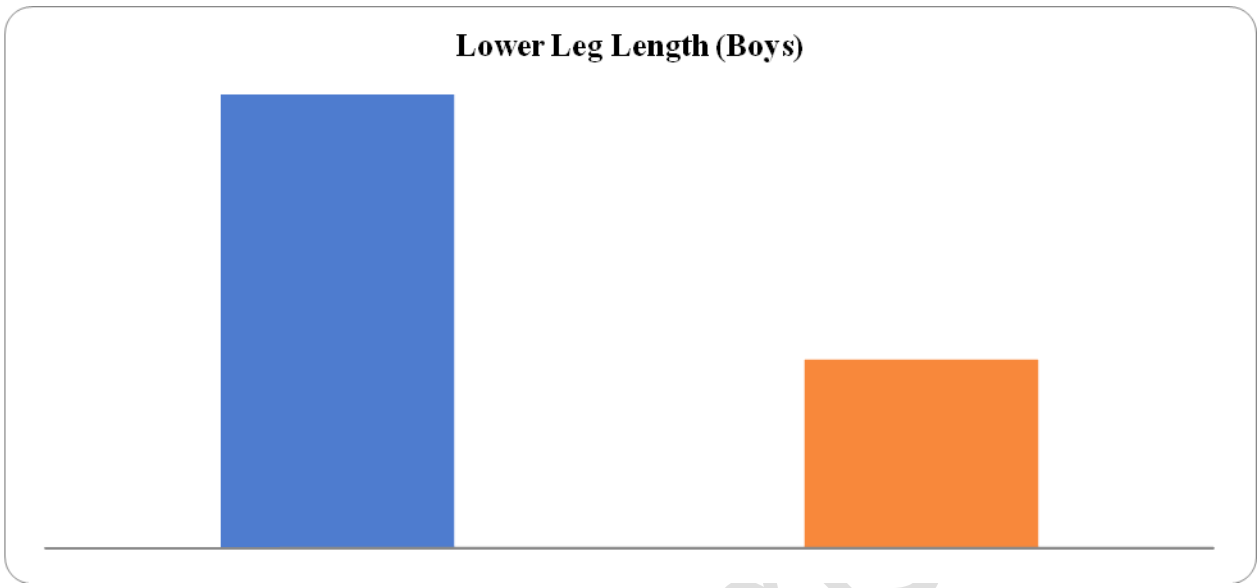

Figure 1.2: Comparison of Means & SD of lower leg lengthbetween sprinter and long jumper athletes (boys) of J&K board senior secondary school

Interpretation

The above table 1.2 indicates that the independent sample t-test is associated with a statistically significant difference t (58) = -2.367, p = .021, i.e. statistically significant at the level of 0.05 significance. The result shows that long jumpers (M =41.30, SD =2.365) and sprinters athletes boys (M = 43.133, SD = 3.520) of J&K senior secondary school are found to have different lower leg length. So, the null hypothesis (1), *"There is significant difference in the sprinter and long jumper athletes (boys) of J&K board senior secondary school regarding their lower leg length"* is **rejected**.

Discussion

As in the present finding, significant difference was found between sprinter and long jumper athletes (boys) of senior secondary school in their lower leg length.The present result is supported by the findings of Joshi, D. and Kumar, A. (2015) also found a contradictory result, who showed that who studied that a significant difference was found this study 55 female national level long jumpers were selected as a subject. Age group of athletes was 17 - 28 years. The test item selected for this study was anthropometric variables i.e. Height, Fore Leg Length, Thigh Length, Leg Length, Trunk Length, Sitting Height, Shoulder Width, Hip Width, Weight. Results of the study shows that significant relationship was found out between Height, Leg Length, Shoulder Width and Hip Width among anthropometric variables with long jump performance but significant difference was not found out in fore leg length, Thigh length, trunk length, sitting height and weight in anthropometric variables with long jump performance.

Findings of the study

1. A no significant difference was observed between senior secondary school sprinter and long jumper athletes (boys) regarding their upper leg length (measure). The mean value of senior secondary school jumper athletes was lesser than their counterparts, i.e. sprinter athletes of senior secondary school.
2. A significant difference was observed between senior secondary school sprinter and long jumper athletes (boys) regarding their lower leg length (measure). The mean value of

senior secondary school jumper athletes was lesser than their counterparts, i.e., sprinter athletes of senior secondary school.

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