



ISSN: 2456-0057
IJPNPE 2018; 3(2): 40-42
© 2018 IJPNPE
www.journalofsports.com
Received: 24-05-2018
Accepted: 25-06-2018

Pawiter Singh
Director of Physical Education,
Govt. SSS Gulahar Patiala
Punjab, India

Comparative study of kinanthropometric characteristics between jumpers and throwers

Pawiter Singh

Abstract

The purpose of the study was to find out the significant comparison of kinanthropometric characteristics between jumpers and throwers u-19 year age group. For present study, total 40 state level male jumpers and throwers (jumpers-20 and throwers-20) with their age ranging under 19 years was selected randomly from Punjab state. T test was applied. To analysis the data statistically found the significant difference between Jumpers and Throwers as mean, standard deviation, t test. The outcome shows that throwers have taller heavier, greater diameters and more circumferences.

Keywords: Taller, heavier, diameters, circumference

Introduction

The variation in human physique is so enormous that it is extremely difficult to classify them with specific criteria. Sometimes both constitutions are considered as the synonymous of physique. The jumpers, hurdlers and pole-vaulter are relatively slim in skeletal build and are taller with longer legs and shorter trunks. The typical throwers (including shot putters) are those with greater arm span/height and greater upper arm length/forearm length. The jumper' hurdlers and pole-vaulters have relatively greater leg length/trunk length and relatively large forelegs length/thigh length. Throwers at different level of competition are heavier and taller with long muscular arm and wider shoulders. In shot put, discus and hammer throwing, greater body weight is beneficial because during throwing the object forwards and upward an equal and opposite reactive force is exerted on thrower, pushing him or her backwards and downward. The effect of Newton's third law is less on a thrower with heavy body weight. The greater height is further advantage to them by making the flight of the implement longer before landing. For jumpers lighter body with less of fat in case of these athletes is advantageous because of the necessity of tilting the body and propelling it forward and upward for better performance creating proportionately greater strength to body weight. The longer lower extremities with smaller and slender trunk in them seem to be an asset for reduction of relative body weight.

Purpose of study

Purpose of the study was to find out the comparison of kinanthropometric characteristics between jumpers and throwers

Method and Procedure

Sample size

The total number of sample size was 40 athletes' i.e. 20 Jumpers and 20 Throwers

Sampling area

The sample was selected from Punjab state who had participated at state level of competition under 19.

Sampling techniques

The investigator was firstly divided the athletes according to specific events jumpers and

Correspondence
Pawiter Singh
Director of Physical Education,
Govt. SSS Gulahar Patiala
Punjab, India

throwers and their age under 19 years. According to the methods of Tanner *et al.* (1969) than random sampling technique was used to select the samples.

Selection of subjects

The total number of sample size was 40 athletes' i.e. 20 jumpers and 20 throwers are under 19 year's age.

Tools

The following tools were used for collection of data

1. Anthropometric rod
2. Weight machine
3. Steel tape
4. Sliding caliper

Test items

The following standardized anthropometric measurements were used by Weiner and Lourie (1969) [10] method for data collection.

Standing Height	(cms)
Weight	(kg)
Humerus Biepicondylar	(cms)
Femur Biepicondylar	(cms)
Upper arm Circumference	(cms)
Calf Circumference	(cms)

Statistical techniques

T test was applied and the level of significance at 0.05 percent.

Results

Table 1: Show the comparison of height (cms) between jumpers and throwers.

Event	N	Mean	S.D.	T value
Jumpers	20	174.9440	0.8630	7.0718
Throwers	20	177.0075	0.9788	

$t'_{0.05(38)} = 2.021$

Table show the comparison of height (cm) between jumper and thrower of under 19 year age group. The mean value of jumper and thrower were found to be (174.9440 and 177.50) cms. In statistically result were found to be extremely significant in under 19 year age group ($t=7.0718$) respectively. The result show an under 19 year age group thrower were taller (cm) than jumpers.

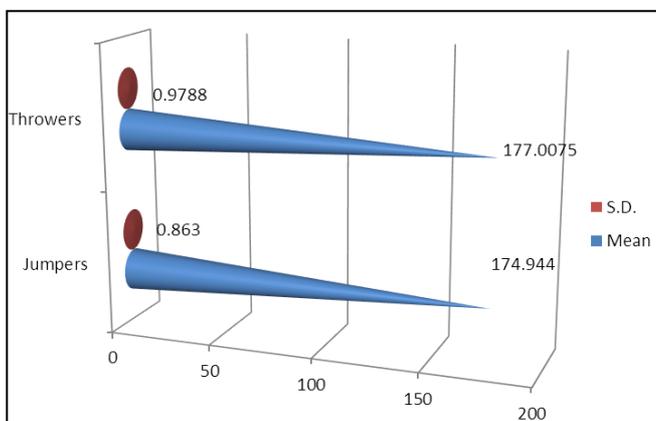


Fig 1:

Table 2: Show the comparison of weight (kg) between jumpers and throwers.

Event	N	Mean	S.D.	t value
Jumpers	20	68.8660	3.5811	13.2070
Throwers	20	81.0381	2.1873	

$t'_{0.05(38)} = 2.021$

Table and figure 2 shows the comparison of weight (kg) between jumper and thrower of under 19 year age group. The mean value of jumper and thrower were found (68.8660 and 81.0381) kg, in statistically result were found extremely significant ($t=13.2070$) respectively. The result show under 19 year age group thrower were heavier (kg) than jumpers.

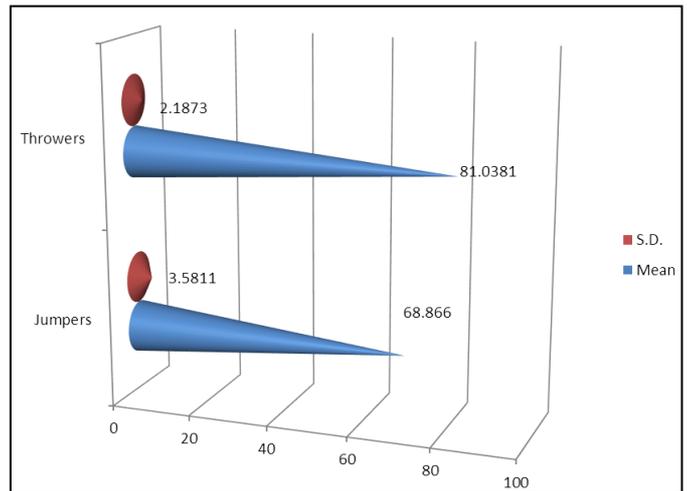


Fig 2:

Table 3: Show the comparison of humerus biepicondylar diameter (cms) between jumpers and throwers.

Event	N	Mean	S.D.	t value
Jumpers	20	6.4145	0.2363	10.2686
Throwers	20	7.2650	0.2852	

$t'_{0.05(38)} = 2.021$

Table 3 shows the comparison of humerus biepicondylar diameter between jumper and thrower under 19 year age group. The mean value of jumper and thrower were found (6.4145 and 7.2650) cms, in statistically result were found extremely significant ($t=10.2686$) respectively. The result show that under 19 year age group thrower were possesses greater humerus biepicondylar (cm) than jumpers.

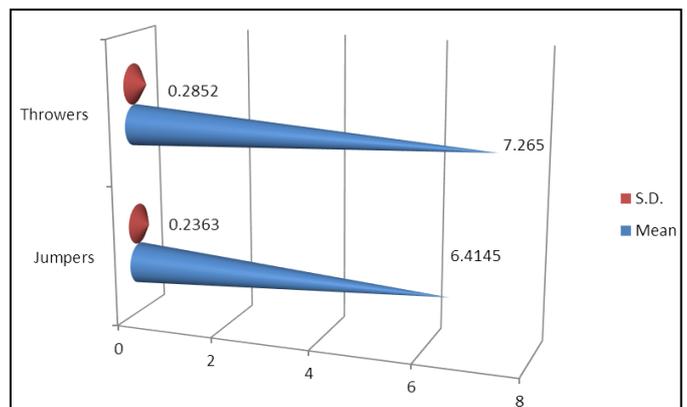


Fig 3:

Table 4: Show the comparison of femur biepicondylar diameter (cms) between jumpers and throwers.

Event	N	Mean	S.D.	t value
Jumpers	20	8.5485	0.2958	6.2496
Throwers	20	9.0770	0.2357	

$t'_{0.05(38)} = 2.021$

Table and figure 4 show the comparison of biepicondylar diameter (cm) between jumper and thrower of under 19 year age group. The mean value of jumper and thrower were found (8.5485 and 9.0770) cms in statistically result were found extremely significant ($t=6.2496$) respectively. The results show under19 year age group throwers were possesses greater femurs biepicondylar diameter (cm) than jumpers.

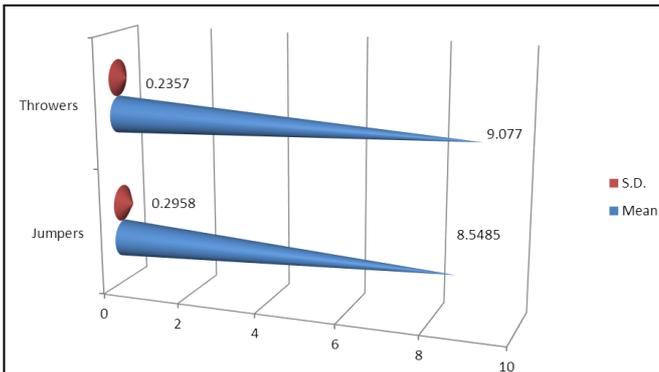


Fig 4:

Table 5: Show the comparison of upper arm circumference (cms) between jumpers and throwers.

Event	N	Mean	S.D.	t value
Jumpers	20	24.0190	0.4856	13.9226
Throwers	20	27.1765	0.8904	

$t'_{0.05(38)} = 2.021$

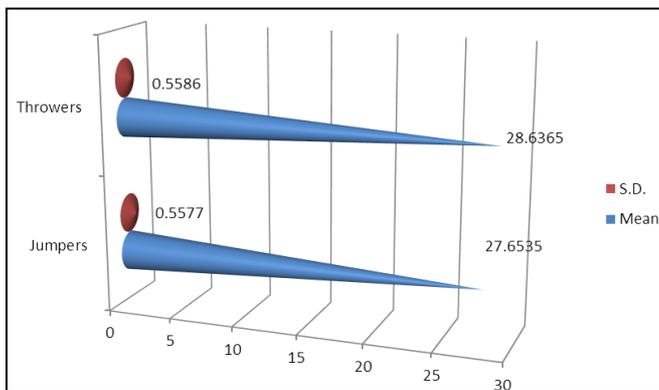


Fig 6:

Table and figure 5 show the comparison of upper arm circumference (cm) between jumper and thrower of under 19 year age group. The mean value of jumper and thrower were found to be (24.0190 and 27.1765) cms, In statistically result were found extremely significant ($t=13.9226$) respectively. The results show under19 year age group throwers were possesses greater upper arm circumference (cm) than jumpers.

Table 6: Show the comparison of calf circumference (cms) between jumpers and throwers.

Event	N	Mean	S.D.	t value
Jumpers	20	27.6535	0.5577	5.5692
Throwers	20	28.6365	0.5586	

$t'_{0.05(38)} = 2.021$

Table and figure 6 show the comparison of calf circumference between jumper and thrower of under19 year age group. The mean value of jumper and thrower were found to be (27.6535 and 28.6365) cms, In statistically result were found extremely significant ($t=5.5692$) respectively. The result shows under19 year age group throwers were possesses greater calf circumference than jumpers.

Interpretation and discussion

The present study shows the comparison of kinanthropometric characteristics between jumpers and thrower under 19 age group. The result shows thrower were taller than jumpers, thrower were heavier than jumpers, thrower were possesses greater humerus biepicondylar than jumpers, thrower were possesses greater femurs biepicondylar diameter than jumpers, thrower were possesses greater upper arm circumference (cm) than jumpers, thrower were possesses greater calf circumference than jumpers. This may be due to genetically and diet pattern.

Conclusions

The comparison between of kinanthropometric characteristics throwers have found taller, heavier, greater diameters and more circumferences than jumpers.

Reference

1. AAPHER. AAPHER youth fitness test manual, Rev.ed., Washington, DC. American Alliance for Physical Education and Recreation, 1995.
2. Debnath, Debnath K, physique, Body Composition and Somatotype of Long Distance Female Swimmers Journal of Sports and Sport Sciences NSNIS. 2005; 25(1):10-15.
3. Gopinath P, Halina G. Correlation of Selected Anthropometric and Physical Fitness Variables to Handball Performance Journal of Sports and Sport Sciences NISNIS. 2009; 23(4):31-36.
4. Health BH, Carter JEL. A Modified Somatotype method. American Journals of Physical Anthropology, 1969.
5. Health BH, Carter JEL. The Health-Carter Somatotype method San Diego San Diego state University Syllabus service, 1980.
6. Jension Clayne R, Hirst Cynthia C. Measurement in Physical Education and Athletic, New York: Macmillan Publishing co. Inc. 1980.
7. Johnson LB, Nelson KJ. Practical measurement for evaluation in physical education, Surjit Publication, New Delhi, 1979.
8. Kaul L. Methodology of Educational research Vikas Publishing House PVT LTD: Delhi, 2007, 235-242.
9. Monyekei KD, Kemper H. Stability of Somatotypes: A Longitudinal Study of Ellirsas Rural Boys Journal of Sports and Sport Sciences NSNIS. 2001; 24(2):5-7.
10. Weiner G, Lourie JA. Human Biology-A Guide field Methods" (1st ed.) Oxford, England Blackwell scientific Publication, 1969.