

**A COMPARATIVE STUDY AMONG CALF CIRCUMFERENCE AND  
THIGH CIRCUMFERENCE OF STATE LEVEL WRESTLERS AND  
NATIONAL LEVEL WRESTLERS.****Sandeep, Dr. Ishwar Malik**Research Scholar, Dept. of Physical Education, Ch. Devi Lal University, Sirsa  
Associate Prof., Dept. of Physical Education, Ch. Devi Lal University, Sirsa**Abstract-**

The aim of this study is to describe and compare the anthropometric measurements of state level male freestyle and Greco-roman wrestlers and national level male freestyle and Greco-roman wrestlers from Haryana, India. The sports performance usually depends on the physique of the player. The data was collected by use of measuring tape. The data was analyzed and compared with the help of statistical procedures in which arithmetic mean, standard deviation (S.D.), t-test were employed. National level wrestlers and State Level Wrestlers Calf circumference and thigh circumference was found significantly.

**Keywords-** Calf circumference and thigh circumference, National level wrestlers, State Level Wrestlers.

**Introduction**

Wrestling is a popular ancient game in India. It involves grappling techniques like holding, throwing, locking joints, pinning down the opponent on the mat etc. Wrestling is a physical competition between two wrestlers those who attempt to gain superior position over his/her opponent. The techniques of wrestling are also used in other martial arts. It is one of the oldest forms of combat sport. As early as 12th century BC. Homer recounted the Trojan War in the Iliad. The origin of wrestling was found about 5,000 years back from the cave paintings in France. The identical types of evidences were found from Babylon and Egypt too. Wrestling techniques were also evident in non-human great apes. In the Ramayana, fight between Bali and Sugriva was the evidence of wrestling (Encyclopedia Britannica, 1981).

Anthropometry, as a newly devised sub-discipline relating to the integrated study of human body especially in connection with sports, has aroused specific interest. The term Anthropometry, after its very first use in 1972, has become gradually popular in the domain of anthropology of sports. In recent years, the study of athletes in the anthropological background has become essential issue and the athletes are regarded as the products of their genes and environments. Various bodily dimensions are assessed in the background of maturation, nutrition and genetic as well as environmental situations to have the overall dimensions of



Anthropometry. The increasing demand of Anthropometry has been pin-pointed with concrete illustrations.

Anthropometry is the area of science concerned with the measurement of human body composition. As a result of changes in life styles, nutrition, activity levels and ethnic composition of populations, changes to the distribution of body dimensions are forever occurring. Anthropometry is the interface between anatomy and movement. It takes the measurement of the human body and determines it's capability for function and movement in a range of settings.

### **Method**

For the purpose of the investigation, the sample for the study were 200 male wrestlers in the age group of 18-25 years, national level wrestlers (N=100) and state level wrestlers (N=100). The subjects were selected from different wrestling academies at Haryana. To measure the calf circumference and thigh circumference of the subjects, they were divided into two groups i.e. national level wrestlers and state level wrestlers to measure by measuring tape. The measure data had been collected, calf circumference and thigh circumference was measured of every individual with the help of measuring tape.

### **DESCRIPTIVE STATISTICS OF THIGH CIRCUMFERENCE**

Table no. 1 indicates the values of descriptive statistics of national level wrestlers and state level wrestlers for thigh circumference, which shows that the mean and S.D. values of national level wrestlers and state level wrestlers were  $49.12 \pm 2.04$  and  $47.64 \pm 2.31$  respectively.

**Table no. 1: Comparison of thigh circumference between national level wrestlers and state level wrestlers**

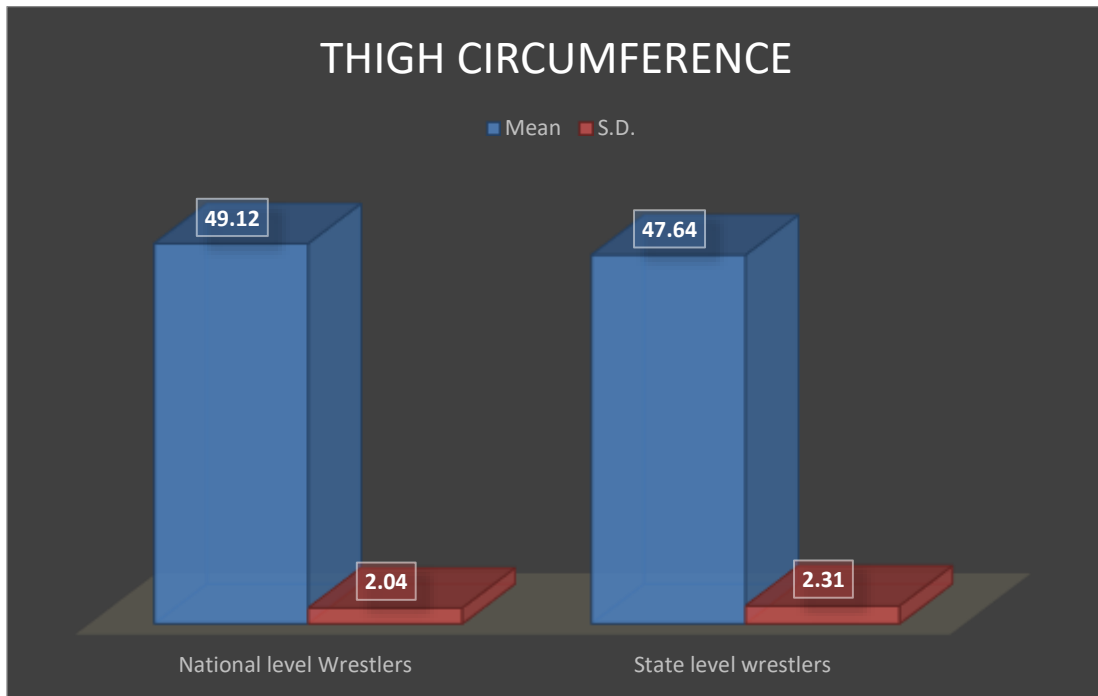
Group	N	Mean (in cm)	S.D.
National level wrestlers	100	49.12	2.04
State level wrestlers	100	47.64	2.31

**Table No. 2**

**T-test description of National level wrestlers and State level wrestlers**

Variable	Groups	df	t-value	Sig.
thigh circumference	National level wrestlers-State level wrestlers	198	2.32	.013

The thigh circumference of national level wrestlers and state level wrestlers is shown in table-2 and fig. 1. As shown in the table the national level wrestlers were significantly greater thigh circumference ( $t=2.32$ ,  $p<0.05$ ) than the state level wrestlers. There was significant difference in thigh circumference between national level wrestlers and state level wrestlers.



**Figure-1 Graphical Representation of thigh circumference between national level wrestlers and state level wrestlers**

**DESCRIPTIVE STATISTICS OF CALF CIRCUMFERENCE**

Table no. 3 indicates the values of descriptive statistics of national level wrestlers and state level wrestlers for calf circumference, which shows that the mean and S.D. values of national level wrestlers and state level wrestlers were  $32.87\pm 1.14$  and  $32.63\pm 1.41$  respectively.

**Table 3: Comparison of calf circumference between national level wrestlers and state level wrestlers**

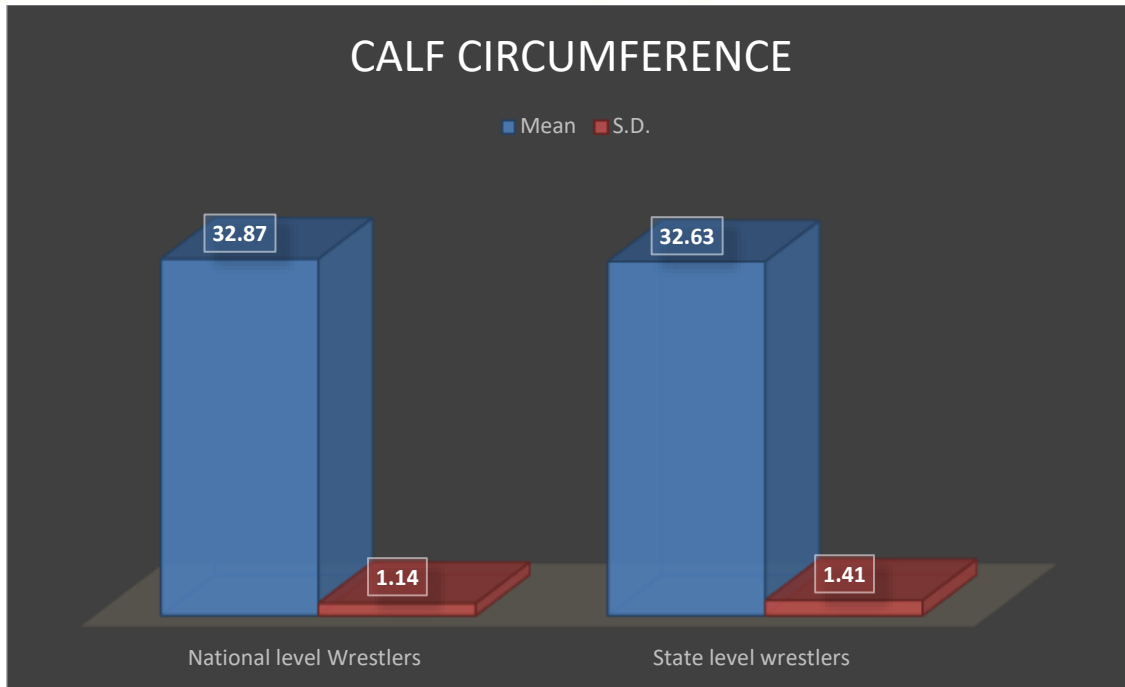
Group	N	Mean (in cm)	S.D.
National level wrestlers	100	32.87	1.14
State level wrestlers	100	32.63	1.41

**Table No. 4**

**T-test description of National level wrestlers and State level wrestlers**

Variable	Groups	df	t-value	Sig.
calf circumference	National level wrestlers-State level wrestlers	198	1.86	.021

The calf circumference of national level wrestlers and state level wrestlers is shown in table-4 and fig. 2. As shown in the table the national level wrestlers were significantly greater calf circumference ( $t=1.86$ ,  $p<0.05$ ) than the state level wrestlers. There was significant difference in calf circumference between national level wrestlers and state level wrestlers.



**Figure-2 Graphical Representation of calf circumference between national level wrestlers and state level wrestlers**

### Conclusion

In the present study it was concluded that national level wrestlers were significantly higher calf circumference and thigh circumference than the state level wrestlers. So that, There significant difference in calf circumference and thigh circumference between national level wrestlers and state level wrestlers.

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