



# International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
IJPESH 2015; 1(3): 27-29  
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www.kheljournal.com  
Received: 11-12-2014  
Accepted: 30-12-2014

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## Comparative Study of Kinanthropometric Measurements of Judo and Wrestling Female Players of Hisar District

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### Abstract

In the present study, an attempt has been made to compare the Kinanthropometric measurements of Judo and Wrestling female players. The study was carried out on 50 players (25 Judo and 25 Wrestling female players). The age of the selected subjects ranged from 19 to 27 years. *Subjects were only measured by skin fold caliper.* The present study was delimited to the affiliated from different colleges of Hisar district of Haryana. To compare the skinfold measurements such as calf skin folds and subscapular skin folds was used to measure various skin folds. The data were used to analyze by t-test.

**Keywords:** Judo, Wrestling, Anthropometry, calf skin fold, subscapular skin folds, female, Sirsa.

### 1. Introduction

Sports men have been able to give wonderful performance only due to the participation of new scientifically substantiated training methods and means of carrying into action sports such as sports techniques and tactics, betterment of sports gross equipments, as well as other components and system of gross sports training. Kinanthropometry measurement plays a critical role in different game and sports, routinely new records are being established in different sports activity possibly by science and technology merely the area of Physical education and sports has also established from the development of science and technology. The high level of functioning by a sports man by requires an extremely scientific approach and it should be done right from the level of identified talent. Kinanthropometry is a branch of ergonomics. Kinanthropometry is the measurement of body size, shape, strength, weight, fat & working capability of the body. The most widely used method is by using gun calipers to measure the thickness of subcutaneous fat in multiple places on the body. This involves the abdominal area, the subscapular region, arms, buttocks and thighs. These measurements are then used to estimate total body fat with a margin of approximately four percentage points. The body percentage fat is a measure of fitness level, because it is the only body measurement which directly calculates a person's relative body composition without related to height or weight. Body composition refers to the proportion of fat and fat-free mass in the body. Those with a higher proportion of fat-free mass to a lower proportion of body fat have a healthy body composition.

### 2. Review of related Literature

Abdelkrim, *et al.*, (2010) <sup>[1]</sup> in their study compared the physical attributes of elite men's basketball players according to age and specific individual positional roles. Forty-five players from 3 national basketball teams (Under-18 years, Under-20 years, and Senior) were measured for anthropometry (height, body mass, percentage body fat), explosive power (5 jumps and vertical jump), speed (5-m, 10-m, and 30-m sprint), agility (T-test), strength (bench press and squat 1 repetition maximum [1RM]), and intermittent high-intensity endurance performance (Yo-Yo intermittent recovery test [Yo-Yo IR1]). Data on match frequency, training routines, and playing experience were also collected. Under-26, 18 players were significantly ( $p < 0.05$ ) shorter and lighter than both Senior and Under-20 players, but showed higher ( $p < 0.05$ ) percentage body fat. Under-20 and Senior players were faster and had better explosive-power and agility ( $p < 0.05$ ) performances than Under-18 players. Bench press and squat 1RMs were higher in Senior players ( $p < 0.05$ ) compared with the other groups.

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There were significant differences in the Yo-Yo IR1 performance among groups (Senior > Under-20 > Under-18,  $p < 0.05$ ). Centers and power forwards were the tallest and the heaviest ( $p < 0.05$ ). The Yo-Yo IR1 performance was higher ( $p < 0.01$ ) in point guards than in centers. Point guards showed also better agility and 5- and 10-m performances. Power forwards and centers were stronger than the rest of players' positions in the bench press 1RM ( $p < 0.01$ ). These results showed the existence of age and positional role differences in fitness performance in men's basketball. Differences were particularly evident in intermittent high-intensity endurance and agility performance. Sprint training possibly should be individualized when dealing with positional roles in elite men's basketball. Strength and conditioning coaches should use Yo-Yo IR1 to assess specific endurance in players of different age and positional role.

**2.1 Objective of the study**

- To compare the skin fold measurements such as calf skin folds and subscapular skin folds of Judo and Wrestling female players.

**2.2 Hypothesis**

- There would be a great significant difference in skin fold measurement like calf skin folds and subscapular skin folds.

**2.3 Delimitation**

The present study was delimited to Judo and Wrestling female players of inter collage championship.

- Only fifty female players from each game of judo and wrestling were selected as the subject.
- The age group range from 18 to 28 years for the subject.

- Subjects were only measured by skin fold caliper.
- Fat and fat percentage was calculated only by siri equation (1956).
- The present study was delimited to the different colleges of Hisar district of Haryana.

**3. Method and procedure**

**3.1 Sample**

The present study was concerned with 25 female players of judo and 25 female players of wrestling with age level 19 to 27 years as the subject.

**3.2 Tool Used**

The weight of the subject was measured with the help of portable electronic weighing machines.

- The lange skin fold caliper was used to measure various skin folds.

**3.3 Selection of Variables**

- Calf skin folds and subscapular skin folds were measured.

**3.4 Instrument Reliability**

- Lange skin fold caliper
- Measuring Tape.

**3.5 Statistical technique**

For the present study, the mean value, Standard deviations, T-test was applies to analyze the data.

**4. Analysis and Interpretation of Data**

Analysis of data-the data of the present study is analysis and interpretation in different tables as follows:

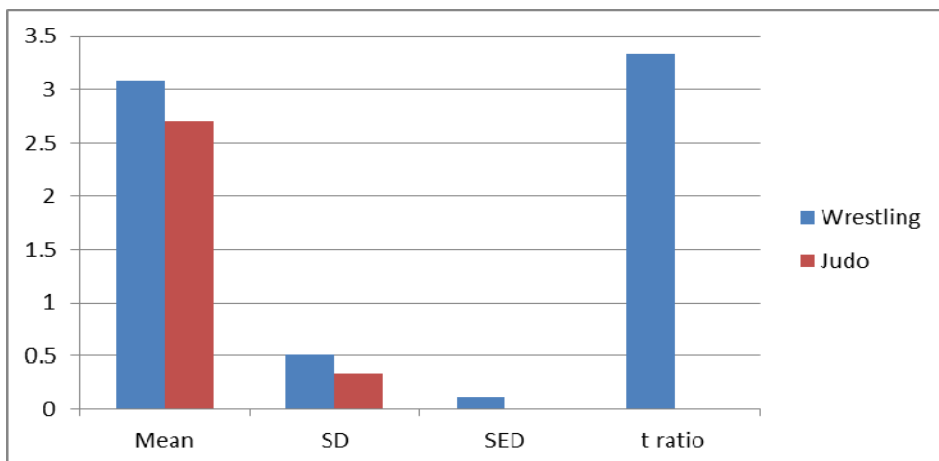
**Table 4.1:** Comparison of calf skin folds measurement of wrestling and judo female players.

Variables	No. of players	Wrestling		Judo		S.E.D	T ratio
Calf Skin fold	25	Mean (mm)	S.D	Mean (mm)	S.D	0.11	3.33
	25	3.08	0.50	2.70	0.33		

The significant at the 0.01 level of the confidence.

Table no.5 represent that the mean score of wrestling female players is 3.08, SD is 0.50 and the mean score of judo female player is 2.70. SD 0.33 and SED is 0.11 and t-ratio score is 3.33. The significant at the 0.01 level of the confidence. It means that the thickness of calf muscle of wrestling female

players is more than better compared to judo female players. In hypothesis there would be a great significant difference in calf skin fold measurement. But now the hypothesis was significant at 0.01 level of the confidence so the hypothesis was accepted.



**Graph-4.1:** Significant at 0.01 level

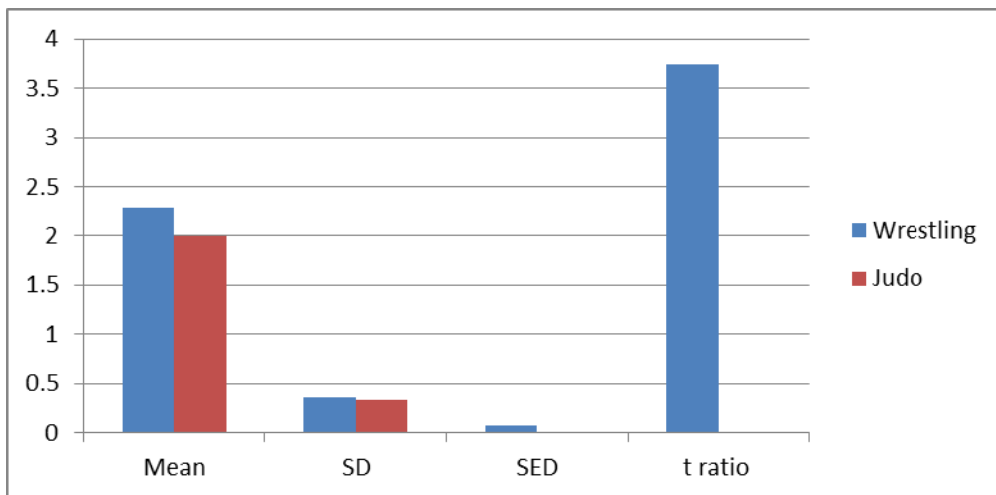
**Table 4.2:** Comparison of subscapular skin folds measurement of wrestling and judo female players.

Variables	No. of players	Wrestling		Judo		S.E.D	T ratio
		Mean(mm)	S.D	Mean(mm)	S.D		
Sub scapular skin fold	25						
	25	2.28	0.35	2.00	0.33	0.07	3.74

Significant of 0.01 level of confidence.

Table no.6 represent that the mean score of wrestling female players 2.28, SD 0.35 and the mean score of subscapular of judo female player 2.00, SD is 0.33 and the SED is 0.07 and t-ratio score is 3.7 and The significant at the 0.01 level of the confidence. It means that the thickness of the subscapular has

been founded better in wrestling female players as compared to judo female players. In hypothesis, there would be a great significant difference in sub scapular skin fold measurement. But now the hypothesis was significant at 0.01 level of the confidence so the hypothesis was accepted.

**Graph-4.2:** Comparisons of subscapular skin fold measurement of wrestling and judo female players

Significant at 0.01 level

## 5. Conclusion

In complete analysis of the finding of the present study that the skin fold measurement like calf skin fold and subscapular skinfold is more thicker, compared to judo female players. But there was similar difference between wrestling male players and judo male players in case of biceps skin folds measurements.

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