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A study of wrist circumference and foot length as a kin-anthropometric characteristic between judo and wrestling male players

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Abstract

Rational of the study: Judo and Wrestling both types of sports are considered as strength dominating phenomenon. Wrist circumference and foot length plays an important role in tackling and stability during performance. Therefore, with this point of view the present study entitled *"A Study of Wrist Circumference and Foot Length as a Kin-Anthropometric Characteristic between Judo and Wrestling Male Players"* has been designed to investigate kin-anthropometric characteristics of selected subjects.

Design of the study: For assess the exits characteristics regarding kin-anthropometric variables descriptive research design was used for the present study.

Methodology: For accomplish the study a total 60 subjects were selected through random sampling technique. Out of the total sample 30 subjects were selected from Judo and rests of subjects were selected from wrestling sports. The age of the sample were ranged from 18 to 25 years. The independent sample 't' test was used as comparative statistics and level of confidence was assumed as 0.05 respectively.

Results: On the basis of the obtained results, it was observed that no significant difference was observed between Judo and Wrestling Male players in their wrist circumference. On the other hand a statistically significant results was observed in their foot length with the mean and SD of 25.15±1.44 of Judo and 25.94±1.46 of Wrestling respectively.

Keywords: Kin-anthropometric, judo, wrestling, foot length, wrist circumference

Introduction

Kinanthropometry is the interface between human anatomy and movement. It is the application of a series of measurements made on the body and from these we can use the data that we gather directly or perform calculations using the data to produce various indices and body composition predictions and to measure and describe physique.

Kinanthropometry is an unknown word for many people except those inside the field of sport science. Describing the etymology of the word Kinanthropometry can help illustrate simply what you are going to talk about. However, if you have to say just a few sentences about the general scope of it, some problems will arise immediately. Is it a science? Why are its central definitions so ambiguous and various? For what really matter the Kinanthropometry assessment. And so on.

Methodology and Procedure

Selection of the Sample: For accomplish the study a total 60 subjects were selected through random sampling technique. Out of the total sample 30 subjects were selected from Judo and rests of subjects were selected from wrestling sports. The age of the sample were ranged from 18 to 25 years.

Selection of the Variables: Wrist Circumference and Foot Length the measure of Kin-anthropometry were used to compare between judo and wrestling male players. wrist circumference was measured with the help of flexible steel tape and foot length which is also known as foot span was measure through a ruler. Both measurements were taken in centimeters within two decimal places.

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Statistical methods: Arithmetic mean and Standard deviation the measure of dispersion or variability were used as descriptive statistics which are also determined the symmetrical and homogeneity of the obtained data. Following formulas were used to compute the arithmetic mean and standard deviation. That is,

$$Mean = \frac{\Sigma f}{N} = \text{Standard Deviation or SD} = \sqrt{\frac{\Sigma X^2}{N}}$$

To compare the obtained mean of both groups in regard of BMI independent sample t test was used. Following equation used to calculate the 't' test. That is,

$$t = \frac{m_1 - m_2}{\sqrt{\frac{s^2}{n^a} + \frac{s^2}{n^b}}}$$

All statistical computation has been performed within SPSS (Statistical Package for Social Science) version 20.0 respectively. The level of significance was set at 0.05 level of confidence.

Results

Table 1: Descriptive Statistics

Variables	Game_Type	N	Mean (cm)	Std. Deviation
Wrist circumference	Judo	30	16.72	1.06
	Wrestling	30	16.90	0.984
Foot length	Judo	30	25.15	1.44
	Wrestling	30	25.94	1.46

The table no 1 shows the descriptive statistics on their selected variables. The mean and standard deviation of wrist circumference of Judo players was 16.72±1.06, wrestling players was 16.90±0.984. Whereas the mean score of foot length of Judo players was 25.15±1.44 and wrestling players was 25.94±1.46 respectively. It was observed that wrestling players has slightly higher mean value in wrist circumference in comparison of Judo players.
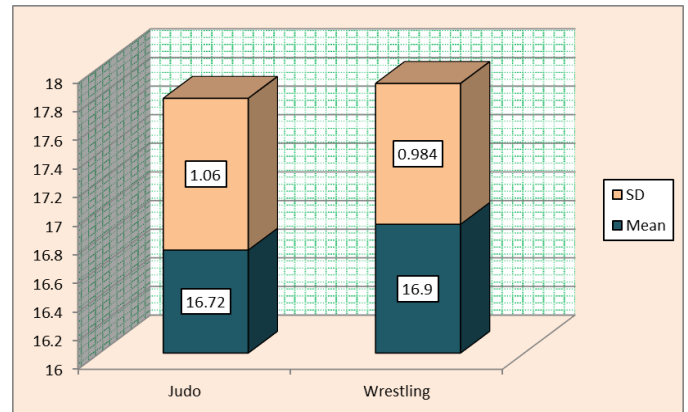

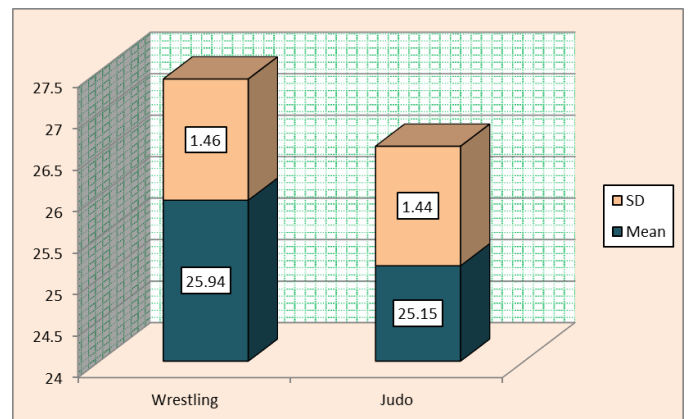**Fig 1:** Graphical Representation of Mean Score of wrist circumference

Fig 2: Graphical Representations of Mean Score of Foot Length

Table 2: Comparision of mean score of foot length and wrist circumference between judo and wrestling players

Variable	Group	Mean	(df)	(t)	Sig. (Two tailed)
Wrist Circumference	Judo	16.72	58	.681	.498
	Wrestling	16.90			
Foot Length	Judo	25.15	58	2.108	.039
	Wrestling	25.94			

The table 2 explore the comparative statistics between the selected variables of Judo and Wrestling players. The score of independent t test between Judo and Wrestling players in their wrist circumference was .681 which was not significant at 0.05 level of significance. Whereas, the two tailed significance value of foot length was 0.039 with the t value of 2.108 was less than 0.05 (*P*<0.05) respectively. Which determine a statistically significant difference between judo and wrestling players in their foot length. The mean score of foot length of wrestling players in higher than the judo players means wrestling players has higher foot length in comparison of judo players.

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