

Profile of Selected Anthropometric Variables of Weight Category of -56 Kg to -60 Kg of Top-Class Indian Judokas

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ABSTRACT

The purpose of the study was to prepare the profile of selected anthropometric variables of 20 athletes who had competed at the national level comprised only male players from Madhya Pradesh who were between the ages of 18 and 25 and who were residents of Madhya Pradesh. Each of these athletes was a native of the Indian state of Madhya Pradesh. All the anthropometric measurements were measured to the 1/10th of the centimeter. Non-stretchable measuring tape were used to measure the length. Results of the study showed that in anthropometric variables sitting height was lowest in -56 kg to -60 kg. Leg length was lowest in -56 kg to -60 kg. Shoulder width was lowest in -56 kg to -60 kg. Upper arm circumference was lowest in -56 kg to -60 kg. Forearm circumference was medium in -56 kg to -60 kg. Chest circumference was lowest in -56 kg to -60 kg. Thigh circumference lowest in -56 kg to -60 kg. Calf circumference lowest in -56 kg to -60 kg.

Thus, height and skinfold thickness are mostly differentiated between heavier and lighter groups, but bone breadths and circumferences are the primary differentiators between weight categories.

Keywords- Judokas, profiling, Anthropometric, Top-Class.

I. INTRODUCTION

It is impossible to advance in any field in today's modern scientific age without a solid foundation in the relevant scientific literature. In the same vein, a sportsperson or coach who lacks a scientific understanding of training methods, techniques, and means cannot hope to outperform someone who does have such an understanding. No one, then, can outperform someone who has scientific knowledge of training methods, tactics, and means when it comes to achieving the aim of greater levels of performance and realizing a sportsman's desire. Therefore, scientific knowledge of training methods, techniques, and means are important to reach the objective of higher levels of Performance and for the realization of the sportsman's desire. Though many things have a role in achieving success, scientific training methods, tactics, and means contribute the most. However, scientifically-based

training approaches, procedures, and tools yield the best outcomes with the least amount of effort and time invested. In the present study an attempt is being made to estimate the Judo performance on the basis selected Anthropometric variables by developing profile of top-class Judokas.

II. MATERIAL AND METHODS

Selection of Subjects:

This study's sample of 20 athletes who had competed at the national level comprised only male players from Madhya Pradesh who were between the ages of 18 and 25 and who were residents of Madhya Pradesh. Each of these athletes was a native of the Indian state of Madhya Pradesh.

Anthropometric measurements

- Sitting height
- Leg length

- Shoulder width
- Upper arm circumference
- Fore arm circumference
- Chest circumference
- Thigh circumference
- Calf circumference.

measured to the 1/10th of the centimeter. Non-stretchable measuring tape were used to measure the length.

III. RESULTS

Anthropometric Variables

Weight Category -56 Kg to -60 Kg

Criterion measures

All the anthropometric measurements were

Table 1: Descriptive Statistics for Selected Anthropometric Variables of National Level Judo Players of Weight Category -56 Kg to -60 Kg

	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Sitting Height (In Cm)	20	36.20	72.20	108.40	1714.80	85.740	8.680
Leg Length (In Cm)	20	31.00	69.70	100.70	1749.50	87.475	7.804
Shoulder Width (In Cm)	20	10.80	28.20	39.00	675.90	33.795	3.036
Upper arm Circumference (In Cm)	20	11.10	22.40	33.50	557.10	27.855	2.965
Forearm Circumference (In Cm)	20	8.50	21.30	29.80	506.00	25.300	2.293
Chest Circumference (In Cm)	20	23.60	74.40	98.00	1700.90	85.045	6.773
Thigh Circumference (In Cm)	20	20.70	34.90	55.60	940.50	47.025	5.270
Calf Circumference (In Cm)	20	18.10	25.00	43.10	666.00	33.300	5.062

Table 1 shows descriptive statistics for selected anthropometric variables of national level judo players of weight category (-56 kg to -60 kg). Mean and standard deviation of sitting height (In Cm) is 85.74±8.68, leg length (in cm) 87.47±7.80, shoulder width (in cm) 33.75±3.03, upper arm circumference (in cm) 27.85±2.96, forearm circumference (in cm) 25.30±2.29, chest circumference (in cm) 85.04± 6.77, thigh circumference (in cm) 47.02±5.27 and calf circumference (in cm) 33.30±5.06 respectively.

Development of the profile chart for selected anthropometric variables of national level judo players of weight category -56 kg to -60 kg:

For developing the profile chart of the for selected anthropometric variables of national level judo players of weight category -56 kg to -60 kg we need minimum score, maximum score, mean and standard deviation out of all the descriptive statistics for all the selected anthropometric variables mentioned in the table 1.

Table 2: Required Descriptive Statistics of Selected Anthropometric Variables of National Level Judo Players of Weight Category -56 Kg to -60 Kg

	Minimum	Maximum	Mean	Std. Deviation
Sitting Height (In Cm)	72.20	108.40	85.740	8.680
Leg Length (In Cm)	69.70	100.70	87.475	7.804
Shoulder Width (In Cm)	28.20	39.00	33.795	3.036
Upper arm Circumference (In Cm)	22.40	33.50	27.855	2.965
Forearm Circumference (In Cm)	21.30	29.80	25.300	2.293
Chest Circumference (In Cm)	74.40	98.00	85.045	6.773
Thigh Circumference (In Cm)	34.90	55.60	47.025	5.270
Calf Circumference (In Cm)	25.00	43.10	33.300	5.062

Table 2 shows all the required statistics to develop profile chart of national level judo players of weight category -56 kg to -60 kg in respect of selected anthropometric variables.

Conversion of Data into Standard Scores:

After converting the data into standard score ($Z = \frac{X - \bar{X}}{s}$), the prepared chart is mentioned below in Table 3:

Table 3: Standard score (Z) of required Statistics of Selected Anthropometric Variables of National Level Judo Players of Weight Category -56 Kg to -60 Kg

Variables	Minimum(Z)	Mean (Z)	Maximum(Z)
Sitting Height	-1.560	0	2.611
Leg Length	-2.278	0	1.695
Shoulder Width	-1.843	0	1.714
Upper arm Circumference	-1.840	0	1.904
Forearm Circumference	-1.744	0	1.962
Chest Circumference	-1.572	0	1.913
Thigh Circumference	-2.301	0	1.627
Calf Circumference	-1.640	0	1.936

Table 3 shows standard score (z) of required statistics for preparation of profile chart of selected anthropometric variables of national level judo players of weight category -56 kg to -60 kg.

Linear Transformation of the Standard Scores (Profile Chart):

For removing the effect of negative values, the linear transformation of the standard scores is done by using the transformation equation $Z_1 = 50 + 10 \times Z$. The linear transformed profile chart is given below in the table 4:

Table 4: Transformed Standard Scores of Minimum, Maximum and Mean of Selected Anthropometric Variables

Variables	Minimum(Z)	Mean (Z)	Maximum(Z)
Sitting Height	34.401	50	76.106
Leg Length	27.223	50	66.946
Shoulder Width	31.571	50	67.144
Upper arm Circumference	31.602	50	69.039
Forearm Circumference	32.556	50	69.625
Chest Circumference	34.283	50	69.127
Thigh Circumference	26.992	50	66.271
Calf Circumference	33.603	50	69.360

Table 4 shows, the linear transformation of the standard scores is done by using the transformation equation $Z_1 = 50 + 10 \times Z$.

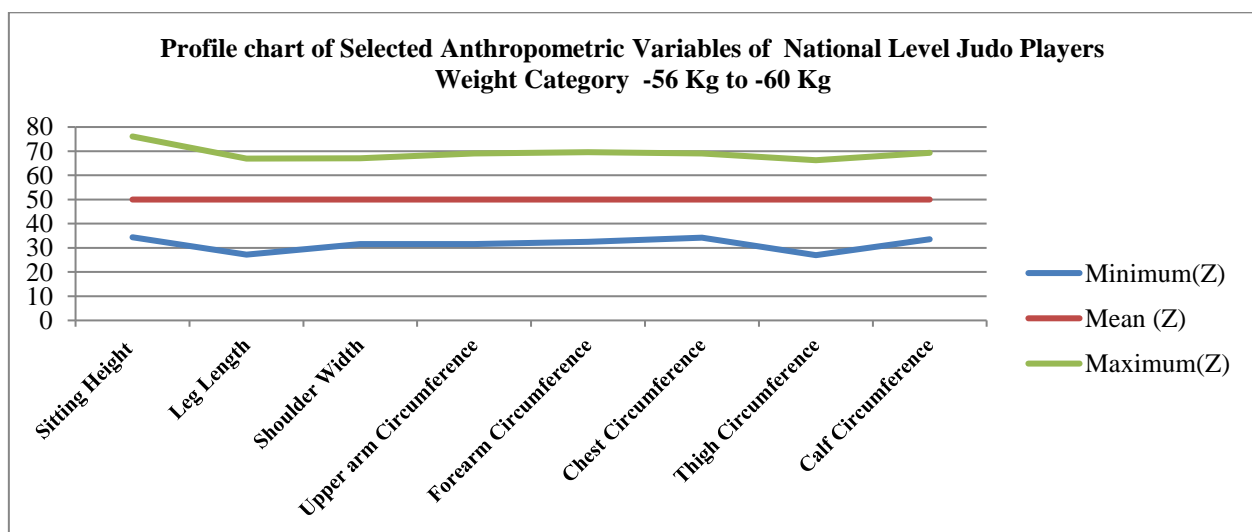


Figure 1: Profile chart of Selected Anthropometric Variables of National Level Judo Players Weight Category (-56 Kg to -60 Kg)

IV. DISCUSSION OF FINDINGS

Results of the study showed that in anthropometric variables sitting height was lowest in -56 kg to -60 kg. Leg length was lowest in -56 kg to -60 kg. Shoulder width was lowest in -56 kg to -60 kg. Upper arm circumference was lowest in -56 kg to -60 kg. Forearm circumference was medium in -56 kg to -60 kg. Chest circumference was lowest in -56 kg to -60 kg. Thigh circumference lowest in -56 kg to -60 kg. Calf circumference lowest in -56 kg to -60 kg.

Thus, height and skinfold thickness are mostly differentiated between heavier and lighter groups, but bone breadths and circumferences are the primary differentiators between weight categories. Previous findings about the lowest fat percentages in the lightest weight categories and the highest values in the lowest weight category (-81 to -90 kg) are corroborated by this study (Franchini et al., 2011). High circumference values were also seen across all weight classes, indicating that muscle growth is either an essential trait for judo athletes or the result of rigorous, long-term judo training (Franchini et al., 2005; Kim et al.).

Somatic traits of successful athletes in a given sport have been found to differ from the general population, according to studies of human anatomy conducted to date. When it comes to appearance, no two people are exactly alike. The range of human variation is so broad that no two people share the same exact set of characteristics. It's common knowledge that due to the vast differences in human anatomy, some sporting activities are better suited to particular body types than others. There are many aspects that contribute to peak performance, but one of the most important is a person's unique physical traits, including their size, type, and structure.

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