The Physique of Junior National Male Kabaddi Players

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ABSTRACT

The present anthropometric study has been conducted on 33 junior National male Kabaddi players from SAI Centre, Bangalore, during February 2015. Standard anthropometric instruments and standard techniques were followed for taking body measurements. Somatotype components were computed according to computer equations of Carter (1980). Mean, SD and test of significance were applied for analysis purpose. The junior national male Kabaddi players were found be 171.46 cm tall and 65.38 kg heavy. Their mean somatotype was 2.42-5.27-2.59. The junior players of present study were shorter, lighter, having smaller width of femur, lesser girth of upper arm and leaner in skinfold thickness of subscapular than seniors reported by Kaur, R. et al (2001).

INTRODUCTION

Kabaddi is one of the most popular folk games in India, which requires both skill and power, and combines the characteristics of Wrestling, Judo, and Rugby. Kabaddi is the game where size, shape and body composition play an important role in providing distinct advantage for specific playing positions. These include the skill level, flexibility, endurance and most importantly the specific use of anthropometric measurements which plays a vital role in complex team based games.

Sodhi and Sidha (1984), reported that Kabaddi players were almost similar to Judo players; but, heavier than footbailers. Hockey players and boxes. The mean height and weight of the Kabaddi players were higher than those of the average Indian population. The total body fat percentage of the Kabaddi players was more than judokas, boxers, weightlifters, wrestlers (except the heavy weight category) and footballers (Dey et al, 1993; Sodhi & Sidhu, 1984). Due to higher fat percentage, Kabaddi players were found to be lower in the mesomorphic and higher in the endomorphic ratings compared with the above mentioned sports.

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Kaur, R. et al (2001) reported an anthropometric study on Asian Gold Medallist senior national players. They were 175.26cm tall and 76.67kg heavy. Their somatotype was 2.6-5.46-1.97. Mehdi et al, (2012) reported a study on correlation between anthropometric and physical fitness traits : A case study in Hamedan Kabaddi team. They found significant relationship between balance test and length of leg and hand (r=0.381), as well as negative relation with body fat (r=-0.461. The mean age of players wes 18.1±1.5 year.

The present study has been undertaken on junior national Kabaddi players to know their physique.

METHODOLOGY

The present anthropometric study has been conducted on 33 Junior national male Kabaddi players. The date were collected from SAI Centre, Bangalore, during February 2015. A series of anthropometric measurements were carried out on each participant viz., height, body weight, diameter of humerus, femur, circumference of upper arm flexed, calf, skinfolds at sites of triceps, subscapular, supraspinale and calf. The date were collected by following a standard testing protocol of International society for Advancement of Kinanthropometry with standard instruments (ISAK, 2001).

Somatotype components were computed according to computer equations of Carter (1980).

Endomorphy =-0.7182 + 0.1451 (X)-0.00068 (X^2) + 0.0000014(X^3)
Where X=Sum of Triceps, Subscapular and Supraspinale Skinfolds.
For obtaining height corrected Endomorphy, X is multiplied with 170.18 and divided by height of subject.

Mesomorphy = (0.859xHumerus breadth) + (0.601x Femur breadth + (0.188 x Skinfold-corrected Arm Girth) + (0.161 x Skinfold-corrected Calf Girth) -(0.131 x height) + 4.5

Where Skinfold-corrected Arm Girth = Flexed Arm Girth-Triceps Skinfold (cm)
Corrected Calf Girth = Max. Calf Girth-Medial Calf Skinfold (cm)

Ectomorphy=HWR x 0.732-28.58, Where HWR=height/cube root of weight
If HWR<40.75 but > 38.25, then Ectomorphy = HWR x 0.463-17.63
If HWR <or = 28.25, then Ectomorphy = 0.1

Mean, standard deviations were computed. Test of significance (student t test) was used for comparison of junior and senior player's date.

RESULTS & DISCUSSION

Descriptive statistics of various anthropometric variables of National Campers Junior and senior Kabaddi Boys are presented hereunder.

Table 1, shows the Mean value, Standard deviation and test of significance of various anthropometric variables of junior and senior male Kabaddi players. The junior players of present study were found to be significantly younger in age (17.67, 27.57 years, respectively) than seniors of 2001. The former were found to be shorter

(171.46, 175.26 cm, respectively) and lighter than latter (65.38kg 76.67kg, respectively) reported by Kaur, R. (2001). The junior players of present study possess significantly lesser diameter of femur and upper arm circumference flexed than senior Kabaddi players. The junior Kabaddi players were found to be leaner in skinfold thickness than seniors of 2001 at the sites of triceps, subscapular, Supraspinale and calf. The statistically significant differences were observed only in subscapular skinfold thickness between present study junior and senior players of 2001 (t=4.6). In case of somatotype, the significant differences between junior players and seniors have been observed in ectomirphic component whereas endimorphic and mesomorphic non-signicant.

Thus, the present study concludes that junior players were shorter, lighter having smaller width of femur, lesser girth of upper arm and leaner in skinfold thickness of subscapular than seniors reported by Kaur, R. (2001).

Table-1: The comparison of anthropometric parameters between Junior and Senior National male Kabaddi players

Variables	Junior Male Kabaddi Players (N=33) present study		Senior Male Kabaddi Players (N=45) R. Kaur et al. 2001		
	Mean	SD	Mean	SD	t-value
Age (yrs)	17.67	0.92	27.57	3.51	18.1
Height (cm.)	171.46	5.07	175.26	5.76	3.1*
Weight (kg.)	65.38	4.44	76.67	6.66	9.0*
Humerus diameter (cm.)	7.08	0.33	7.06	0.34	0.26
Femur diameter (cm.)	9.68	0.52	10.09	0.35	3.90*
Upper Arm girth F (cm.)	31.50	1.34	33.74	1.75	6.4*
Calf girth (cm.)	35.36	1.51	36.08	2.23	1.7
Triceps skinfold (mm.)	8.65	2.79	8.71	3.37	0.1
Subscapular skinfold (mm.)	9.32	2.19	13.05	4.73	4.6*
Supraspinale skinfold (mm.)	4.78	1.51	5.11	2.18	0.78
Calf skinfold (mm.)	6.70	1.77	7.69	2.78	1.90
SOMATOTYPE					
Endomorphy	2.42	0.63	2.67	0.89	1.4
Mesomorphy	5.27	0.80	5.46	0.92	0.97
Ectomorphy	2.59	0.72	1.97	1.18	2.9*

*Significant at 5% level

Table-2: Somatotype classification of Junior National Male Kabaddi Players

Variables	Number of Players (N=33)	
	Boys	Percentage
Endomorphic mesomorh	10	30.30
Balanced mesomorph	13	39.39
Ectomorphic mesomorph	9	27.27
Mesomorphic ectomorph	1	3.03
Total	**33**	

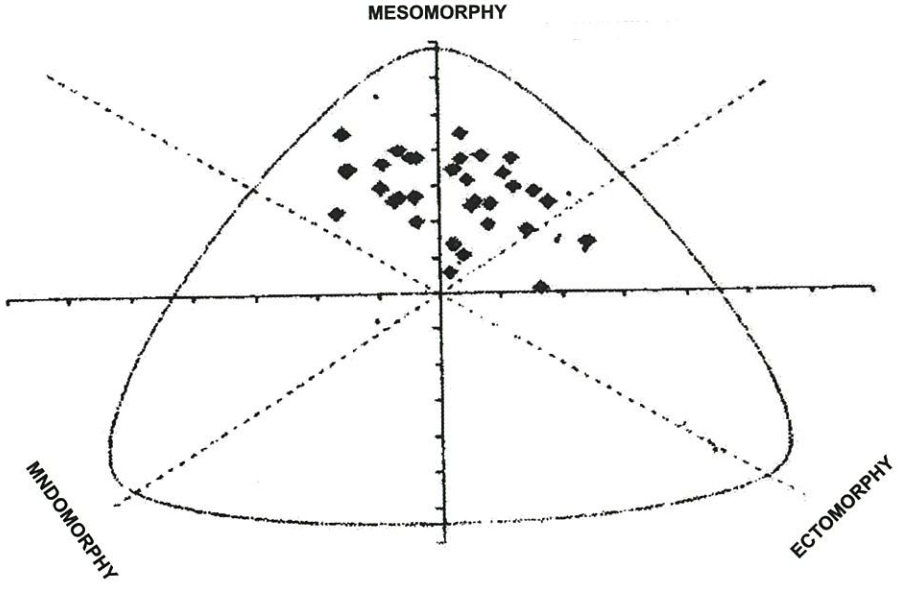

Fig. 1 : Somatochart of Junior National Male Kabaddi Players

Table 2 and Figure 1 show the distribution of somatotypes on somatochart. As evident from Table most of junior players represented balanced mesomorph sector of somatochart followed by Endomorphic mesomorphic and Ectomorphic mesomorph. Mesomorph and ectomorph players were least.

COUNCLUSION

The findings of study indicate that Junior players of present study were shorter, lighter and more ectomorphic than seniors. (Kaur, R. et al, 2001). As the game is gaining popularity in the world population, systematic studies are needed to select the player, to train up them and to enhance their individual and group performances.

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