

RESEARCH PAPER

# Players in *Kabaddi* anthropometric characters of arm length and leg length

**B.R. Siyad**

Alagappa University, **Karaikudi (T.N.) India**  
(Email: siyadbr@gmail.com)

## ABSTRACT

The purpose of the study was to find out Anthropometric characteristics of players at different playing positions in *Kabaddi*. The study was delimited to 30 National level women *Kabaddi* players aged between 18 and 22 years, who were undergoing training at SAI-LNCPE, Thiruvananthapuram and NSS College for Women, Karamana Thiruvananthapuram. The variables selected for the study were arm length and leg length. Descriptive statistics and one way analysis of variance (ANOVA) were calculated using SPSS and MS Office Excel. Scheffe's post hoc test was carried out to find out the significance of difference between paired means. Results of the study reveal that the National level women *Kabaddi* players did not vary much on the bodily features of arm length and leg length when compared with other groups according to their playing positions. Right and left side arm lengths of right corner players were greater than the left cover and left corner position players. This shows that the categorisation of playing positions was not derived on the basis of arm length and leg length when they were selected in the team and also when playing positions were assigned to them.

**Key Words :** Anthropometry, Arm length, Leg length

**View point paper :** Siyad, B.R. (2019). Players in *Kabaddi* anthropometric characters of arm length and leg length. *Asian Sci.*, **14** (1and 2): 1-4, DOI : 10.15740/HAS/AS/14.1and2/1-4. Copyright@2019: Hind Agri-Horticultural Society.

The word anthropometry is derived from the Greek word 'anthros' meaning man and metre, meaning to measure. Earlier anthropometry was used mainly for racial, differentiation and personal identification. Human movement is the result of a complex interaction, between environmental factors and the human cerebral cortex. The stimuli are converted by supra spinal centre programming into neural outputs (central commands) that stimulate the muscular system to produce the required movement."Anthropometry" means the measurement of man, whether living or dead and consists primarily in the measurement of the dimensions of the body (Montagu,1960). Anthropometry- the measurements

of man- provides scientific methods and observations on the living man and the skeleton. Anthropometry represents the typical and traditional tool of human biology, physical anthropology and axiology. Recently it has developed a strong bonded relationship with physical education and sports sciences. *Kabaddi* is a game which combines the actions of wrestling, judo, rugby and gymnastics. The important body movements in this game involve catching, holding, locking and jumping. Thus, the possession of desirable anthropometric characteristics will have a greater advantage in executing a better performance in competition. The present study aims at identifying such characteristic features which suit to take up a playing

position in the game of *Kabaddi*. Anthropometric measurements vary from individual to individual. The measurement of structure of the body is called Anthropometry. It consists of measuring external environment of the human body. The result can be used to appraise body build, nutritional status and posture. The popularity and the importance of performance of sports have increased rapidly in the last two decades. The increase in popularity and importance is not only due to the fact that performance sports are glamorous and spectacular to watch. Sports perform multifarious functions for the human society. Basic anthropometric measurements include those for body mass (weight) stature (height) and skinfold thickness.

## RESEARCH METHODOLOGY

The data was collected on 30 women players undergoing training in the sports training centre of Lakshmbai National College of Physical Education Thiruvananthapuram and NSS College for Women, Niramankara on their anthropometric measurements and to its related variables were analysed using SPSS software. Descriptive statistics and one way Analysis of Variance (ANOVA) were calculated to find out significant differences between Anthropometric characteristics and its related variables of players at different playing positions. Scheffe's post hoc test was applied wherever the 'F' ratio showed significant values. The selections of variables are arm length (The linear distance between the Acromiale and Dactylion site) and Leg length (The vertical distance from the Iliospinale site to the standing surface). The investigator was well versed in the technique of measuring of anthropometric variables. She had a number of practical sessions under Dr. Joselet Charles (ISAK Level II measurer) Lncpe, Trivandrum. Descriptive statistics and one way analysis of variance (ANOVA) were calculated using SPSS and MS office Excel 2010.

## RESULTS AND REMONSTRATION

Descriptive statistics of selected anthropometric measurements of arm length and leg length variables of Kabaddi players according to their playing positions is presented in Table 1.

The high mean value of arm length right side right corner than arm length left side right corner, whereas in the leg length of right side right cover is greater than the

leg length of right side right cover. Analysis of variance of mean scores on anthropometric and somatotype variables of *Kabaddi* players according to their playing positions is presented in table.

From Table 1 it is observed that there were no significant differences among 5 playing positions on their body mass, leg length right side ( $F=1.30P>.05$ ), leg length Left side ( $F=1.33 P>.05$ ), significant differences were observed among 5 playing positions on their right arm length ( $F=3.03,P<.05$ ) was found significant ( $P<.05$ ), the scheffe's post hoc test was applied to test the significance difference between paired means on right arm length of players in different playing positions. Significance difference between paired means on right arm length of players of different playing positions has been presented in Table 2.

The difference between means of right corner with left corner and left cover showed significance difference (Right corner-left corner= $4.32, P<.05$ ), (Right corner-left cover= $4.31, P<.05$ ). Right corner with remaining playing positions show no significant difference (Right corner-right cover= $1.78, P>.05$ ) (Right corner-centre= $2.24, P>.05$ ). The difference between means of Left corner with remaining playing positions showed no significant difference (Left corner- Right cover = $2.23, P>.05$ ). (Left corner-Left cover= $1.42, P>.05$ ) (Left corner-Centre= $2.07, P>.05$ ). The difference between means of right cover with remaining playing positions showed no significant difference (Right cover-left cover= $2.53, P>.05$ ) (Right cover-centre= $.46, P>.05$ ). The difference between means of left cover and Centre showed no significant difference (Left cover-centre= $2.07, P>.05$ ). From Table 2 it is observed that there were significant differences among 5 playing positions on their left arm length. As F ratio (2.88) was found significant ( $p<.05$ ), the the scheffe's post hoc test was applied to test the significance difference between paired means on left arm length of players in different playing positions. Significance of difference between paired means on left arm length of players in different playing positions has been presented in Table 3.

The difference between means of right corner with Left corner showed significant difference (Right corner-left corner= $3.62, P<.05$ ) (Right corner-left cover =  $4.18, P<.05$ ). Right corner with other remaining playing positions showed no significant difference (Right corner-right cover= $1.48, P>.05$ ) (Right corner-centre= $2.04, P>.05$ ). The difference between means of left corner with

remaining sports groups showed no significant difference (Left corner-right cover=2.13,  $P>.05$ ) (Left corner-left cover=.56,  $P>.05$ ) (Left corner-centre=1.57,  $P>.05$ ). The

difference between means of right cover with remaining sports groups showed no significant difference (Right cover-left cover=2.70,  $P>.05$ ) (Right cover-centre=2.70,

**Table 1: Anthropometric measurement of arm length and leg length variables of *Kabaddi* players**

Variables	Group	N	Mean	Std. deviation	Minimum	Maximum
Arm length right side (cm)	Right corner	10	76.28	2.23	73.20	79.00
	Left corner	6	71.96	3.76	68.00	77.40
	Right cover	3	74.50	.50	74.00	75.00
	Left cover	6	71.96	3.57	65.80	75.00
	Centre	5	74.04	2.77	70.70	77.80
	Total	30	74.00	3.28	65.80	79.00
Arm length left side (cm)	Right corner	10	75.98	1.52	74.00	78.00
	Left corner	6	72.36	1.48	67.60	77.90
	Right cover	3	74.50	.43	74.00	74.80
	Left cover	6	71.80	3.27	66.00	74.60
	Centre	5	73.94	3.26	70.90	77.50
	Total	30	73.93	3.04	66.00	78.00
Leg length right side (cm)	Right corner	10	99.73	4.81	93.40	107.30
	Left corner	6	97.00	4.87	91.10	106.00
	Right cover	3	100.46	6.43	93.40	106.00
	Left cover	6	95.21	2.06	91.80	98.20
	Centre	5	98.02	3.54	93.00	102.00
	Total	30	98.07	4.48	91.10	107.30
Leg length left side (cm)	Right corner	10	99.99	4.60	95.55	107.60
	Left corner	6	97.00	5.31	90.50	106.70
	Right cover	3	100.26	5.89	93.70	105.10
	Left cover	6	95.48	1.90	92.20	98.00
	Centre	5	98.36	3.15	94.00	102.20
	Total	30	98.24	4.38	90.50	107.60

Table 1: Contd.....

**Table 1: Contd.....**

Variable	Variance	Sum of squares	Df	Mean square	F	Sig (P)
Arm length right side (cm)	Between groups	102.35	4	25.58	3.03*	.03
	Within groups	211.0	25	8.44		
	Total	313.39	29			
Arm length left side (cm)	Between groups	84.88	4	21.22	2.88*	.04
	Within groups	184.08	25	7.36		
	Total	268.96	29			
Leg length right side (cm)	Between groups	100.51	4	25.13	1.30	.29
	Within groups	481.86	25	19.27		
	Total	582.38	29			
Leg length left side (cm)	Between groups	97.83	4	2.46	1.33	.28
	Within groups	459.87	25	18.39		
	Total	557.71	29			

Table 2 : Significance of difference between paired means on right arm length of players in different playing positions			
Paired means		Mean difference	Significance (P)
Right corner (76.28)	Left corner (71.96)	4.32	.008*
	Right cover (74.50)	1.78	.361
	Left cover (71.97)	4.31	.008*
	Centre (74.04)	2.24	.172
Left corner (71.96)	Right cover (74.50)	2.53	.229
	Left cover (71.9)	1.42	1.00
	Centre (74.04)	2.07	.25
Right cover (74.50)	Left cover (71.96)	2.53	.229
	Centre (74.50)	0.46	.830
Left cover (71.96)	Centre (74.50)	2.07	.250

\* indicate significane of value at P=0.05

Table 3 : Significance of difference between paired means on left arm length of players in different playing positions			
Paired means		Mean difference	Significance
Right corner (75.98)	Left corner (72.36)	3.62	.016*
	Right cover (74.50)	1.48	.415
	Left cover (71.80)	4.18	.006*
	Centre (73.94)	2.04	.182
Left corner (72.36)	Right cover (74.50)	2.13	.277
	Left cover (71.80)	0.56	.721
	Centre (73.94)	1.57	.347
Right cover (74.50)	Left cover (71.80)	2.70	.172
	Centre (73.94)	0.56	.780
Left cover (71.80)	Centre (73.94)	2.14	.205

P>.05). The difference between means of Left cover and Centre no significant difference (Left cover-centre=2.14, P>.05). Similar work related to the present investigation was also carried out by Fox Edward *et al.* (1994); Gole (1978); Marfel *et al.* (2006) and Montagu (1960).

## REFERENCES

- Fox Edward, Richard, W. and Foss, I. Merrie** (1994). Physiology basis of exercise and sports, 5<sup>th</sup> Ed. Brown and Bench Mark Publishers.
- Gole, Y.A.** (1978). *Hand book on Kabaddi*, 1<sup>st</sup> Edition, Maharashtra State *Kabaddi* Association, M.S. India.
- Marfel, Jones, Tim, Olds Arthur and Lindsay, Carter Mike.** (2006). Tim International society for the advancement of Kinanthropometry.
- Montagu, M.S. Ashley** (1960). A Handbok of Anthropometry Thomas Springfield. ASINBOO7T2YSW1

Received : 30.08.2019; Revised : 01.10.2019; Accepted : 01.11.2019