

## ASSESSMENT AND COMPARISON OF SELECTED SKINFOLDS OF KABADDI PLAYERS PERTAINING TO DIFFERENT PLAYING POSITIONS



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### ABSTRACT

The study was conducted on selected Skinfolts (Chest, Abdominal and Thigh) on 40 State Level Kabbadi Players (10 from each playing position, i.e: Raiders, Blockers, All Rounder's and Corners) with the purpose to characterize Kabbadi Players of four Playing Positions on selected skinfolts and to compare the Kabbadi players of four different Playing Positions by their Skinfolts. Selected Skinfolts were measured by Harpenden Skinfold Caliper and was recorded in millimeters. To characterize Kabbadi Players of four Playing Positions on Selected skinfolts; descriptive statistics were used. To compare the Kabbadi players of four different Playing Positions by their Skinfolts, Analysis of Variance was employed at 0.05 level of significance. On the basis of results, following conclusions were drawn: No significant differences were found among the means of four playing positions i.e. Raiders, Corners, All Rounder's and Blockers in relation to Thigh Skinfold.

**Keywords:** Skinfolts, Kabbadi Players & Different Playing Positions.

### INTRODUCTION

Kabbadi is aptly known as the “game of the masses “due to its popularity, simple, easy to comprehend rules and public appeal. Kabbadi is a combative team game, played with absolutely no equipment, in a rectangular court, either out-door or in- door with seven players on the ground in each side. Each side takes alternate chances at offence and defense. The basic idea of the game is to score points by raiding into the opponent's court and touching as many defense players as possible without getting caught on a single breath (Rao. E. P., 2002). The use of Skinfold calipers in the performance of

‘Curiosity is the best Quality of a Good Researcher’

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Skinfold thickness measurements (from which are derived the estimates of body fat) has been well established and documented over the last 40 years.

These thickness measurements do not measure over all fat mass or its percentage directly but rely on validated equations that describe the relationship between measures of Skinfold fat as well as other body dimensions and the measured body density. Body fat percentage is determined from the estimate of body density. (Herpenden Skinfold Caliper manual, n. d.).

Body fat percentage or Skinfold thickness plays an important role in sports performance. Specific positions of play require different body composition, so this study is an effort to add new knowledge in the field of Kabbadi.

### **OBJECTIVE OF THE STUDY**

For the purpose of the study following two objectives were formulated:-

- To characterize Kabbadi Players of four Playing Positions on Selected skinfolds.
- To compare the Kabbadi players of four different Playing Positions by their Skinfolds.

### **DESIGN OF THE STUDY**

#### **Subjects:**

The subjects for the study were selected from different clubs. State level Kabbadi Players were selected. A total 40 male subjects were selected from each playing position, i. e. Raiders, Corners, All Rounder's and Blockers. Age of the subject was ranging between 17 to 24 years.

#### **Variables:**

Following three Skinfold measurement were selected:

- a) Chest Skinfold,
- b) Abdominal Skinfold and,
- c) Thigh Skinfold.

#### **Playing Positions:**

Following four playing positions of Kabbadi players were selected:

- a) Raiders,
- b) Corners,

- c) All Rounder's and,
- d) Blockers.

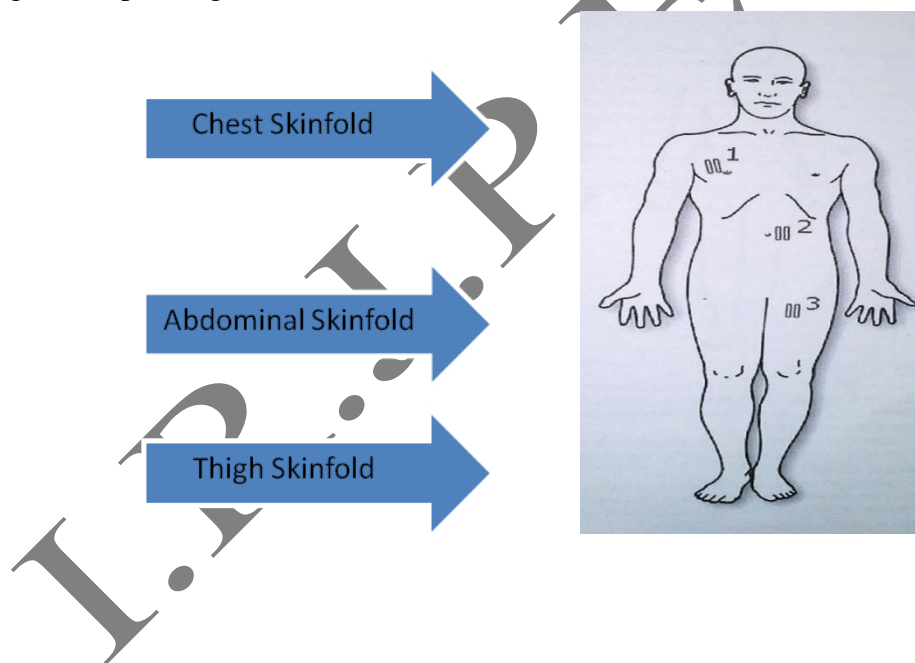
### TOOLS FOR DATA COLLECTION

To measure three skinfolds, i.e. chest, abdominal and thigh, Herpenden Skinfold Caliper was used and the measurements were recorded in millimeters.

For Chest skinfold, a diagonal fold was taken one half of the distance between the anterior auxiliary line and the nipple.

For abdominal skinfolds, vertical fold was taken at the lateral distance of approximately 02 cm from the umbilicus (02 cm to the side of the umbilicus).

For thigh Skinfold, vertical fold was taken on the anterior aspect of the thigh, midway between the hip and knee joints (on the front of the thigh halfway between the hip joint, where the leg bends when the knee is lifted, and the middle of the kneecap). The leg was kept straight and relaxed.



### STATISTICAL TECHNIQUE

- To characterize elite State level Kabbadi players to their standard human performance measure by Skinfold measurement, descriptive statistics were used.

- To compare four different playing positions (Raiders, Corners, All Rounder's and Blockers), One Way Analysis of Variance (ANOVA) was used and the level of significance was set at 0.05 level.

## FINDINGS AND CONCLUSIONS

**Table No: I**  
**Table showing the Descriptive Statistics of Kabbadi Players of Different Playing Positions in relation to Chest Skinfold**

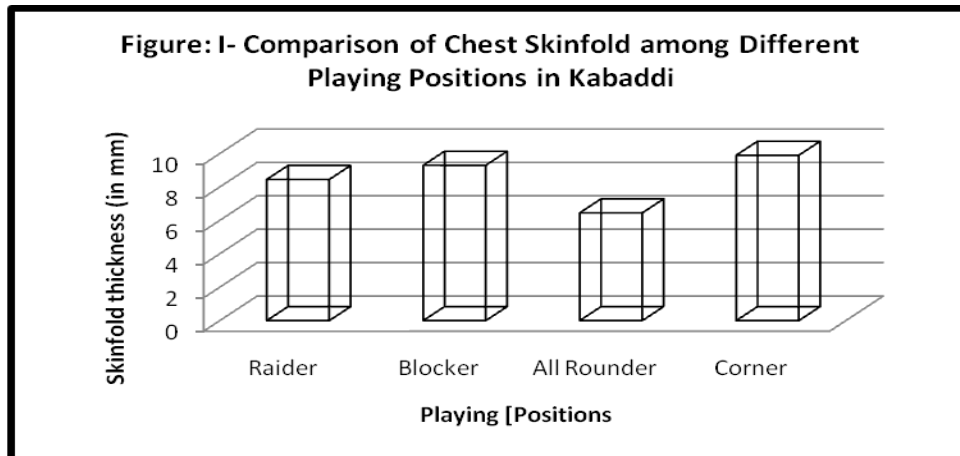
Measures	Playing Positions			
	Raiders	Blockers	All Rounder's	Corners
Mean	8.45	9.3	6.45	9.9
Standard Error	0.973110705	1.611072796	0.474048755	1.180395
Median	10	6.5	6	8.5
Standard Deviation	3.077246244	5.094659513	1.499073788	3.732738
Sample Variance	9.469444444	25.95555556	2.247222222	13.93333
Kurtosis	-1.70752912	-1.697974518	-0.102093982	-0.81389
Skewness	-0.572384148	0.523311888	0.985775564	0.482364
Range	7.5	13.5	4	11.5
Minimum	4	3.5	5	4.5
Maximum	11.5	17	9	16
Sum	84.5	93	64.5	99
Count	10	10	10	10

Table No-I revealed that chest Skinfold thickness for Raiders, Blockers, All Rounder's and Corners was found 8.45 mm, 9.3 mm, 6.45mm and 9.9 mm respectively.

**Table No: II**  
**Analysis of Variance for the Comparison of Chest Skinfold in Different Playing Positions**

Source of Variation	SS	Df	MS	F	P-value	F
Between Groups	68.025	3	22.675	1.757563	0.172727*	2.866266
Within Groups	464.45	36	12.90139			
Total	532.475	39				

Table No–II clearly revealed that no significant difference was found among the means of four different playing positions i.e. Raiders, Blockers, All Rounder’s and Corners) in relation to Chest Skinfold, since the calculated F- Value (1.757563) was found lower than tabulated value (0.172727).



**Table No: III**  
**Descriptive Statistics of Kabbadi Players of Different Playing Positions in Relation to Abdominal Skinfold**

Measures	Playing Positions			
	Raider	Blocker	All Rounder	Corner
Mean	14.05	14.85	11.05	17.35
Standard Error	1.786445882	2.173131381	0.917272527	1.520325258
Median	14	11.5	11	17
Standard Deviation	5.649237903	6.872044819	2.900670421	4.807690598
Sample Variance	31.91388889	47.225	8.413888889	23.11388889
Kurtosis	0.245649156	-1.431114441	-0.891456165	1.174109416
Skewness	0.45396982	0.550009427	0.247634604	-0.511476206
Range	19	19	8.5	16.5
Minimum	6	7	7.5	7.5
Maximum	25	26	16	24
Sum	140.5	148.5	110.5	173.5
Count	10	10	10	10

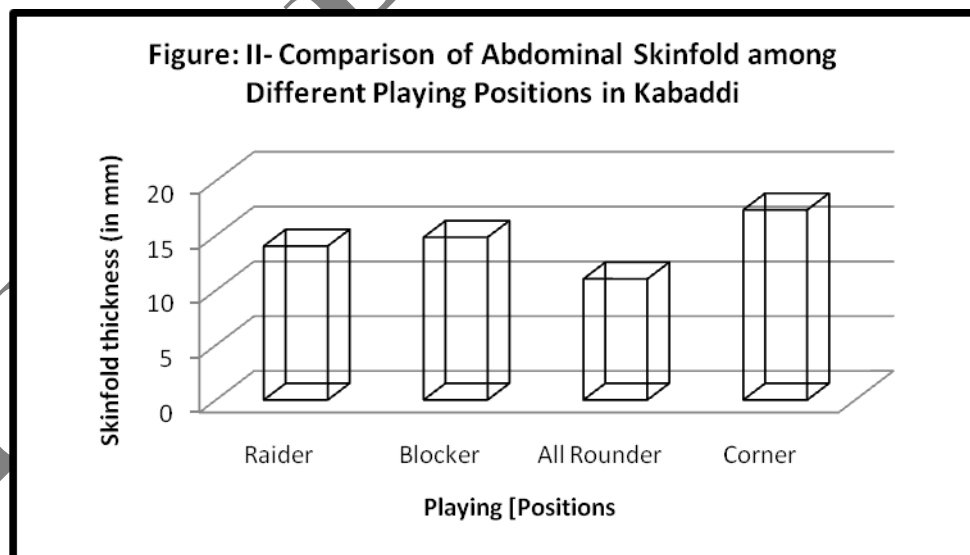
Table No-III revealed that Abdominal Skinfold thickness for Raiders, Blockers, All Rounder's and Corners, was found 14.05 mm, 14.85 mm, 11.05mm and 17.35mm respectively.

**Table No: IV**  
**Analysis of Variance for the Comparison of Abdominal Skinfold in Different Playing Positions in Kabbadi**

Source of Variation	SS	Df	MS	F	P-value	F
Between Groups	202.275	3	67.425	2.437048	0.080448	2.866266
Within Groups	996	36	27.66667			
Total	1198.275	39				

**\*Insignificant at .05 Level**

Table No - IV clearly revealed that no significant difference was found among the means of four different playing positions i.e. Raiders, Blockers. All Rounder Corners). In relation to Abdominal skinfolds, since the calculated F- Value (2.437048) was found lower than tabulated value.



**Table No: V**  
**Table showing the Descriptive Statistics of Kabbadi Players of Different Playing Positions in Relation to Thigh Skinfold**

Measures	Playing positions			
	Raider	Blocker	All Rounder	Corner
Mean	8.85	13.01	10.05	11.85
Standard Error	0.882074575	1.814843121	1.18895379	1.238390533
Median	8.5	12.25	10	13
Standard Deviation	2.789364723	5.73903786	3.759802	3.916134716
Sample Variance	7.780555556	32.93655556	14.13611111	15.33611111
Kurtosis	-0.425714996	0.024969087	1.22284868	-0.826115471
Skewness	0.468257397	0.582403657	0.86964669	-0.287290403
Range	9	19	13	12
Minimum	5	5	5	6
Maximum	14	24	18	18
Sum	88.5	130.1	100.5	118.5
Count	10	10	10	10

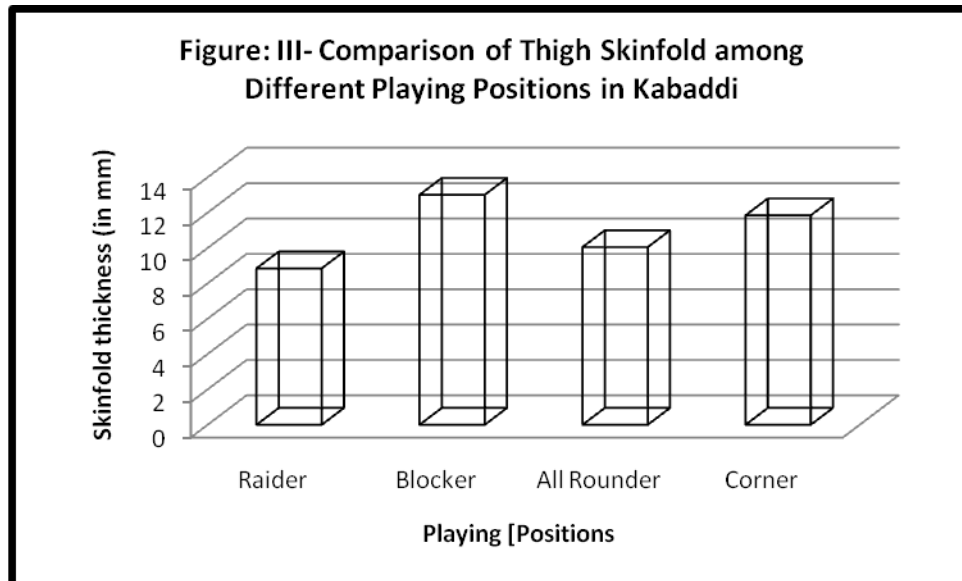
Table revealed that Thigh Skinfold thickness for Raiders, Blockers, All Rounder's and Corners, was found 8.85 mm, 13.01 mm, 10.05 mm and 11.85 mm respectively.

**Table No: VI**  
**Analysis of Variance for the Comparison of Thigh Skinfold in Different Playing Positions**

Source of Variation	SS	Df	MS	F	P-value	F
Between Groups	102.732	3	34.244	1.951522	0.138753	2.866266
Within Groups	631.704	36	17.54733			
Total	734.436	39				

Table No-VI clearly revealed that no significant difference was found among the means of four different playing positions i.e. Raiders, Blockers, All Rounder's and

Corners) in relation to Thigh Skinfold, since the calculated F- Value (1.951522 ) was found lower than tabulated value (0.138753).



## CONCLUSION

- Chest skinfolds thickness for Raiders, Blockers, All Rounder's and Corners was found 8.45 mm, 9.3 mm, 6.45mm and 9.9mm respectively.
- No significant difference was found among the means of four different playing positions i.e. Raiders, Corners, All Rounder's and Blockers) in relation to Chest Skinfold.
- Abdominal skinfolds thickness for Raiders, Blockers, All Rounder's and Corners, was found 14.05 mm, 14.85 mm, 11.05mm and 17.35mm respectively.
- No significant difference was found among the means of four playing positions i.e. Raiders, Corners, All Rounder's and Blockers) in relation to Abdominal Skinfold.
- Thigh skinfolds thickness for Raiders, Blockers, All Rounder's and Corners was found 8.85 mm, 13.01 mm, 10.05 mm and 11.85 mm respectively.
- No significant difference was found among the means of four playing positions i.e. Raiders, Corners, All Rounder's and Blockers) in relation to Thigh skinfolds.



## DISCUSSION ON FINDINGS

In relation to all the selected skinfolds thickness, i. e. Chest, Abdominal and Thigh of Male Kabbadi players, no significant difference was found in different playing positions i. e. Raiders, Blockers, All Rounder's and Corners. This might be due the reason that same type of body composition is required by Kabbadi players of different playing positions. Another reason might be the same type of Kabbadi training for players of all playing positions. Various studies has been completed to compare body composition among different age group (Dubey, P.O., Ghildyal, S., & Choudhary, R., 2009); age and gender (Singh, M., Venugopal, R. & Choudhary, R., 2013); in different categories of playing positions (Choudhary, R., Tiwari, S, Kumar. S. & Rai, V., 2012).

## REFERENCES

- Clark, H. H., & Clark, D. H. (1975). Research Process in Physical Education. Englewood Cliffs, New Jersey: Prentice Hall, Inc.
- Garrett, E. H. (2008). Statistics in Psychology and Education. Delhi: Surjeet Publications.
- Harpenden Skinfold Caliper Manual.(N.D)West Susexx: Baty International Ltd.
- Kumar, P.K and Choudhary, R. (2013). Incentive Motivation as Functions of Different Playing Positions in Kabaddi Players Participating in Intervarsity Kabaddi Championship of Gujarat State. International Research Journal on Physical Education Recreation and Sports Sciences.
- Rao, E. P. (2002). A Complete Hand Book on Kabaddi. Vizianagram: Jagdamba Publications (A.P).
- Thomas, J.R., & Nelson J.K. (2005). Research Method in Physical Activity. U.S.A: Champaign, IL: Human Kinetics Books.
- Verma, J. P. (2000). Sports Statistics. Gwalior: Venus Publications.
- Choudhary, R., Tiwari, S, Kumar. S. & Rai, V. (2012). Comparison of Selected Anthropometric Measurements and Body Composition of Fast and Spin Bowlers of Uttar Pradesh U-19 Cricket.
- Singh, M., Venugopal, R. & Choudhary, R. (2013). Assessment of Body Composition and Ponderal Index in Relation to Different age Groups of

University Male Employees. Indian Journal of Movement Education and Exercises Sciences (IJMEES), Bi-Annual Refereed Journal.

- Singh, M., Venugopal, R. & Choudhary, R. (2013). Differential Impact of Age and Gender on Total Body fat Percentage and their Interaction in Relation to University Employees. Journal of Physical Education an Sports Sciences.
- Dubey, P.O., Ghildyal, S., & Choudhary, R. (2009). Comparison of Skinfolts among Different Age Group Females. Indian Journal of Physical Education, Sports Medicine and Exercise Science.