

A Comparison of Kin-anthropometric Measures of Low and High Performers in Basketball

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Abstract

Background: The purpose of present study was to access Kin-anthropometric measures of low and high performer in Basketball.

Methods: In the present study, the subjects for data collection were collected from senior secondary schools of district Ropar (Punjab) of junior level. The sample consist of 70 junior level basketball players. To measure the Kinanthropometric measurements of juniour Basketball players, tools were used i.e. skinfold caliper, weighing machine and measuring tape.

Results: The result is significantly important. Low performer is due to high body fats less muscle mass in the calf. If we had increased the difference between the performance levels i.e. had we taken district level and state level performers, surely difference on kinanthropometric measurement would have been statistically significant.

Keywords: Kin-anthropometric, Low and High Performer and Basketball Players.

INTRODUCTION

Sports is now no more a hobby, it has become a full time profession. Modern sports, infact, compel athletes to take up sports competitions as a full time vocation besides making name and fame. Multi-disciplinary efforts are put together with the craze of taking human performance to its optimum possible level. Performance in certain events and activities has already reached to its breaking point; unless and until there is some miracle, increase in speed performance by 0.01 seconds seems to be a difficult and challenging task.

The participating competitors in sports at international level bring name, fame and laurels for their country and also raise their prestige. Now winning the competitions involves the national prestige as each nation strive to win a tournament in which they compete. There are certain nation districts which to project the superiority of their political ideology and sociopolitical system through spectacular achievements in the field of sports. They show their excellence by winning the maximum number of medals in all the international competitions.

Kin-anthropometric

The term was first used by Ross et al (1980) in the year 1972. It means the application of measurement to the study of human size, shape, proportion, compositions, maturation and gross function. The purpose is always to understand human movement in the field of growth, exercise, performance and nutrition. The word Kinanthropometry is derived etymologically from Greek words - Kineein meaning "A move" and Anthrepos meaning Man and matrecin meaning, "To measure". Kinanthropometry provides a convenient framework for the study of human body. It studies quantitative, interaction between human structure and human function.

Basketball

Basketball the game was borne in December 1891 at Springfield College, USA, is playing with skill, fitness, teamwork and strategy making it fast and thrilling sport. Player's body is found to be better fundamentalists. All rounder players with ability and skill in all phases of the game passing dribbling, shooting and rebounding.

Basketball game in modern days is observed as fast moving game. Modern day Basketball players are required to possess speed in various forms such as Sprinting speed, Reaction speed, Movement speed, Speed in thinking, Speed in decision making and Speed endurance to perform all movements without losing the speed throughout forty minutes duration of the game. The speed endurance required to be possessed by the players is found to be specific to the game. In order to know the specificity of the speed endurance required to be possessed by a modern day Basketball players, the movements performed by the players during the game with and without Basketball are to be identified.

Objective of Study

To compare the low and high performers of Basketball game with regard to selected Kin-anthropometric measures i.e. Age, weight, height, sitting height, arm length, elbow diameter, wrist diameter, femur bico. Dia., ankle diameter, upper arm circumference, fore arm circumference, thigh circumference, calf circumference, biceps skinfold, sub-scapula skinfold, thigh skinfold and calf skin fold.

METHODOLOGY

The Basketball players from senior secondary schools of district Ropar (Punjab) of junior level constituted the subject of the present study. The Measurements were taken of 70 senior secondary school boys. Out of 70 schoolboys, 35 were selected for high performance group and lowest 35 were selected for low performance group on the basis of field goal speed test performance.

Tools Used

- **Skinfold Caliper** - Skinfold caliper was used to measure skinfold thickness.
- **Weighing Machine** -The weight of the subject was measured with the help of portable weighing machine.
- **Measuring Tape** - The measurements was done with the help of measuring tape.

RESULTS AND DISCUSSION

Comparison of Kinanthropometric Measures of Low (N=35) and High (N = 35) Performers in Basketball

S.No.	Measurement	Low-Performers Mean	Low-Performers S.D.	High-Performers Mean	High-Performers S.D.	T- Value
1.	Age	21.13	3.52	21.25	4.09	.13
2.	Weight	63.81	6.94	64.80	6.35	.66
3.	Height	175.16	6.12	176.25	5.73	.78
4.	Sitting Height	89.00	2.92	90.23	2.91	1.79
5.	Arm Length	183.4	7.61	185.18	6.05	1.09
6.	Elbow diameter	6.85	0.33	6.86	.30	.13
7.	Wrist diameter	5.51	0.38	5.46	.22	.68
8.	Femur bico. dia.	9.16	0.38	9.26	.41	1.07
9.	Ankle diameter	6.96	0.37	6.94	.22	.27

10	Upper arm circum.	25.35	1.91	25.98	1.97	1.37
11	Fore arm circum.	25.20	1.12	25.29	1.19	0.33
12	Thigh circum.	49.64	2.56	50.19	2.53	.91
13	Calf circum.	33.92	1.92	34.45	2.14	1.10
14	Biceps skinfold	6.38	2.56	5.65	1.82	1.39
15	Suprailliac skinfold	9.85	2.75	9.30	2.54	.88
16	Thigh skinfold	11.47	3.65	10.33	3.78	1.29
17	Calf skinfold	12.83	15.01	10.34	4.14	2.29*

*Significant at .05 level

1. Age: Table shows that the mean values of age of high performers and low performers are almost the same. But there is a small difference in the favor of high performers. According to Sodhi (1990) growth is generally completed up to the age of 20th year.

2. Weight: The body weight is an important factor in the game of basketball. It is observed from the table that weight is in favour of high performers though not significant statistically. Sidhu and Anand (1971) have reported that sportsmen are taller and heavier than non-sportsmen.

3. Height: Body height is the main component, which influences the performance in the basketball game. It is observed from table that the low performers are poorer in height component than high performance. But this kinanthropometric measures are also not significant at any level of confidence. There is slight edge favoring the high performers.

4. Sitting Height: The average of sitting height is in the favour of high performers. But it is not significant statistically. This only shows that difference in high performance and low performance is too thin to be predicted on the basis of weight, height, sitting height or age. However, a trend is certainly perceivable.

5. Arm length: Arm span is most important factor in the game of basketball. It is observed from table that the average mean of arm span is in the favour of high performers but not too significantly.

6. Elbow Diameter: It is observed from table that the mean of elbow is in the favour of high performers but not significant.

7. Wrist Diameter: The average of wrist diameter is in the favour of low performers but not significant at any level.

8. Femur Bicondylar Diameter: It is observed from table that high performers are better in femur bicondylar diameter though not significantly.

9. Ankle Diameter: The average of ankle diameter is again in the favour of low performers but not significant at any level of confidence.

10. Upper Arm Circumstance: The average of upper arm circumference is in the favour of high performers but not significantly.

11. Fore Arm Circumference: The average of fore arm circumference in the favour of high performers but not found significant at any level.

12. Thigh Circumference: It is shown in table that average of thigh circumference is in the favour of high performers but not significant.

13. Calf Circumference: It is shown in table that calf circumference is in the favour of high performers but not significant at any level.

14. Biceps Skinfold: The average triceps skinfolds is in the favour of low performers but not significant at any level.

15. Suprailliac Skinfold: The average of Suprailliac skinfold is in the favour of low

performers but not significant.

16. Thigh Skinfold: It is shown in table that the average mean of thigh skinfold is in the favour of high performers but difference is not significant.

17. Calf Skinfold: It is shown in table that the average mean of calf skinfold is in the favour of low performers and this difference is significant at .05 level of confidence. This result is significantly important. Low performer is due to high body fats less muscle mass in the calf. If we had increased the difference between the performances levels i.e. had we taken district level and state level performers, surely difference on kinanthropometric measurement would have been statistically significant.

CONCLUSION

It has been seen that almost all measures except wrist diameter, ankle diameter, biceps, suprailliac, thigh which favour the low performers and others all are in favour of the high performers although the difference is very thin and significant only in the case of calf skinfold measures.

Since the difference between the winning teams and losing teams is always of a degree and not a kind, kinanthropometric measures cannot and do not show any significant difference. Had district level and state level players been compared, surely the body measures had made significant difference.

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