



Research Article

Available online at www.journal-advances-developmental-research.com

Journal of Advances in Developmental Research

ISSN: 0976-4704 (Print), e-ISSN: 0976-4844 (Online)

Relationship of Anthropometric Variables to Basketball Playing Ability

Aman Singh Sisodiya^{1*} and Monica Yadav²

^{1*}Corresponding author, Director of Physical Education, Jai Narain Vyas University, Jodhpur, Rajasthan.
Email- aman.sisodia@rediff.com

²Lecturer, Dev International College, Alwar, Rajasthan

Abstract

The purpose of the study was to determine the relationship between anthropometric measurements to the playing ability in basketball (jonshon basketball test). 50 male and 50 female basketball national level players of Rajasthan state were selected as subject for the purpose of this study. Present study exhibited the insignificant relationship with field goal speed test (basketball playing ability) and with throw for accuracy at the chosen level but the value of product moment correlation is quite higher which may be understood that the size of body may contribute to basketball playing ability when combined with other variables. Finding of study show the insignificant relationship between body weight and basketball playing ability which may be attribute to the fact that basketball players do not require bulky body which may hidden the performance of the players. The findings reveal that insignificant relationship exist between let length and Field ball speed test and dribble test (basketball playing ability) no significant relationship was found with throw ball accuracy. It is because of the fact that a leg with a good length but without explosive strength to be contributing factors for speed and jumping ability which is required for performing with in basketball game. In case of field goal speed test, throw for accuracy of playing ability there was a significant difference between the Thigh girth (anthropometric measurement) as the calculated value (20.1864)(0.2445) was greater than the table value (0.195) at 0.05 level of significance and no significant relationship was found with dribble test. In case of field goal speed test, throw for accuracy of playing ability there was a significant difference between the calf girth (anthropometric measurement) as the calculated value (0.3440)(0.2490) was greater than the table value (0.195) at 0.05 level of significance and no significant relationship was found with dribble test. In case of field goal speed test and dribble test of playing ability there was a significant difference between the Arm girth (anthropometric measurement) as the calculated value (0.4096)(0.4685) was greater than the table value (0.195) at 0.05 level of significance and no significant relationship was found with throw for accuracy. Arm with a good length can be contributing factor for some of the basketball skill such as long passes; shooting etc. but without good strength can be contributing factor for basketball playing ability. The data was analyzed by using Pearson's product moment correlation (r) for assessing the relationship of basketball playing ability to selected variable of anthropometric measurement.

Key words: Jonshon basketball test, rajasthan, goal speed test, dribble test, throw for accuracy

Introduction

Sports are not only art or religion or moral ideals. But with all of these, it shares

values, which are at least humanly high and always highly human. Sports are a wonderful world. Those who are not active in sports need to realize what they are missing. Those who are active must be encouraged to remain so. Sports

should become an integral part of everyone's life, for sport truly is a wonderful world. Sport has emerged into highly organized activity of human society. Play is very important for preserving better growth and development of the organism. Modern age is characterized by the progress, which is being made in all fields. Every individual is engaged in a race to excel others. As in other fields, it is equally true in the field of games and sports. Scientific investigations into performances of sportsmen are playing an increasingly important role in the training of athletes in a scientific way to attain excellence in performances in different spheres of sports. Athletes concentrate on the development of speed, strength, endurance, agility and flexibility, etc. as a part of their preparation in their respective sports. It is equally the concern of all coaches and physical education teachers to build up physical potentialities in their athletes. In modern sports the anthropometric measurements and their relationship with various motor traits are an important guide for the coaches and athletes themselves for making training schedules and for classification of students into different groups according to their age, ability etc. Body size and limb segment length relate to difference in body and limb mass and to the nature and placement of muscular attachment. Meteorically overcoming the variability in segmental and total body mass, in addition to overall height and length of segments, is a perceptual process of motor control. The student and the teacher must understand that this is unique for each individual and therefore the standard stimulating role of sporting achievement lies in this important factor. If we look into the factors of basketball game some of the important qualities that a potential basketball players need are his/her aerobic potentially, anaerobic potentiality, body composition and some of the selected strength parameters. A high level execution of basketball skill not only requires certain physical qualities (speed, explosive power, agility etc.) but also a good physical structure. One aspect of scientific approach which is receiving greater attention is that of the structural measures, lengths, breaths and girths of body and body composition to achieve optimum playing weight. In modern sports, the anthropometric measurements and their relationship with various physical fitness traits are an important guide for the coaches and athletes themselves for making training schedules and for classification of students into

different groups according to their ability.

Experimental

Selection of subjects

For the purpose of this study 100 university and national level basketball players belonging to the age group of 18-25 year were selected following procedures of random selection. Since the subjects had been undergoing training for a considerable period there for it was considered that they possess good level of technique of espionage.

Collection of data

The data collected on 50 male and 50 female basketball national level players of Rajasthan India, who attended daily basketball match practice period on Johnson Basketball test along with anthropometric measurement and selected physical variable was examined by Pearson's product moment co-relation to find out the relationship of basketball playing ability to each of these variable separately.

The criterion measures chosen were

1. Number of Basket by layup shot made in 30 seconds. The score recorded was one point for each basket counted.
2. Total point scored in ten trail by throwing the ball at target made of three rectangles their sizes are 60"x40", 40"x25" and 20"x10".
3. Number of stools that the subject passes in 30 seconds using zigzag dribbling, one point was awarded for each stool crossed.

Results and Discussion

Relationship of selected anthropometric measurement to the playing ability

The data obtain on each of speed strength independent variable of selected physical and anthropometric variable, were co-related with the

criterion variable Johnson basketball test in order to find out the relationship between the dependent variable. The analysis of data pertaining to these is presented in Table -1.

Table 1. Anthropometric measurements studied

S. No.	Motor traits	Tests
1	Height	Vertical Scale
2	Weight	Weighting Machine
3	Fore leg length	Steel tape
4	Thigh girth	Steel tape
5	Calf girth	Steel tape
6	Arm length	Steel tape
7	Arm girth	Steel tape

Table 2. Relationship of anthropometric measurement (height) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.3628*
2	Throw for Accuracy	0.09829
3	Dribble Test	0.4079*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with degree of freedom is 0.195. The analysis of data in Table 2 indicates that height has significant relationship, with field goal speed test ($r=0.3628$), dribble test ($r=0.4079$). No significant relationship was found with Throw for Accuracy.

Table 3. Relationship of anthropometric Measurement (weight) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.2924*
2	Throw for Accuracy	0.2058*
3	Dribble Test	0.3650*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195. The analysis of data in Table 3 indicates that weight has significant relationship, with field goal speed test ($r=0.2924$), Throw for accuracy ($r=0.2058$) and dribble test ($r=0.3650$).

Table 4. Relationship of anthropometric Measurement (leg length) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.4319*
2	Throw for Accuracy	0.1380
3	Dribble Test	0.5870*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195. The analysis of data in Table 4 indicates that leg length has significant relationship, with field goal speed test ($r=0.4319$), and dribble test ($r=0.5870$). No significant relationship was found with throw for accuracy.

Table 5. Relationship of anthropometric Measurement (thigh girth) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	20.1864*
2	Throw for Accuracy	0.2445*
3	Dribble Test	0.0210*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195. The analysis of data in Table 5 indicates that thigh girth has significant relationship, with field goal speed test ($r=20.1864$), and Throw for accuracy ($r=0.2445$). No significant relationship was found with Dribble Test.

Table 6. Relationship of anthropometric Measurement (calf girth) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.3440*
2	Throw for Accuracy	0.2490*
3	Dribble Test	0.1661

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195. The analysis of data in Table 6 indicates that calf girth has significant relationship, with field goal speed test ($r=0.3440$), and throw for accuracy ($r=0.2490$). No significant relationship was found with Dribble Test.

Table 7. Relationship of anthropometric Measurement (arm girth) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.4096*
2	Throw for Accuracy	0.1434
3	Dribble Test	0.4685*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195.

The analysis of data in Table 7 indicates that arm girth has significant relationship, with

field goal speed test ($r=0.4096$), and dribble test ($r=0.4685$). No significant relationship was found with throw for accuracy.

Table 8. Relationship of anthropometric Measurement (arm length) with Johnson basketball (basketball playing ability)

S. No.	Variable correlated	'r' value
1	Field goal Speed Test	0.5213*
2	Throw for Accuracy	0.2925*
3	Dribble Test	0.7447*

N=100 *Significant at 0.05 Level

The value 'r' required to be significant at 0.05 level of confidence with freedom is 0.195. The analysis of data in Table 8 indicates that arm length has significant relationship, with field goal speed test ($r=0.5213$), Throw for accuracy ($r=0.2925$) and dribble test ($r=0.7447$).

The analysis of data revealed that there are significant relationship between anthropometric measurement and field goal speed test, throw for accuracy, dribble test; anthropometric measurement's allows carrying out different movements with desired pace in a synchronies way the anthropometric test involves much of running with quick lay up shot end rapid directional changes as like in dribble test.

The analysis of data revealed that there are significant relationship between some of the selected anthropometric variables with the playing ability performances of the limbs saves. Extra expenditure of energy and attributed to the advantage to the stride length .The individual to has good height and leg length naturally is arm length will be mare. The body weight of a individual may help him to incited movement

Therefore in may be logically accepted that those who are tall and heavy athletes as well as having longer upper limbs and longer lower extremities could have performed better on these items. More ever many students have also shown that tall athletes have advantageous position oven the shorter athletes. Longer stride depends upon the leg length of an individual therefore. Those with long limbs could have advantage in running event significant relationship between playing ability and leg

length may be attributed to this reason. The significant relationship of arm length may be contributed to the fact that while passing and throwing the basket ball with longer upper limbs have greater ability to maintain contact and develop with the ball through greater distance to his at proper target. This result can be substantiated with matheu's study.

Besides weight, height, Leg length and arm length also contribute to the playing ability. Better thigh girth may be constructed to have greater muscle mass and in turn greater strength. Therefore performance in lay up shot was probably better.

References

- Allen D. Phillips and James E. Hornak 1979. *Measurement and Evaluation in Physical Education*. John Willey and Sons, New York
- Batty E. 1970. *Soccer Coaching the Modern Way*. Trend & Co. Ltd., London Latimer
- Chodudhury SC and Sinha DB. 1979. *Intermediate Physics* Modern Book Agency Pvt. Td., Calcutta
- Hooks G. 1965. *Application of weight training to Athletics*. N.J. & Prentice Hall inc., Englewood Cliffs
- Huse GJ and Irwin 1966. *Modern Physical Education*. Holt Rise Hart and Winston Inc., New York
- Harold MB and Rosemarry Mc G. 1979. *A Practical Approach to measurement in Physical Education*. Philadelphia Lea Abiger
- Matveyev L. 1981. *Fundamental of Sports Training*. Progress Publishers, Mascow
- Singh H. 1984. *Sports Training: General Theory and Methods*. NS-NIS, Publication, Patiala
- Sodhi HS. 1991. *Sports Anthropometry*. Punjab Publishing House, Patiala