Analysis of predominance of physical anthropometric variables and playing ability among university women basketball players

1M.Sathya, 2A.Mehaboobjan

1Research Scholar, Department of Physical Education, Bharathiyar University, Coimbatore, Tamilnadu, India.
2Professor of Head Department of Physical Education, Bharadhidasan University, Trichirapalli, Tamilnadu, India.
inijasaravanan@gmail.com

Abstract : **The purpose of the study was to investigate the relationship between physical anthropometric Variables and basketball playing ability among University Women basketball players. The study was conducted on 100 women basketball players from Tamilnadu, who participated in the inter university basketball tournament and their age ranges from 18-25 years. The investigator analysed the relationship between basketball playing ability with physical, anthropometric variables. The study concluded that there was a significant relationship between criterion and independent variables.**

Key words: **basketball playing ability, physical variables (speed, endurance) anthropometric variables (standing height, arm length) fundamental skills (dribbling and dibble and shoot).**

Introduction

Evolution of women basketball dates long back. It has come a long way since Dr. James Naismith invented the game in Springfield Massachusetts in 1891. Less than a hundred years later girls' basketball players can dunk and play the game with a skill-set that rivals the men's game. In spite of having decades of timelines, the traditional method of identifying, selecting and coaching players based on physically physiologically anthropometrically has not lost its significance. This is because the present day competitive sport uses notational coaching system.

In practical applications, these results may help the coaches to accurately design training programs to reflect the importance of having different performance indicators combined with specific conditioning programs to win over the win –lose situations during game play. The components which form the foundation of a highly skilled game which doesn't showcase directly but influences every movement of a basketball player were selected as variables for the study. So the researcher was interested in testing the physical and anthropometrical development along with the basketball skill. Some of the variables chosen are very easy and affordable to test even by the rural area people. So that physical educators can make use of this to select players and also monitor their development.

Statement of the problem

The study under investigation was intended to predict the playing ability from selected physical, anthropometric variables and fundamental skills of university women basketball players. It was also proposed as a corollary to determine the relationship between each selected predictor variable and independent variable and independent variables of inter university women basketball players.

Hypothesis

It was hypothesised that there would be a significant relationship between the selected criterion variables and the predictors of university women basketball players.

Significance of the study

1. The results and findings of this study might provide criteria for analysing and classifying the players.
2. The findings of this study might be used as screening tool in selecting potential players in basketball.

Methodology

Based on the back ground experience the investigator gained through review of various related literature the following methodology was adopted, for the conduct of the study 100 women basketball players were selected from various universities of Tamilnadu who fell in the age range 18-25. The physical variables speed and endurance were tested by 50 meters dash and cooper test respectively. The anthropometric variables standing height and arm length were tested using stadiometer and measuring tape respectively. The fundamental skills dribbling and dribble and shoot were tested using Knox basketball test.

Statistical Analysis

To find out the relationship between selected independent and dependent varibles simple, multiple and partial correlations were analysed at 0.05 level of confidence.

Computation of coefficient of correlation

Table -I

Inter Correlation Matrix Among Selected Variables

Variables	Basketball Playing Ability	Variables	Basketball Playing Ability
Speed	0.366*	Arm length	0.386*
Endurance	0.369*	Dribbling	0.367*
Standing height	0.452*	Dribble and shoot	0.489*

*significant r0.05 (98)=0.197.

Results of coefficient of correlation

Table I shows that the obtained coefficient of correlation between speed and basketball playing ability was 0.366, endurance and basketball playing ability was 0.369, standing height and basketball playing ability was 0.452, arm length and basketball playing ability was 0.386, dribbling and basketball playing ability was 0.367, dibble and shoot and basketball playing ability was 0.489. The obtained correlations were significant at 0.05 level of confidence for 98 degrees of freedom.

Computation of Multiple Correlations

Table II

Relationship Between Selected Independent And Dependent Variables

Dependent variable	Independent variable	Obtained r
Basketball playing ability	Speed, Endurance, Standing Height, Arm Length, Dribbling, Dribble and Shoot	0.720

*Significant r 0.05(93) = 0.353

Results of Multiple Correlations

Table II reveals that the r1.234567 value of 0.353 was tabulated value for significance at 0.05 levels with 93 as degrees of freedom. The obtained r1.234567 was significant at 0.05 level of confidence. It was clear that there was some relationship between basketball playing ability and speed, endurance, standing height, arm length, dribbling, dribble and shoot in the significant level.

Computation of Partial Correlation

Further, to discuss the predominance among the combined effect of speed, endurance, standing height, arm length, dribbling, dribble and shoot and the playing ability, the partial correlation was analysed.

Table III

Relationship Between The Selected Independent Variables And Dependent Variable Using Partial Correlation.

Dependent variable = basketball playing ability			
Independent Variables	**Partial 'r'**	**Independent Variables**	**Partial 'r'**
Speed	$r_{12.34567}$= 0.249*	Arm length	$r_{15.23467}$= 0.263*
Endurance	$r_{13.24567}$= 0.218*	Dribbling	$r_{16.23457}$= 0.280*
Standing height	$r_{14.23567}$= 0.324*	Dribble and shoot	$r_{17.23456}$ = 0.348*

*significant r 0.05(98) = 0.197

Results of Partial Correlation

Table III shows the obtained partial correlation was significant at 0.05 level of confidence. The results of the study showed that the correlation between basketball playing ability and speed was 0.366 when endurance, standing height, arm length, dribbling and dribble and shoot were partially out, the correlation decreased to ($r_{12.34567}$) 0.249. Thus the speed has some value accounted for the basketball playing ability. The simple correlation between basketball playing ability and endurance was 0.369. When speed, standing height, arm length, dribble and shoot were partially out, the correlation declined to ($r_{13.24567}$) 0.218. Thus the endurance has some value accounted for the basketball playing ability. The

correlation between basketball playing ability and standing height is 0.452. When speed, endurance, arm length, dribbling, dribble and shoot were partialled out, the correlation declined to ($r_{14.23567}$) 0.324. Thus standing height had some value accounted for basketball playing ability. The correlation between playing ability and arm length was 0.386. when speed, endurance, standing height, dribbling, dibble and shoot were partially out, the correlation reduced to 0.236. Thus arm length had some value accounted for basketball playing ability. The correlation between basketball playing ability and dribbling was 0.367. When speed, endurance, standing height, arm length and dribble and shoot were partially out, the correlation declined to 0.280. Thus dribbling had some value accounted for the basketball playing ability. The correlation between basketball playing ability and dribble & shoot was 0.489. When speed, endurance, standing height, arm length and dribbling were partialled out, the correlation declined to 0.348. Thus dribble and shoot had a value accounted for the basketball playing ability.

Discussion on Hypothesis

The hypothesis stated that there would be a significant relationship between dependent (criterion) variable and the independent variables. The results of the study indicate that there was a significant relationship between dependent variable and independent variables. Hence the hypothesis was accepted at 0.05 level of significance.

Conclusion

The findings of this study shows that there was a significant relationship between basketball playing ability and physical variables such as speed and endurance, anthropometric variables such as standing height and arm length, and fundamental skills such as dribbling and dribble & shoot. There was some relationship between basketball playing ability and combined effect of speed, endurance, standing height, arm length, dribbling, dribble & shoot. Moreover, dribble & shoot, standing height and arm length have influenced more individually to this relationship. The results of the findings of ths study might provide criteria for selecting potential players in basketball.

References

Anthropometric, physiological and maturational characteristics in selected elite and non-elite male adolescent basketball players .J Torres-Unda, I Zarrazquin, J Gil, F Ruiz - Journal of sports, 2013 - Taylor & Francis

Physical demands on young elite European female basketball players with special referenceto speed, agility, explosive strength, and take-off power- F Erculj, M Blas, M Bracic - The Journal of Strength, 2010 - journals.lww.com

Anthropometric and performance measures for the development of a talent detection and identification model in youth handball. H Mohamed, R Vaeyens, S Matthys… - Journal of Sports …, 2009 - Taylor & Francis

Relationship Between Athletic Performance Tests and Playing Time in Elite collegeBasketball Players.JR Hoffman, G Tenenbaum, CM Maresh… - The Journal of …, 1996 - journals.lww.com

