



CORRELATION BETWEEN SELECTED PHYSICAL AND PHYSIOLOGICAL VARIABLES WITH PLAYING ABILITY AMONG COLLEGE LEVEL MALE BASKETBALL PLAYERS

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ABSTRACT

The purpose of the study was to correlate the playing ability in basketball from selected physical and physiological variables among college level male basketball players. To achieve the purpose two hundred and seventy nine Basketball players were randomly selected from various colleges in Tamilnadu state, India and their age ranged from 18 to 25 years. The subjects had past playing experience of at least three years in basketball and only those who represented their respective college teams were taken as subjects. As the performance is concerned, the physical and physiological variables play a vital role in overall performance. The researcher reviewed number of various journals, books, e-resources, unpublished theses, dissertations and coaching manuals in which they found that the standard skills of basketball may have relationship with selected physical and physiological variables. Based on these observations, the investigator selected the following independent variables for this study. The physical and physiological variables namely – Speed, Agility, Balance, Co-ordination, Strength Endurance, Muscular Endurance; Physiological variables namely – Peak Expiratory Flow Rate, Vital Capacity, Vo2 Max, Anaerobic Power and Resting Heart Rate. The playing ability is the dependant variable. It was taken as the performance factor, which was subjectively assessed by three qualified basketball coaches. The inter - relationship among the selected physical and physiological variables and basketball playing ability, were computed by using Pearson's product-moment correlation coefficients. The results revealed that an Inter – relationship exists significantly between the physical and physiological variables among male inter - collegiate basketball players.

KEYWORDS: Correlations, Physical, Physiological, Basketball.

INTRODUCTION

The basketball is a ball game played by two teams of 5 players, plus 7 substitutes in each team. The players may pass, throw, roll or dribble the ball. The main aim of a basketball player is to obtain points by putting the ball into the basket of the opponent team's court. A goal is considered when the ball enters into the basket from above and passes through or remains in the net. In case score of both the teams are equal at the end, extra periods of 5 minutes each are provided to break the tie. The match is won by the team scoring greater number of points, or when the opponent team refuses to play, or declared winner by referee due to any other reason. The main goal of tactics is to determine the means, methods and actions of play against a particular opponent. Thus the player's tactical actions lie essentially in the continuous solving of tasks which unfold during the constantly changing situations of play in attack and defense. The game of basketball involves much footwork and body balance. It is therefore, important that it should be mastered. Much time has, therefore to be devoted towards this technique. These are elementary steps but lay the foundation of a solid game structure. Without this, a player will be far from success.

Body balance has to be maintained and footwork is necessary whether he plays offensively or defensively. In the game the player has to pick up speed or slow down abruptly. He has also to take turns move around and pivot. And in all these he has to keep his balance. The weight has always to be directed towards his base, the feet.

METHODOLOGY

The purpose of the study was to correlate the playing ability in basketball from selected physical and physiological variables among college level male basketball players. To achieve the purpose two hundred and seventy nine Basketball players were randomly selected from various colleges in Tamilnadu state, India and their age ranged from 18 to 25 years. The subjects had past playing experience of at least three years in basketball and only those who represented their respective college teams were taken as subjects. As the performance is concerned, the physical and physiological variables play a vital role in overall performance. The researcher reviewed number of various journals, books, e-resources, unpublished theses, dissertations and coaching manuals in which they found that the standard

skills of basketball may have relationship with selected physical and physiological variables. Based on these observations, the investigator selected the following independent variables for this study. The physical and physiological variables namely – Speed, Agility, Balance, Co-ordination, Strength Endurance, Muscular Endurance; Physiological variables namely – Peak Expiratory Flow Rate, Vital Capacity, Vo2 Max,

Anaerobic Power and Resting Heart Rate. The playing ability is the dependant variable. It was taken as the performance factor, which was subjectively assessed by three qualified basketball coaches. The inter - relationship among the selected physical and physiological variables and basketball playing ability, were computed by using Pearson' product-moment correlation coefficients.

RESULTS

TABLE – I
DESCRIPTIVE STATISTICS OF SELECTED VARIABLES AMONG COLLEGE LEVEL BASKETBALL PLAYERS

S.No	Variables	Range	Minimum	Maximum	Mean	SD (±)
1	Speed	0.30	6.80	7.10	6.93	0.08
2	Agility	1.32	10.07	11.39	10.75	0.37
3	Balance	5.94	39.06	45.00	42.37	1.86
4	Co-ordination	11	18	29	24.22	2.89
5	Strength Endurance	5	15	20	17.56	1.29
6	Muscular Endurance	13	30	43	36.45	3.92
7	Peak Expiratory Flow Rate	99	301	400	352.24	27.12
8	Vital Capacity	0.50	3.10	3.60	3.33	0.15
9	Vo2 Max	10	48	58	52.26	2.91
10	Anaerobic Power	286	1199	1485	1331.92	88.54
11	Resting Heart Rate	3	68	71	69.25	0.90
12	Playing Ability	3.00	6.00	9.00	7.22	0.99

Table – I showed the descriptive statistics – Range, Minimum, Maximum, Mean and Standard deviation of physical and physiological variables and playing ability of inter collegiate basketball Players.

TABLE – II
INTER-CORRELATION OF SELECTED VARIABLES WITH THE PLAYING ABILITY OF COLLEGE LEVEL BASKETBALL PLAYERS

S.No	C.R	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	X ₁₁
X ₁	0.06	1										
X ₂	0.68**	0.39**	1									
X ₃	0.22*	0.03	0.03	1								
X ₄	0.91**	0.66**	0.08	0.04	1							
X ₅	0.14*	0.13	0.06	0.03	0.02	1						
X ₆	0.16*	0.21**	0.08	0.14*	0.02	0.08	1					
X ₇	0.08	0.21**	0.01	0.24**	0.08	0.09	0.14*	1				
X ₈	0.01	0.08	0.02	0.11	0.10	0.01	0.14*	0.08	1			
X ₉	0.13*	0.09	0.19*	0.22**	0.20**	0.04	0.03	0.06	0.04	1		
X ₁₀	0.004	0.17*	0.01	0.17**	0.02	0.03	0.11	0.09	0.24**	0.19**	1	
X ₁₁	0.05	0.12*	0.25**	0.24**	0.02	0.15*	0.13*	0.10	0.10	0.05	0.01	1

It was evident from the Table – II that there was significant relationship between Basketball playing ability (CR) and agility (X₁), balance (X₂), co-ordination (X₃), strength endurance (X₄), muscular endurance (X₅),

vo2 max (X₈), in each variables separately. The result proved that the selected variables agility (r = 0.68), balance (r = 0.22), co-ordination (r = 0.91), strength endurance (r = 0.14), muscular endurance (r = 0.16) and

vo2 max ($r = 0.13$), were significantly correlated with the basketball playing ability were greater than the required table 'r' value of 0.13 to be significant at 0.05 level. And there was no significant relationship between basketball playing ability and peak expiratory flow rate ($r = 0.08$), vital capacity ($r = 0.01$), anaerobic power ($r = 0.004$), resting heart rate ($r = 0.05$).

CONCLUSION

1. The results revealed that an Inter – relationship exists significantly between the physical and physiological variables among male inter - collegiate basketball players.

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