



Correlation between Selected Anthropometric and Physical Variables with Playing Ability among College Level Male Volleyball Players

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Abstract

The purpose of the study was to correlate the playing ability in volleyball from selected anthropometrical and physical variables among college level male volleyball players. To achieve the purpose two hundred and sixty one Volleyball 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 volleyball and only those who represented their respective college teams were taken as subjects. As the performance is concerned, the anthropometrical and physical 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 The researcher reviewed number of various journals, books, e-resources, unpublished theses, dissertations and coaching manuals in which they found that the standard skills of volleyball may have relationship with selected anthropometrical and physical variables. Based on these observations, the investigator selected the following independent variables for this study. The anthropometrical variables namely – standing height, body weight, arm length, leg length, calf girth, thigh girth; physical variables namely – speed, strength, agility, flexibility. The playing ability is the dependant variable. It was taken as the performance factor, which was subjectively assessed by three qualified volleyball coaches. The inter - relationship among the selected variables and volleyball playing ability, were computed by using Pearson 'product-moment correlation coefficients. The results revealed that an Inter – relationship exists significantly between the anthropometrical and physical variables with playing ability among male inter - collegiate volleyball players.

Keywords: Correlation, Anthropometrical, Physical, Volleyball.

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Introduction

Sport is an inspirable component of the physical education system. In the modern age, sports and games occupy a very prominent and significant position in people's lives and indeed in every field of life. Research trends help the research scholar define the real topic of practise, i.e., what are the focus areas, what has been done, the study of trends shows the exact picture of research in a subject or discipline. It also seeks to answer the questions, like what the questions are the strength and weakness. For life and the best survival in physical education, study is important for information, is no exception and must keep itself updated to meet the needs of modern times. Study is the cornerstone of education that is needed to keep the topics current. Physical education is an academic topic and we must keep it current as well, so that the study can trace patterns in order to react. Predicting the future is one of the finest research ventures. Prediction plays a critical role in quality analysis and improvement.

Volleyball is an intricate game with basic abilities. It has also shown in recent years that there is a trend in the adoption of technique, tactics and physical performance by volleyball payers. Volleyball belongs to sport activities in which anthropometric characteristics of its participants influence the level of sport performance. It was established that volleyball players compared to most other athletes have distinctive anthrop-morphological characteristics (Jankovic et al. 1995). Volleyball players require well-developed muscular strength, power and endurance, speed, agility, and flexibility, and have a high level of jumping ability, fast reaction time and swift movements. Lower body power, speed, and agility are important indicators of volleyball performance.

Methodology

The purpose of the study was to correlate the playing ability in volleyball from selected anthropometrical and physical variables among college level male volleyball players. To achieve the purpose two hundred and sixty one Volleyball 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 volleyball and only those who represented their respective college teams were taken as subjects. As the

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height, body weight, arm length, leg length, calf girth, thigh girth; physical variables namely – speed, strength, agility, flexibility. The playing ability is the dependant variable. It was taken as the performance factor, which was subjectively assessed by three qualified volleyball coaches. The inter - relationship among the selected variables and volleyball playing ability, were computed by using Pearson’ product-moment correlation coefficients.

Result

Table 1. Descriptive statistics of selected variables among college level volleyball players

S.No	Variables	Minimum	Maximum	Range	Mean	SD (±)
1	Standing Height	1.63	1.87	0.24	1.76	0.05
2	Body Weight	58.50	78.80	20.30	68.99	5.99
3	Arm Length	70.00	88.50	18.50	78.93	5.53
4	Leg Length	89.10	118.00	28.90	104.55	7.00
5	Calf Girth	30.10	38.90	8.80	35.20	2.77
6	Thigh Girth	40.20	77.60	37.40	57.65	11.10
7	Speed	6.80	7.10	0.30	6.93	0.08
8	Strength	45.80	63.86	18.06	56.01	3.28
9	Agility	10.07	11.39	1.32	10.75	0.37
10	Flexibility	36.60	48.80	12.20	42.55	3.03

Table – 1 showed the descriptive statistics – Range, Minimum, Maximum, Mean and Standard

deviation of anthropometrical variables and playing ability of inter collegiate volleyball Players.

Table 2. Inter-correlation of selected variables with the playing ability of college level volleyball 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 ₁	0.693**	1									
X ₂	0.036	0.065	1								
X ₃	0.344**	0.110	0.046	1							
X ₄	0.920**	0.587**	0.028	0.110	1						
X ₅	0.127*	0.060	0.032	0.281*	0.048	1					
X ₆	0.003	0.051	0.035	0.168*	0.055	0.165*	1				
X ₇	0.060	0.077	0.008	0.209*	0.040	0.161*	0.135*	1			
X ₈	0.010	0.067	0.093	0.023	0.003	0.051	0.014	0.051	1		
X ₉	0.698**	0.411**	0.011	0.046	0.612**	0.107	0.070	0.149*	0.021	1	
X ₁₀	0.068	0.061	0.155*	0.036	0.047	0.006	0.069	0.012	0.087	0.091	1

It was evident from the Table – 2 that there was significant relationship between Volleyball playing ability (CR) and standing height (X_1), arm length (X_3), leg length (X_4), calf girth (X_5) and agility (X_9) in each variables separately. The result proved that the selected variables standing height ($r = 0.693$), arm length ($r = 0.344$), leg length ($r = 0.920$), calf girth ($r = 0.127$), agility ($r = 0.698$) were significantly correlated with the volleyball 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 volleyball playing ability and body weight ($r = 0.036$), thigh girth ($r = 0.003$), speed ($r = 0.060$), strength ($r = 0.010$) and flexibility ($r = 0.068$).

Conclusion

1. The results revealed that an Inter – relationship exists significantly between the anthropometrical and physical variables with playing ability among male inter - collegiate volleyball players.

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