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Relationship of anthropometric measurement and physical fitness with performance of inter collegiate volleyball players

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Abstract
This study was carried out to know the relationship between anthropometric measurement and physical fitness with performance of volleyball players. For the present study 45 Volleyball players representing the intercollegiate Volleyball tournament were taken as the subject for the study. The subject were selected randomly from the whole population of inter collegiate Volleyball players.

Keywords: Volleyball, anthropometric measurement, physical fitness

Introduction
"Anthropometry is that branch of anthropology that is concerned with the taking of measurement in the human body "Anthropometric measurements are the best applicable means for studying body, size, shape and composition. It helps greatly in sports talent selection, sports counselling and measurement of obesity for health related physical fitness. Anthropometric measurement not related to body movements like nose length, ear length are not included in Kinanthropometry is defined as the measurement of body and those body part which are related to body kinetics and kinematics.

Physical Fitness
Human life is based upon the body he keeps. All the activities of life are done with the help of body. Nature has created humans to perform various activities efficiently. Today modernization has made human life easier, as most of the work is performed by the machines. The sedentary life style of man has reduced the efficiency of humans. The less working capacity of humans has caused many problems like weakness, illness, chronic diseases, etc. In past our ancestors were quite healthy and fit. The big reason was that, they had to perform a lot of hard physical activity, like running, walking, jumping etc. The environment in past was less polluted. Moreover, they had less stresses in their life. Today it is all opposite, i.e., physical activity is less, environment is polluted, unhygienic conditions exist all around, life is full of stresses, unbalanced diet etc. All these factors have reduced the efficiency of humans. Today, we desperately require physical fitness not only to improve our abilities but also to improve our health and wellness. This will also help to develop healthy environment around us along with community health, thus nation.

Performance
The study of sports performance in other countries of the world has not yet received due attention and it is mostly limited to a superficial level. This state of affairs hopefully will give way to more serious and scientific approach. In these countries there is not even a serious effort to define the term sports performance which is the logical first step towards study of performance. It however, does not mean that there is no awareness about the nature and importance of sports performance.
It is not easy to define sports performance because of its complex and multidimensional nature. Sports performance in simple words is the process of lacking given sports or demand. Normally, however, it is understood to be degree or extent to which a certain task has been tackled.

Purpose of the Study

The main Purpose of the study is to find out the Relationship of Anthropometric measurement and physical fitness with performance of inter collegiate Volleyball players of Govt. College of physical education Ganderbal.

Hypothesis

It was hypothesized, "There would be positive relationship between anthropometric measurement and physical fitness with performance of Volleyball players.

Delimitations

The study was delimited the following respect while taking into conservation during like interrelation of result.

1. The study was delimited to collect the data from intercollegiate to Volleyball Players of govt. collage of physical education Ganderbal and Kashmir University. Data was collected only form Volleyball players

Tools for data collection

For determining various anthropometric measurements the following tools were used.

1. Stadiometer to measure height
2. Still measuring tape to measure girth of leg length, foot length, arm length.
3. Weighing machine to measure weight.

Analysis and interpritation of data

The statistical analysis and interpretation of data pertaining to the score of anthropometric measurement, physical fitness and performance of Volleyball skills have been presented in this chapter. To find out relationship of anthropometric, physical fitness and Volleyball performance multiple regression correlation, statistical technique was employed. The multiple regression analysis tables had been given below.

Table 1: Inter Correlation Matrix

	Ht.	Wt.	A.L.	L.L.	F.L.	Shooting	Passing	Guarding	Pefor
Ht.	1000								
Wt.	0.25	1.000							
A.L.	-0.055	-0.308	1.000						
L. L.	0.037	-.0137	0.017	1.000					
F.L.	0.0069	0.102	0.060	0.058	1.000				
Shooting	-0.323	0.105	-0.268	-0.058	0.006	1.000			
Passing	-0.028	0.106	-0.335	0.228	0.031	-0.038	1.000		
Guarding	-0.138	-0.076	0.066	0.059	0.123	0.085	-0.114	1.000	
Perfor.	-0.266	0.067	-0.307	0.155	0.122	0.568	0.534	0.582	1.000

Table 2: Summary of the Inter correlation Matrix (Table-1)

S. No.	Variable	Calculated r	Relationship
1	Weight-Height	0.025	Negligible
2	A. length –Height	-0.055	Negligible
3	L. Length –Height	0.037	Negligible
4	F. Length –Height	0.069	Negligible
5	Shooting – Height	-0.323	Low
6	Passing – Height	-0.028	Negligible
7	Guarding- Height	-0.138	Negligible
8	Performance- Height	-0.266	Low
9	A. Length –Weight	-0.308	Low
10	L.Length –Weight	-0.137	Negligible
11	F. Length -Weight	-0.102	Negligible
12	Shooting – Weight	0.102	Negligible
13	Passing – Weight	0.105	Negligible
14	Guarding –Weight	0.106	Negligible
15	Performance-Weight	-0.076	Negligible
16	Leg Length – Weight	0.067	Negligible
17	F.length - Arm length	0.060	Negligible
18	Shooting - Arm length	-0.0268	Low
19	Passing – A. length	-0.335	Low
20	Guarding – A. length	0.066	Negligible
21	Performance–A. length	0.307	Low
22	Foot length – L. length	0.058	Negligible
23	Shooting – L. length	-0.053	Negligible
24	Passing - Leg Length	0.228	Low
25	Guarding- Leg Length	0.059	Negligible
26	Performance- L. Length	0.155	Negligible
27	Shooting – F. Length	0.006	Negligible
28	Passing – F. Length	0.031	Negligible
29	Guarding- F. Length	0.123	Negligible
30	Performance- F. Length	0.122	Negligible
31	Passing – Shooting	-0.038	Negligible
32	Guarding- Shooting	0.085	Negligible
33	Performance- Shooting	0.568	Moderate
34	Guarding- Passing	-0.114	Negligible

35	Performance- Passing	0.534	Negligible
36	Performance- Guarding	0.582	Moderate

Table 3: Regression equation Analysis

	Coefficients	S.E.	t-test	P-Value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.225	1.112	-0.203	0.841	-2.481	2.031	-2.481	2.031
Height	0.003	0.004	0.740	0.464	-0.005	0.010	-0.005	0.010
Weight	-0.003	0.004	-0.883	0.383	-0.011	0.004	-0.011	0.004
A. Length	0.001	0.005	0.206	0.838	-0.009	0.0012	-0.009	0.012
L. Length	0.001	0.005	0.171	0.865	-0.010	0.0012	-0.010	0.012
F. Length	0.016	0.008	1.891	0.067	-0.010	0.032	-0.001	0.032
Shooting	0.968	0.026	37.458	0.000	-0.001	1.021	0.916	1.021
Passing	0.986	0.023	43.061	0.000	0.916	1.032	0.939	1.032
Guarding	0.981	0.022	45.231	0.000	0.957	1.025	0.937	1.025

Table 4: Inter Correlation Matrix

	PU	BKSU	SBJ	FYSR	50YD	SYRW	Shooting	Passing	Guarding	Perfor
PU	1.000									
BKSU	-0.105	1.000								
SBJ	0.261	0.389	1.000							
FYSR	-0.337	-.0.122	-0.339	1.000						
SOYD	0.178	-0.083	0.170	-0.157	1.000					
SYRW	0.055	0.116	0.356	-0.434	-0.037	1.000				
Shooting	0.142	-0.084	0.165	-0.196	0.002	0.304	1.000			
Passing	-0.114	-0.065	-0.043	0.139	-0.090	-0.086	-0.038	1.000		
Guarding	0.118	-0.091	0.024	0.097	0.141	-0.002	0.085	-0.114	1.000	
Perfor.	0.071	-0.128	0.087	0.020	0.038	0.121	0.568	0.534	0.582	1.000

Table 5: Regression equation Analysis

	Coefficients	S.E.	t-test	P-Value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.728	0.896	0.813	0.422	-1.090	2.546	-1.090	2.546
Pull ups	-0.114	0.014	-0.957	0.345	-0.043	0.016	-0.043	0.016
B.K. Sit-up	0.003	0.004	0.647	0.522	-0.006	0.012	-0.006	0.012
SBJ	0.003	0.070	0.040	0.968	-0.139	0.144	-0.139	0.144
FYSR	-0.046	0.034	-1.360	0.183	-0.114	0.023	-0.114	0.023
50 Yard	0.041	0.078	0.524	0.604	-0.117	0.198	-0.117	0.198
SYRW	0.023	0.130	0.181	0.857	-0.240	0.287	-0.240	0.287
Shooting	0.953	0.025	37.820	0.000	0.902	1.004	0.902	1.004
Passing	0.989	0.021	46.209	0.000	0.946	1.033	0.946	1.033
Guarding	0.993	0.022	44.416	0.000	0.948	1.039	0.948	1.039

Table 6: Regression equation Analysis

	Coefficients	S.E.	t-test	P-Value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.577	0.295	1.957	0.057	-0.018	1.172	-0.018	0.172
Shooting	0.958	0.023	41.512	0.000	0.911	1.005	0.911	1.005
Passing	0.984	0.021	47.814	0.000	0.942	1.025	0.942	1.025
Guarding	0.986	0.021	46.464	0.000	0.943	1.029	0.943	1.029

Discussion on Finding

The findings on study reveals that performance was Negligible related to anthropometric measures and physical fitness of the volleyball players. This may be attributed to the following reasons from the matrix table, it was seen that heights, arm length and foot length was negligible related with the performance. As the event volleyball is strength, endurance dominated event in this event a player has to cultivated specific arm strength, the table also shows that height was also more effective in enhancing the performance of volleyball players

Conclusion

On the basis of the result drawn with the mentioned methodology the following conclusions were soughed out:-

There was a positive relationship in between the anthropometric measurement and fitness level with the performance of volleyball players. The conclusion of this research work may aware the players as well as the sedentary individuals about the importance of body types, structure, size and the fitness level while performing any sports activity.

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