

Prophecy Of Playing Ability Among Inter-Collegiate Volleyball Players Pertaining To A Few Anthropometric Variables

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Keywords	Abstract
Prophecy, Volleyball, Anthropometric Variables, Men Players.	The study's goal was to predict college-level male volleyball players' skill level based on a few chosen anthropometric factors. Three hundred and twelve male volleyball players, ages 18 to 25, were chosen at random from different colleges in Tamilnadu state, India, in order to accomplish the goal. Only those who played for their respective collegiate teams were included in the study, and the subjects had played volleyball for at least three years prior. In this study, the volleyball playing ability was predicted with the help of anthropometrical variables namely – Body Weight, Thigh Girth, Calf Girth, Hand length and Chest girth. Three certified volleyball coaches evaluated the playing ability, which was defined as the performance factor, subjectively. Five independent variables and one dependent variable, the volleyball players' skill made up the current study. As detailed below, statistical analysis was performed on the collected data. Multiple regressions and the Pearson product moment correlation were also employed. On the basis of results, it was concluded that anthropometrical characteristics in the form of hand length, calf girth and thigh girth are major contributors in playing ability of Inter-collegiate volleyball players.
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1. Introduction

Sports performance is the culmination of many variables that can differ from person to person, even if they ultimately perform similarly in competition. Finding and choosing a future top athlete during childhood or early adolescence is essential. Achieving an international level of athletic performance requires years of consistent, intense training. The athletes who are chosen to participate in high-level sports activities need appropriate surroundings, top-notch facilities, equipment, a sensible lifestyle, the supervision of knowledgeable sports doctors, and coaches with training and experience [2,3]. For certain players who are at the appropriate age, such circumstances can be established in order to obtain high-caliber performances. Therefore, in the current competitive sports world, accurately identifying, selecting, and placing young talent is becoming a crucial and difficult task everywhere [4].

Identifying and choosing a future elite athlete during childhood or adolescence has become essential. It takes years of consistent, intense training to reach an international level of athletic performance [5,6]. The individual who are chosen for high-level sports activities need appropriate surroundings, top-notch sporting goods, a sensible way of living, and the assistance of professionals like a sports doctor, a knowledgeable and experienced coach, etc. Only certain individuals can be subjected to such circumstances. As a result, it's becoming crucial everywhere to properly identify, choose, and place young talents [7,8].

Given the aforementioned information, it is deemed valuable to look into the best anthropometric variable to use as a predictor of young volleyball players' performance [1,3,6]. Additionally, the current study will highlight some of the critical abilities that may need to be considered when selecting skilled volleyball players and will also help to develop these elements through a methodical training program.

2. Materials and Methods

The study's goal was to predict college-level male volleyball players' skill level based on a few chosen anthropometric factors. Three hundred and twelve male volleyball players, ages 18 to 25, were chosen at random from different colleges in Tamilnadu state, India, in order to accomplish the goal. Only those who played for their respective collegiate teams were included in the study, and the subjects had played volleyball for at least three years prior. In this study, the volleyball playing ability was predicted with the help of

anthropometrical variables namely – Body Weight, Thigh Girth, Calf Girth, Hand length and Chest girth [12,13]. Three certified volleyball coaches evaluated the playing ability, which was defined as the performance factor, subjectively. Five independent variables and one dependent variable, the volleyball players' skill made up the current study. As detailed below, statistical analysis was performed on the collected data. Multiple regressions and the Pearson product moment correlation were also employed.

3. Results

Table I. Descriptive statistics of playing ability in volleyball from selected anthropometrical variables among college level men players

S.No	Variables	Range	Minimum	Maximum	Mean	SD (±)
1	Body Weight	19.40	58.40	77.80	67.96	5.91
2	Thigh Girth	37.85	43.15	81.00	62.35	13.22
3	Calf Girth	8.15	30.17	38.32	32.99	2.57
4	Hand length	2.77	18.18	20.95	19.22	0.82
5	Chest Girth	19.34	75.01	94.35	86.47	7.11
6	Playing Ability	2.15	6.35	8.50	7.12	1.13

Table – I showed the descriptive statistics – Range, Minimum, Maximum, Mean and Standard deviation of playing ability in volleyball from selected anthropometrical variables and the playing ability among college level men Players. The present study attempted to link the coaches rating as measure of playing ability in volleyball from selected anthropometrical variables among college level men Players.

Figure I. Line diagram shows the Descriptive Analysis of selected anthropometrical variables

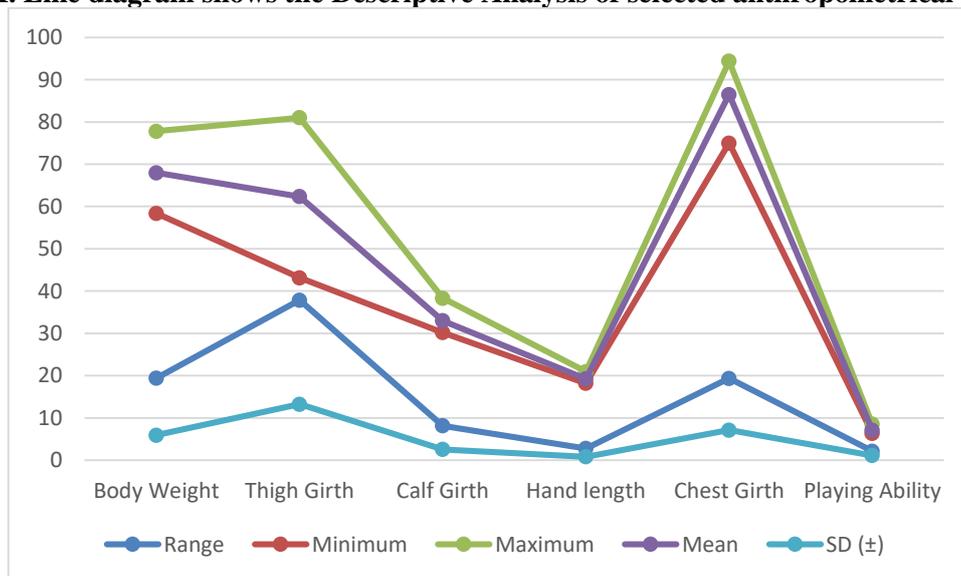


Table II. Inter-correlation of selected variables with the playing ability in volleyball among college level men players

	Body Weight	Thigh Girth	Calf Girth	Hand Length	Chest Girth
Playing Ability	0.44**	0.12*	0.55**	0.17**	0.07

The findings demonstrated a significant correlation between playing ability and the chosen variables of body weight, thigh girth, calf girth, and hand length. Playing ability was not substantially correlated with chest circumference.

Table III. Model Summary

R	R Square	Adjusted R Square
.681 ^a	.464	.463

Table IV. Analysis of variance of independent variables on playing ability in volleyball among college level men players

Model	Sum of Squares	df	Mean Square	F
Regression	147.517	3	147.517	139.822*
Residual	171.653	309	0.551	
Total	329.170	312	1.055	

Table V. Regression analysis of prediction equation of college level men volleyball players

Model		Unstandardized Coefficients		Standardized Coefficients	Sig.	Partial Correlations	Collinearity Statistics
		B	Std. Error	Beta			
Step 1	(Constant)	-16.466	2.546		.000		
	Hand Length	.009	.000	.632	.000	.669	.904
	Calf Girth	-.081	.015	.237	.000	.303	.821
	Thigh Girth	.013	.003	-.130	.003	-.151	.714

According to the model summary in above tables, linear regression accounted for 46.40% (R square =.464) of the variance in the total volleyball playing ability data. Additionally, a significant regression was found. This result is supported by the computed $F(3,309) = 139.822$, $p < .01$, and $R^2 = .464$. The hand length, calf girth, and thigh girth have beta values of 0.632, 0.237, and -0.130, respectively. Hand length has a significantly greater impact on volleyball playing ability than calf girth and thigh girth, according to the reported Beta coefficient for anthropometrical characteristics.

It is clear that the regression equation obtained has a high predictive validity because the multiple correlations on volleyball playing ability with the combined effect of these independent variables are highly significant.

$$\text{Playing Ability (CR)} = (\text{CR}) = -16.466 + 0.009(\text{HL}) - 0.081(\text{CL}) + 0.013(\text{TG})$$

4. Discussion and Recommendation

The findings show that the anthropometric traits of hand length, calf circumference, and thigh circumference account for approximately 46% of the playing ability of male intercollegiate volleyball players. The results are not surprising because volleyball players' anthropometric skills measured by hand length, calf circumference, and thigh circumference were used to determine their playing ability [9, 10]. Given the importance of hand length, calf circumference, and thigh circumference in a sport like volleyball, it is not surprising that these anthropometric factors were found to have a sizable impact on volleyball players' playing abilities [11,12,13]. To accurately forecast future performance, it is therefore advised to include a few more independent variables, such as physiological, psychological, and physical factors.

5. Conclusion

1. The results revealed that an Inter – relationship exists significantly between the anthropometrical variables among college level men volleyball players.
2. Regression equation developed by three variables can be put in to prediction equation of volleyball players.
3. On the basis of results, it was concluded that anthropometrical characteristics in the form of hand length, calf girth and thigh girth are major contributors in playing ability of Inter-collegiate volleyball players.

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