PREDICTION OF VOLLEYBALL PLAYING ABILITY FROM MOTOR FITNESS

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ABSTRATC

The purpose of the study was to predict the Volleyball playing ability from selected. To motor fitness components achieve the purpose of the study, total of eighty Inter -university Volleyball men players are selected as a subjects. The motor fitness components such as speed strength endurance flexibility, agility power was selected as independent variables and volleyball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were tested by. Motor fitness components namely speed was measured from 50 meters dash, strength was measured with maximum numbers of push ups, endurance was measured from 600 yards run and walk test, flexibility was measured with modified sit and reach test, agility from 4×10 mts shuttle run and power was measured from Vertical Jump volleyball playing ability of the subjects was assed by the application of a Volleyball rating scale for 45 points. After the assessment of the performance in the match situation the average score of 3 experts were consider as volleyball playing ability of the subjects. To determine the relationship between dependent variable and independent variable Pearson product moment correlation and to find out the joint contribution multiple regression was used .The results of the present study indicate that speed strength endurance flexibility , agility power are playing an important role for volleyball playing ability.

Key Words: Playing Ability, Volleyball,. Motor fitness.

Introduction

The word physical fitness and motor fitness are often used interchangeably. The term motor fitness was developed to describe a broad concept than physical fitness. This extensive term means the ability to perform basic motor skills efficiently and effectively. Motor fitness is an important component for an athlete in order to obtain optimal performance in sports. The level of motor abilities is of prime importance for learning of various activities and perfection of different skills. Traditionally motor abilities have been viewed as a combination of factors that are basic to all movements. All the factors of motor ability are mainly concerned with the ability of the player and his capacity of action. The level of motor ability is the prime importance for learning various general activities and perfection of different skills in various sports and physical activities.

Motor ability is sometimes used to mean achievement of basic motor skills. It also indicates the present athletic ability. General motor ability may be defined as, motor fitness including neuromuscular coordination abilities or motor control by eye hand coordination, eye foot coordination and whole body movement coordination. Sometimes general motor fitness is also defines as one's inherent potential to perform vigorous motor activities with best speed, strength, endurance, flexibility, agility and quick reaction time. Thus, when we use the term general motor ability, we are talking about basic motor fitness and general body coordination skill needed in various activities. Sports specific motor ability may be defined as, general motor ability plus excellence in specific sports skills in the game of one's specialization. Sports person has good specific and general motor ability then he can perform better at higher level. In order to improve performance in sports, motor fitness preparation of the sports person plays an important role and lays a strong foundation for all other aspects of sports performance. The fitness of a sports person is the sum of several motor abilities namely; strength, speed, endurance, flexibility, agility and coordination. These motor abilities and their complex form of human motion. Motor fitness as a term refers to the total dynamic physiological state of the individual.

There are number of fitness components i.e. agility, speed, flexibility and maintenance of body weight. Motor fitness is to be measured by performance and this performance is based on a composition of many factors. Some of these factors evidently more dominant than others and thus have a higher relation with physical fitness. Most sports of course, require a contribution from a number of components of fitness in varying degrees. Speed, power, balance, agility, strength, reaction time and kinesthetic perception are the traits of motor performance, and these traits plays major role in enhancing the performance of any game's skills. With a good and well efficient combination of all these motor performance traits a player can give all his/her utmost throughout the most strenuous of competitive matches (Nabhendra Singh, 2010). Strength in lower limbs is an obvious concern in Volleyball, the quadriceps and hamstring group of muscles should generate high force for jumping and

blocking. Though the strength is its re-requisite, which is to be developed in the beginning, it is later to be transferred directly into explosive strength. Muscular power, often referred to as explosive power, is a combination   of speed and strength an important in vigorous performance because it determines how hard a person can hit, jump and receive etc.

Volleyball game is an excellent all-around team sports, has been widely accepted as a highly competitive as well as recreational game all over the world. Now, it is a game of power and tactics and is played at a faster pace and this calls sharper thinking, high standard of skills and technical application. There are very fast action and accuracy in performance to technique, and tactics, optimal physique is apparently an advantage to volleyball performance. Only when a volleyball team is collectively equipped with all the ideal anthropometric characteristics can the team win the dominance in a game. Present-day volleyball requires from players quick reaction to changing situations in the game and accurate and precise movement for handling the ball.

Statement of the problem:

The purpose of the study was to predict the volleyball playing ability from motor fitness components.

Methodology:

The purpose of the study was to predict the volleyball playing ability from anthropometric measurements. The purpose of the study, 80 Inter university volleyball men players are selected as a subjects. The age of the subjects were ranged between 18 to 25 years. The motor fitness components such as speed strength endurance flexibility , agility power was selected as independent variables selected as independent variables and volleyball playing ability was selected as dependent variable for this study. The selected independent variables were tested by using standardized test items were Motor fitness components namely speed was measured from 50 meters dash, strength was measured with maximum numbers of pushups, endurance was measured from 600 yards run and walk test, flexibility was measured with modified sit and reach test, agility from 4×10 meters shuttle run and power was measured from Vertical Jump volleyball playing ability of the subjects was assed by the application of a Volleyball rating scale for 45 points. After the assessment of the performance in the match situation the average score of 3 experts were consider as volleyball playing ability of the subjects. To determine

the relationship between dependent variable and independent variable Pearson product moment correlation and to find out the joint contribution multiple regression was used and volleyball playing ability was tested with subjective volleyball rating scale. To determine the relationship between dependent variable and independent variable Pearson product moment correlation, multiple correlations and multiple regressions was used as statistical techniques. The level of significance was fixed at .05level.

Findings of the study:

The data collected on the selected variables were analyzed and presented in the following tables.

Table 1.

Relationship between Volleyball Playing Ability and Anthropometric Measurements

Dependent variables	Independent variables	Correlation co-efficient
Playing ability	Speed	-0.46
	Strength	0.387
	Endurance	-0.626
	Agility	-0.441
	Flexibility	0.289
	power	0.345

Above the table shows that Pearson's product moment correlation between the selected variables and playing ability of volleyball players.

Table 2

Table showing regression co-efficient of Volleyball   Men players (Model Summary)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743	.552	.515	5.98074

The above table shows the obtained R squared value is 0.552 which indicates the total contribution of all the independent variables (motor fitness components) on playing ability of

Volleyball men players. The percentage contribution of the selected variables found to be 55.2%. The estimated Std. Error value is 5.98.

Table 3

Summary of Regression Coefficients for Playing Ability

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	87.152	16.258		5.361	.000
Speed (X_1)	-2.133	1.593	-.128	-1.338	.185
Strength(X_2)	.156	.069	.197	2.266	.026
Endurance(X_3)	-14.596	2.725	-.475	-5.356	.000
Agility(X_4)	-2.591	1.104	-.220	-2.347	.022
Flexibility (X_5)	.082	.146	.050	.564	.574
Power(X_6)	.020	.082	.023	.245	.807

Table 4

Relative contributions of predictor variables (motor fitness components) on criterion variable (playing Ability) Volleyball Men Players

	Beta	r	β × r	%
Speed (X_1)	-.128	-0.46	0.058761	5.88
Strength(X_2)	.197	0.387	0.07608	7.61
Endurance(X_3)	-.475	-0.626	0.297399	29.74
Agility(X_4)	-.220	-0.441	0.097067	9.71
Flexibility (X_5)	.050	0.289	0.014349	1.43

Power(X_6)	.023	0.345	0.007856	0.78
			Total	55.20

The total contribution of all the independent variables (motor fitness variables) on playing ability of Volleyball men players was found to be 55.2% in which, the contribution of Speed (X_1) = 5.88%, strength (X_2) = 7.61%, endurance (X_3) = 29.74%, agility (X_4) = 9.71%, flexibility (X_5) = 1.43% and Power (X_6) = 0.78%. Therefore it is concluded that, the endurance (X_3), is the first contributor followed by agility (X_4), strength (X_2), speed (X_1), flexibility (X_5) and power (X_6) on playing ability of Volleyball men players.

Conclusions

On the basis of findings of the present study, the following conclusions were drawn:

1. There was a significant relationship found between motor fitness variable speed and Volleyball playing ability of inter university Volleyball players.

2. There was a significant relationship existed between motor fitness variable strength and Volleyball playing ability of inter university Volleyball players.

3. There was a significant relationship found between the motor fitness variable endurance and Volleyball playing ability of inter university Volleyball players.

4. There was a significant relationship found between the motor fitness variable flexibility and Volleyball playing ability of inter university Volleyball players.

5. There was a significant relationship exists between the motor fitness variable agility and Volleyball playing ability of inter university Volleyball players.

6. There was a significant relationship exists between the motor fitness variable power and Volleyball playing ability of inter university Volleyball players.

7. The total contribution of all the independent variables (motor fitness variables) on playing ability of Volleyball men players was found to be 55.2%.

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