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Correlation between different skill efficiencies with BMI and different physical fitness variables of volleyball players

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Abstract

Volleyball is the major competitive sport which required lots of the physical fitness and high skill level. Today we are facing cut throat competition in all the different level of game and sports. Now many countries have established their training schools to prepare their sports persons for high level tournaments. In this study we want to analyses the relationship of two main skills which we use in volleyball with their body mass index and three physical fitness variables. After result we have found that the moderate relationship between different skills of volleyball with BMI and other physical fitness variables.

Keywords: volleyball, bmi, 30 meters flying dash, medicine ball throw, 800 meters run/walk, service skill and setter skill

Introduction

During sports session we usually feel that the achievements of a sports person merely depend upon the points he achieves. But the factors are slightly different from it, because we cannot judge achievements and success of a sports person from the number of points. It is not possible to view a game with a certain vision only because there are many factors behind this.

Usually we find that there are common needs in maximum games and sports but here we will talk about variables like anthropometric and physical fitness, they play a crucial role to make a player stronger and successful to achieve the high level demand. We'll have a look, numbers of training institutes such as Sports authority of India and many others are emphasizing on such factors which are responsible for physical fitness and anthropometric variables. In this type of training centers, coaches generally prepare some different training plans for fitness and skill development. Coaches watch the performance closely with the help of monthly and quarterly examination of physical fitness and skill tests. That's why, we took an initiative to do this study on volleyball.

L. Mohan & Y. P. Sharma (2009) ^[3] tested a total of 334 volleyball players from different colleges of Himachal Pradesh to judge their skill efficiency in relation to their performance. The purpose of the study was to find out significant differences of skill efficiency variables of volleyball players of Himachal Pradesh. To achieve the objectives of the study, Helmen volleyball Skill test consisting of three test items face pass, fore arm pass and wall spike was used to measure the skill efficiency level of volleyball players.

Fellingham and Reese (2004) ^[4] suggest the use of importance scores. An importance score would be a measure that could account for both the impact and the amount of un-certainty associated with the performance of a skill relative to the probability of scoring a point.

Methodology

In this study we choose the sports training center of volleyball (kurukshetra) because there are 17 volleyball trainees in this center. For physical fitness, we selected three tests like 30 meters flying (speed), 800 meters run walk (speed endurance) and medicine ball throw (arm and shoulder strength). For anthropometric measurements, we measure height and weight of the players and convert in to Body Mass Index (BMI). Volleyball service test and volleyball setter

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test were conducted to know the skill level of volleyball players. For statically treatment we used Karl Pearson's

(product moment method) coefficient of correlation.

Result and conclusion

Table 1: Correlations of Service Skill Efficiency with Bmi and Different Physical Fitness Variables of Volleyball Players (N=17)

| S. No. | Variables correlated with Volleyball Service test | Mean | SD | Coefficient of correlation 'r' |
|--------|---|-------|-------|--------------------------------|
| | Service Test | 5.764 | 1.714 | |
| 1 | BMI | 21.02 | 1.545 | .637** |
| 2 | 30 Mts. Dash | 4.015 | .4535 | -.727** |
| 3 | Medicine Ball Throw | 6.020 | 1.181 | .726** |
| 4 | 800 Mts. run and Walk test | 2.680 | .3184 | -.626** |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 1 indicates the mean score of service test, BMI, 30 meters dash, Medicine ball throw and 800 meters run walk. The mean score of above items are 5.76, 21.02, 4.01, 6.02 and 2.68 respectively. Correlation between the service test and BMI is .637, service test and 30 yard dash is -.727, service test and Medicine ball throw is .726 and service test and 800 meters run walk is -.626.

Height and weight both play an important role in service in

volleyball. If we talk about the relationship of service test and BMI, the result shows that there is moderate degree relationship. It means that the subjects of study are moderately related with service with the term of BMI. If we consider the relationship of Service and 30 yard flying, we found the moderate response in this relationship. Table 1 also shows medicine ball throw and 800 meters run walk tests, both are having moderate relationship with service test.

Table 2: Correlations of Setter Skill Efficiency Test With Bmi and Different Physical Fitness Variables of Volleyball Players (N=17)

| Sr. No. | Variables correlated with Volleyball Setter test of Volleyball players | Mean | SD | Co-efficient of correlation 'r' |
|---------|--|--------|--------|---------------------------------|
| | Setter Test | 3.941 | .8993 | |
| 1 | BMI | 21.026 | 1.5459 | .505* |
| 2 | 30 Meters dash | 4.0153 | .45350 | -.516* |
| 3 | Medicine Ball Throw | 6.0206 | 1.1819 | .457 |
| 4 | 800 Meters run and Walk test | 2.680 | .3184 | -.491* |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 2 indicates the mean score of setter test, BMI, 30 meters dash, Medicine ball throw and 800 meters run walk. The mean score of above items are 3.94, 21.02, 4.01, 6.02 and 2.68 respectively. Correlation between the setter test and BMI is .505, setter test and 30 yard dash is -.516, setter test and Medicine ball throw is .457 and setter test and 800 meters run walk is -.491.

If we talk about the relationship of setter test and BMI, the result shows that there is moderate degree relationship. It means that the subjects of study are moderately related with setter with the Body mass index. If we see the relationship of Setter and 30 yard flying, we also found the moderate response in this relationship along with setter skill. Table 2 also shows medicine ball throw and 800 meters run walk tests, both are having moderate relationship with setter ability.

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