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Relationship between selected motor fitness and playing ability of volleyball players

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Abstract
The purpose of the study was to examine the relationship between selected motor fitness and volleyball playing ability for which 30 volleyball players were selected from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) and their age ranged from 18-28 years. The selected motor fitness: agility, coordination and reaction time test were measured by conducting side step test, eye-hand coordination (ball transfer) test and nelson finger reaction test. Brady's volleyball skill test was used to assess the volleyball playing abilities of the selected subjects. Mean and Standard deviation were used as descriptive statistics. Pearson Product Moment Coefficient of correlation with significant level at 0.05 was used to examine the correlations between volleyball playing ability with agility, balance, coordination and reaction time. The statistical analysed was carried out using MS Excel and SPSS 16.0 version. The findings of the present study showed that there was significant relationship found in agility, coordination and reaction time in correlation between volleyball playing ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

Keywords: Agility, Coordination, Reaction time, Bray's volleyball skill test and Volleyball players

Introduction
Volleyball is a team game and there must be a good understanding and coordination among players to be effective as a group. To the extent motor components are concerned. Volleyball requires agility, coordination and reaction ability for playing and a good suspicion to lift and hit the ball. In volleyball changes in the speed of game and scoring system the set finishes quickly, players need high level of agility, coordination and reaction ability. The individual not only physically fit but also possesses good motor control an body coordination in addition to excelling in the specific skills of his/her game of specialization (Kansal, D. K., 1996) [1]
According to Natraj, H. V. & Kumar, C. (2006) [6] successful performances of skill components of motor abilities contribute independently and interdependently. The role of motor abilities for successful sports performance cannot be disputed. Strength, endurance, speed, flexibility, agility and co-coordinative abilities are the prerequisites for motor action in all sports. The improvement and maintenance of these components are very important in sports training. No doubt the performance of player influenced by many factors but still motor fitness components is the primary factor among these entire factors (Lidior, R. & Ziv, G., 2010) [5]. The performance of players is influenced by many factors such as physical, physiological and psychological variables, technique, tactics, physique, body size, body composition and application of biomechanical principles (Ortega, F. B., Ruiz, J. R., Castillo, M. J. & Sjostrom, M., 2008) [7].
The present study was done to correlate the selected motor fitness such as agility, coordination and reaction time with the playing ability of volleyball players of Guru Ghasidas Vishwavidyalaya, Bilaspur. It was expected that there would be significant relationship in selected motor fitness with volleyball playing ability.

Methodology
Selection of Subjects
For this study the researcher selected 30 male volleyball players randomly selected from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), were selected as subjects and the age ranging from 18-28 years.

Selection of Variables
Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study – selected motor fitness (independent variables) and volleyball playing ability (dependent variables).

Criterion Measures
Selected variables and their criterion measures –

S. No.	Variables	Test Items	Measuring Unit
1.	Agility	Side step test	In points
2.	Reaction time	Nelson finger reaction tests	In seconds
3.	Coordination	Eye-hand coordination (ball transfer) test	In seconds
4.	Volleyball playing ability	Brady's volleyball skill test	In counts

Statistical Analysis
To find out the significance correlation between the selected motor fitness variables and volleyball playing ability the data were analyzed by applying descriptive statistics and Pearson Product Moment Coefficient test. The level of significance was set at 0.05.

Results of the Study

The data were obtained by applying the side step test for agility, nelson finger reaction tests for reaction time and eye-hand coordination (ball transfer) for coordination and volleyball playing ability data were obtained by applying the Brady's volleyball skill test. All the individuals' score was used to correlate the level of playing ability of volleyball.

Table 1: Descriptive table of selected motor fitness variables and playing ability of volleyball players

Variables	Mean	Std. Deviation	N
Playing ability	17.233	1.072	30
Agility	6.000	0.694	30
Coordination	1.295	0.030	30
Reaction Time	0.283	0.003	30

Table 2: Coefficients of correlation of volleyball playing ability with motor fitness variables of volleyball players

Variable		'r' value	Sig. (2-tailed)
Volleyball Playing Ability	Agility	.370*	.044
	Coordination	.458*	.011
	Reaction Time	.401*	.028

*Level of confidence significance at $r_{0.05}$ (2, 28) = 0.361

Table II reveals that the calculated 'r' value of agility (r = .370), coordination (r = .458) and reaction time (r = .401) of an individual correlates maximum with volleyball playing performance These variables have significant relationship with volleyball playing performance at 0.05 level of significance.

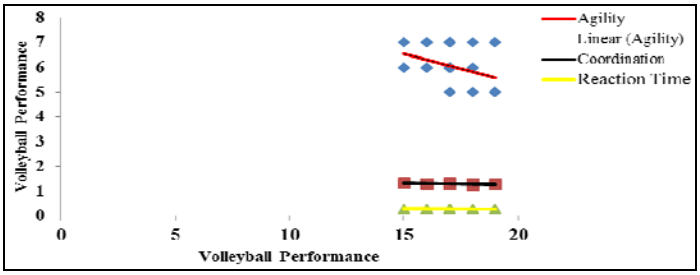

Fig 1: Means scores of motor fitness variables and playing ability of volleyball players

Discussion of the Study

The findings of the study indicate that the agility, coordination and reaction time is significantly related to the performance of volleyball playing ability. It was also supported by Khare, K. K., Singh, S. K., Yadav, S. & Raddy, T. O. (2012) [4] conducted a study and found significant relationship between the shoulder-wrist flexibility and agility to squash racquet performance. Singh, H., Mal, A. B. S. & Singh, G. (2016) [9] concluded that agility "T" tests were very significantly correlated with the performance of north zone inter-university kabaddi players. Pradhan, K. (2016) [8] were conducted a study and concluded that the significant difference in agility among the different playing positions of volleyball players. There are some more research work also supported to present study such as Thakur, J. S. & Sinha, A. (2010) [11].

Conclusion of the Study

On the basis of findings following conclusions have been made –

- Significant relationship found in volleyball playing ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to agility (r = .370, $p < 0.05$).
- Significant relationship found in volleyball playing ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to coordination (r = .458, $p < 0.05$).
- Significant relationship found in volleyball playing ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to reaction time (r = .401, $p < 0.05$).

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