



RELATIONSHIP BETWEEN ABILITY AND MOTOR FITNESS OF BADMINTON PLAYERS

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ABSTRACT

Objective of the study were to find out the relationship between playing ability and motor fitness components of badminton players. For the purpose researcher selected 30 makes badminton players who had participated in intercollegiate competition of Sant Gadge Baba Amravati University Amravati. With the help of simple random sampling method. JCR test was constructed to the measure motor fitness component of players where as for measuring playing ability three judges test was constructed during the competition. Test was based on the Hick's Badminton playing ability test. Three items, a clear test, a smash test and a strategy test and overall performance was tested. Results of the study indicated a positive relationship between the motor fitness components and playing ability of badminton players where as in certain items in was found negligible.

INTRODUCTION

Every human being has a fundamental right to access to physical activities and sports which are essential for the full development of his personality. The freedom to develop physical, intellectual and moral power through physical education and sports must be guaranteed both within the education system and in the other aspects of social life. Desirable traits of character are developed through sports, such as sportsmanship, discipline, observance of the rules of the games, self control and a spirit of fair play. Team playing encourages cooperation, leadership, fellowship and team spirit of fair play prepare sportsmen for the life. Sport has assumed world-wide importance. In a shrinking world which is coming nearer day by day. It is playing the important role in bringing the world nearer, people together at

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regional, national and international integration. It does not distinguish concept to all aspects of sports such as coaching and teaching. The sports physiologists used physiological assessment techniques and intervention strategies in an effort to help individual to achieve their optimal performance. For top level performance it is very important to spot, select and nature a budding sportsman as it is recognized by all that athletes must possess some inherent qualities which can be developed by means of systematized and scientific training. For spotting and selecting of players, one must consider physiques and fitness, as these qualities will help a long way towards better performance.

With the advancement of scientific research in the field of sports the last decades the researchers have consider so many thing which are required for high performance in addition to specific skills; body shape and neuromuscular of or the purpose. In this competition era no doubt a high degree of motor fitness is necessary for success in all games and sports but the degree and order of its components may vary according to the nature of activities.

SIGNIFICANCE OF THE STUDY

The study was significant in following aspects :

- 1) Study was significant in finding out the relationship between motor fitness and playing ability of the badminton players.
- 2) Study was significant in finding out the relationship between leg strength, shoulder strength, agility and visual reaction time with playing ability of badminton players.

HYPOTHENESIS

It was hypothesized that there would be positive relationship in motor fitness with playing ability of badminton players.

DELIMITATION

- 1) Study was delimited to male badminton players participate in intercollegiate competition of SGB Amravati university Amravati.
- 2) Age varied from 18 to 28 years only.
- 3) Study was delimited in following motor fitness components leg strength, shoulder strength, agility and visual reaction time.

LIMITATION

- 1) Extracurricular activities were not under control of researcher.
- 2) Socio-economic condition of subjects was unknown.
- 3) Environmental conditional was not under the control of researcher.
- 4) Dietary factor were not considered.

SOURCE OF DATA

Players who participated in intercollegiate completion of SGB Amravati university Amravati were the sourced of data for the present study.

SELECTION OF SUBJECT

Subject was selected from the colleges participated in intercollegiate competition of SGB Amravati University Amravati. By using simple random sampling method 30 male subjects were selected. Age group of subjects was ranging from 18-28 years.

SELECTION OF TEST

Following test were selected for measuring motor fitness components and badminton playing ability of the players.

- 1) For measuring strength : Chinning up test.
- 2) For measuring leg strength : Vertical jump
- 3) For measuring ability : Shuttle run
- 4) For measuring visual reaction time : Reaction Timer
- 5) For measuring Badminton playing ability :

METHEDODOLOGY

With the help of colleagues JCR test was administered for measuring the motor fitness of the player whereas for measuring visual reaction time of the players reaction timer as used. Hick's Badminton Playing ability test was administered to measure the Badminton Playing ability of players on the base of Hicks' test researcher conducted three item test, Clear, Smash, Strategy were administered followed by three judges evaluation. For the purpose researcher used three badminton court of HVSKM college of physical education during the intercollegiate competition Reability and validity of the Hick's Badminton Playing ability test are as follows.

Test items	Reliability coefficient	Validity coefficients			combined
		Judges rating of skill	Tournament score	Judges of playing ability	
Clear	0.894	0.640	0.462	0.662	0.606
Smash	0.526	0.564	0.481	0.634	0.545
Strategy	0.420	0.642	0.542	0.687	0.606

ANALYSIS AND INTERPRETATION OF DATA:

For analysis of the data multiple regression correlation technique was employed. Tabulates regression had been given below

Table
Inter correlation matrix

Test items	Chinups	Vertical jumps	Shuttle run	Reaction time (visual)	Performance
Chin ups	1				
Vertical jump	-0.191	1			
Shuttle run	-0.020	-0.062	1		
Reaction time (visual)	0.251	-0.125	-0.189	1	
Performance	0.246	0.046	0.264	0.033	1

The results of the analysis were verified up to which how extent they were interrelated to each other with the help of standard norms propounded by 'GLASS AND HOPKINS' (1996) for interpreting the data which are analysis with multiple regression correlation equation method. The following standard norms are as follows:

Coefficient (r)	Relationship
.00	Negligible
0.20-0.40	Low
0.40-0.60	Moderate
0.60-0.80	Substantial
0.80-1.00	High to very high

Summary of the inter correlation matrix (Table – I)

Sr. No.	Variable	Calculated 'r'	Relationship
1	Chin up-vertical jump	-0.191	Negligible
2	Chin up-shuttle run	-0.020	Negligible
3	Chin up-reaction time	0.251	Low
4	Chin up-performance	0.246	Low
5	Vertical jump-shuttle run	-0.062	Negligible
6	Vertical jump-reaction time	-0.125	Negligible
7	Vertical jump-performance	0.046	Negligible
8	Shuttle run – reaction time	-0.189	Negligible
9	Shuttle run – performance	0.264	Low
10	Reaction time - performance	0.033	Negligible

Form the above table it was found that the relationship of chin ups with vertical jump(-0.191) is negligible, chin ups with shuttle run (-0.020) is negligible, chin ups with reaction time (0.251) is low, chin ups with performance (0.246) is also low. Whereas vertical jump with shuttle run (-0.062), reaction time (-0.125), performance (0.046) was found negligible. It was also found that relationship of shuttle run with reaction time (-0.189) was negligible and with performance (0.264) was low whereas reaction time with performance (0.033) was negligible.

Table 2
Summary of different correlation

Multiple R	0.383
R Square	0.147
Adjusted R	0.010
Standard E	49.988

Table 3
Regression equation analysis

	Coefficient	S.E	t-test	p-value	Lower 95 %	Upper 95 %
Intercept	-4.151	154.235	0.027	0.979	321.804	313.501
Chins ups	5.279	4.177	1.372	0.182	-2.873	14.332
Vertical jump	3.139	4.998	0.628	0.536	-7.154	13.432
Shuttle run	11.951	7.96	1.501	0.146	-4.442	28.345
Reaction time visual	33.418	184.343	0.181	0.858	346.243	412.079

Form the above table it is clear that the Y – intercept i.e., $\alpha = 4.151$, $\beta_1 = 5.726$, $\beta_3 = 11.951$ and $\beta_4 = 33.418$

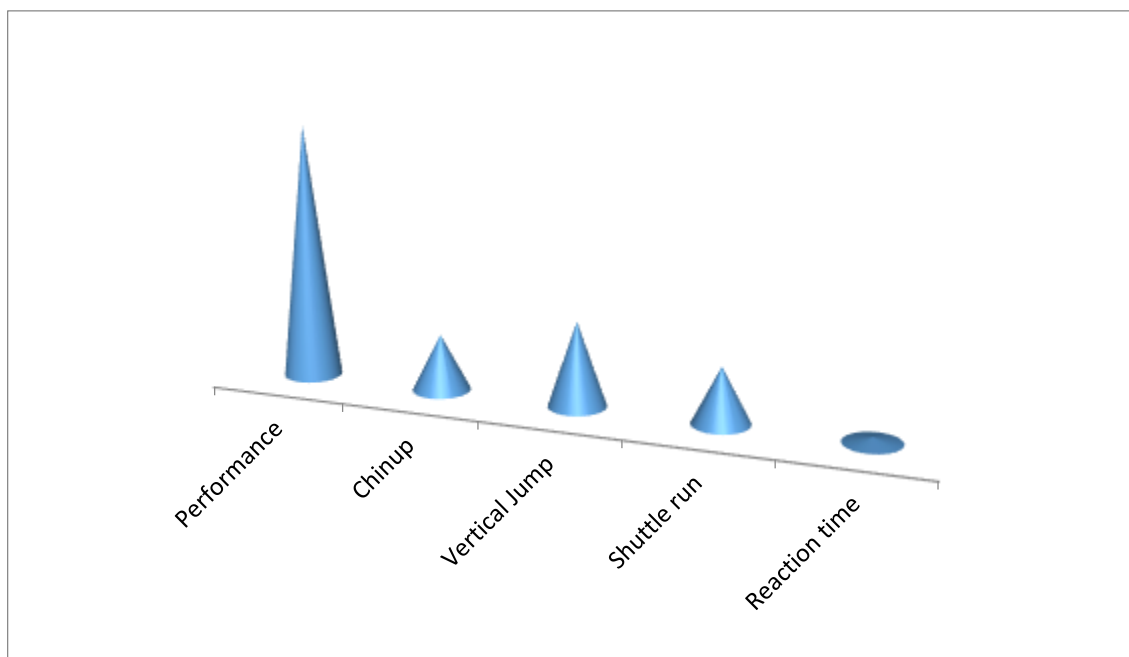
Hence the prediction equation is given as

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

This can be written in numerical form as below

$$y = -4.151 + 5.726 * 9.6 + 3.139 * 18.97 + 11.951 * 10.65 + 33.418 * 0.23$$

Graphical representation of the mean of motor fitness components and performance of badminton players.



FINDING

The finding of the study reveals that the motor fitness was negligible related with playing ability of badminton player. This may be attributed to the matrix table, it was seen that vertical jump and reaction time was ups and shuttle run was less related with the playing ability of badminton players. As the event badminton is strength, explosive power, agility and reaction time dominated the event.

In overall numerical and statistical analysis of motor fitness with playing ability of badminton players, the relationship was found positive. In few component it was found negative and also negligible may be due to sampling error. Results of the study may be justified with the study of WAY; studied the relationship of general motor ability to skill test score in badminton. Results indicated a positive relationship between the different variables.

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