



EFFECT OF PHYSICAL AND MOTOR FITNESS COMPONENTS ON PLAYING ABILITY OF MALE CRICKET PLAYERS

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ABSTRACT

Traditionally fitness is not considered an essential element in cricket because it is believed that the game of cricket is 90% mental and 10% physical with tactical and technical skills being more important than physical prowess. In the last 20 years, things have changed and physical fitness is considered an integral part of cricket. Hence the present study was planned to assess the association between selected physical and motor fitness components on the playing ability of male cricket players. To conduct the study 150 male cricket players from Himachal Pradesh were selected. The sample includes Ranji trophy probable, interuniversity and intercollegiate level male cricket players and the age range of the sample was 19 to 32 years. The power Test (Vertical Jump) was conducted with the help of a wall-mounted board. Speed testing was done with the help of a 20-meter and 40-meter speed trial. Run a three was used to assess the agility of the subject while repeated sprint ability was used to assess the anaerobic capacity of the subjects. Push-ups and chin up were measured with the standard procedure while Yo-Yo intermittent recovery test was used to assess the aerobic capacity of the selected subjects. The playing ability of cricket players was evaluated by three judges panel on a scale ranging from 0 to 10. The judges gave ratings to the performance of each player in an actual match-like situation. A significant correlation was observed between the playing ability of male cricket players with their performance on vertical jump, 20m run, 40m run, run a three, repeat sprint, push up and Yo-Yo test whereas the association of chin up was not observed on playing ability of male cricket players. It was concluded that selected physical and motor fitness variables are essential aspects of the playing ability of male cricket players and thereby a scientific fitness training plan is necessary for male cricket players for the betterment of their playing ability.

Keywords: Cricket, physical and motor fitness, playing ability

1. INTRODUCTION

Being an intermittent sport, the physical demands of cricket are different from other outdoor sports. But when we consider the T-20 this notion is not true because it requires high-intensity physical movements for a relatively short duration as compared to a five-day Ranji or Test match. Cricketers often want to participate in all three formats of the game and for that certain level of physical and motor fitness is essential. It has been reported in studies that test cricket requires fitness suitable for low-intensity movements. Due to ever-increasing popularity, attention has been paid to determining factors that affect the playing ability of cricket players. In this context, physical and motor fitness variables come in the list but their effect on the playing ability of cricket players is not consistent. Hence the present study was planned to assess the association of selected physical and motor fitness variables on the playing ability of male cricket players.

Logeswaran et al. (2022) reported that endurance training is useful in enhancing the aerobic capacity of cricket players. Vaka and Vijaymohan (2022) reported that batting performance is not influenced by some of the motor fitness components namely speed, strength, agility and endurance. Khan et al. (2019) in a study that aerobic capacity is higher in cricket players from high-altitude regions as compared to low-altitude regions. Suresh Kumar et al. (2019) reported that speed, agility, shoulder movement and strength, explosive strength of the upper extremity and quickness were found to be contributing significantly to the performance index of cricket players. Prakash (2018) did not report any significant association between playing ability and motor fitness of cricket players. Dar (2016) reported that aerobic training can be used to enhance aerobic fitness in cricket players. Nunes (2006) in a study reported that physical-motor ability contributes immensely to a batsman's success.

The objective of the present study was to evaluate the association between selected physical and motor fitness variables with the playing ability of male cricket players. In the present study, it was hypothesized that selected physical and motor fitness variables will show a significant association with the playing ability of male cricket players.

2. METHODOLOGY

The following methodological steps were taken to conduct the present study.

2.1 Sample -

To conduct the study 150 male cricket players from Himachal Pradesh were selected. The sample includes Ranji trophy probable, interuniversity and intercollegiate level male cricket players and the age range of the sample was 19 to 32 years. Random sampling was used for the selection of the sample.

2.2 Tools

2.2.1 Physical and Motor Fitness Tests

Power Test (Vertical Jump) was conducted with the help of a wall-mounted board. Speed testing was done with the help of a 20-meter and 40-meter speed trial.

Run a three was used to assess the agility of the subject while repeated sprint ability was used to assess the anaerobic capacity of the subjects.

Push-up and chin up were measured with the standard procedure while Yo-Yo intermittent recovery test was used to assess the aerobic capacity of the selected subjects.

2.2.2 Playing Ability

The playing ability of cricket players was evaluated by three judges panel on a scale ranging from 0 to 10. The judges gave ratings to the performance of each player in an actual match-like situation.

2.2.3 Procedure

150 male cricket players were selected and put into the abovementioned physical and motor fitness test batteries. Scores on each battery is tabulated and the Pearson correlation coefficient was computed. Results are given in Table 1 along with the coefficient of determination.

3. DATA ANALYSIS

TABLE 1
VALUE OF CORRELATION (R) BETWEEN PHYSICAL FITNESS VARIABLES AND PLAYING ABILITY OF CRICKET PLAYERS (N=150)

Physical Fitness Variables	Playing Ability of Cricket Players		Coefficient of Determination
Vertical Jump	'r'	0.503**	0.253
20m Run	'r'	-0.161**	0.025
40m Run	'r'	-0.140**	0.019
Run a Three	'r'	-.486**	0.236
Repeat Sprint	'r'	0.483**	0.233
Chin-up	'r'	0.018	0.0003
Push-up	'r'	0.105*	0.015
YoYo Test	'r'	0.491**	0.241

** Significant at .01 level; r(df=148) = 0.10 at .05 level; 0.11 at .01 level.

A perusal of Table 1 gives the following inferences :

The Pearson correlation coefficient 'r' between vertical jump and playing ability of male cricket players was computed and it comes out to be 0.503. It shows that an increase in vertical jump scores also sees an increase in the playing ability of male cricket players at .01 level of statistical validation. The coefficient of variation (0.253) denotes that vertical jump creates a 25.3% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between 20-meter run timings and the playing ability of male cricket players was computed and it comes out to be -0.161. It shows that an increase in 20-meter run timings invariably decreases the playing ability of male cricket players. The coefficient of variation (0.025) denotes that 20-meter run timings create a 2.5% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between 40-meter run timings and the playing ability of male cricket players was computed and it comes out to be -0.140. It shows that an increase in 40-meter run timings invariably decreases the playing ability of male cricket players. The coefficient of variation (0.019) denotes that 40-meter run timings create a 1.9% variance in playing ability of male cricket players.

The Pearson correlation coefficient 'r' between run a three timings and the playing ability of male cricket players was computed and it comes out to be -0.486. It shows that an increase in timings in run a three test invariably decreases the playing ability of male cricket players. The

coefficient of variation (0.236) denotes that run a three timings creates a 23.6% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between repeat sprint scores and the playing ability of male cricket players was computed and it comes out to be 0.483. It shows that an increase in repeat sprint scores invariably increases the playing ability of male cricket players. The coefficient of variation (0.233) denotes that repeat sprint creates a 23.3% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between chin-up scores and playing ability of male cricket players was computed and it comes out to be 0.018 and indicates statistically non-significant validation at the significance level.

The Pearson correlation coefficient 'r' between pushup scores and the playing ability of male cricket players was computed and it comes out to be 0.105. It shows that an increase in pushup scores invariably decreases the playing ability of male cricket players at .05 level of statistical significance. The coefficient of variation (0.015) denotes that pushup scores create a 1.5% variance in the playing ability of male cricket players.

The Pearson correlation coefficient 'r' between Yo-Yo test scores and the playing ability of male cricket players was computed and it comes out to be 0.491. It shows that an increase in Yo-Yo test scores invariably increases the playing ability of male cricket players. The coefficient of variation (0.241) denotes that Yo-Yo test scores create a 24.1% variance in the playing ability of male cricket players.

RESULTS

1. The lower body power was found to be significantly correlated with the playing ability of male cricket players. Hence increase in lower body power also increases the playing ability of male cricket players.
2. The explosive ability, rate of force development, and maximal running velocity was found to be significantly correlated with the playing ability of male cricket players. The negative correlation shows that improved timings on 20 meter and 40 meters happen to improve the playing ability of male cricket players.
3. Agility was found to be significantly correlated with the playing ability of male cricket players. Hence increase in agility also increases the playing ability of male cricket players.
4. The anaerobic power was found to be significantly correlated with the playing ability of male cricket players. Hence increase in anaerobic power also increases the playing ability of male cricket players.
5. Upper body strength was found to be significantly correlated with the playing ability of male cricket players. Hence increase in upper body strength also increases the playing ability of male cricket players.
6. Endurance was found to be significantly correlated with the playing ability of male cricket players. Hence increase in endurance also increases the playing ability of male cricket players.
7. The aerobic capacity was found to be significantly correlated with the playing ability of male cricket players. Hence increase in aerobic capacity also increases the playing ability of male cricket players.

DISCUSSION:

In the present study, aerobic capacity, anaerobic power, lower body power, maximum running velocity and upper body strength were found to be significant predictors of the playing

ability of male cricket players. Vaka and Vijaymohan (2022) reported no significant association between fitness variables with sports performance. Suresh Kumar et al. (2019) reported that speed, agility, shoulder movement and strength, explosive strength of the upper extremity and quickness were found to be contributing significantly to the performance index of cricket players. The result of the present study is consistent with that of the study conducted by Suresh Kumar et al. (2019) which is not surprising because modern-day cricket needs speed, power and stamina to execute game-related technical and tactical skills.

CONCLUSION

Based on the results, it was concluded that selected physical and motor fitness variables are essential aspects of the playing ability of male cricket players and thereby a scientific fitness training plan is necessary for male cricket players for the betterment of their playing ability.

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