

A Comparative Study of the Physical Fitness of Fast Bowlers of Various States of India

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Abstract

It has been observed over the last few decades that the popularity of cricket in the Asian subcontinent is consistently very high. Majorly the dynamic nature of the game as well as the uncertainty associated with it make the game of Cricket very interesting no matter at what level it is being played. Moreover, the skills acquired during the training process make the cricketer an asset for a fairly longer period of time compared to many outdoor games. Moreover, there are complex demands in competitive cricket that require a combination of individual skills, team plays, tactics, and motivational aspects to achieve optimum performance.

Key Words: Physical fitness, fast bowlers, Indian context

1.0 Introduction

It has been observed over the last few decades that the popularity of cricket in the Asian subcontinent is consistently very high. Majorly the dynamic nature of the game as well as the uncertainty associated with it make the game of Cricket very interesting no matter at what level it is being played. Moreover, the skills acquired during the training process make the cricketer an asset for a fairly longer period of time compared to many outdoor games. Moreover, there are complex demands in competitive cricket that require a combination of individual skills, team plays, tactics, and motivational aspects to achieve optimum performance. However, to satisfy these demands cricketers are now wisely selected and well trained at all level of the game. Not surprisingly, the involvement of scientifically substantiated methods of selecting and training the cricket players has taken the level of game to an altogether different level. Although the game of cricket has three main departments which are bowling, batting

and fielding, bowling needs a mix of best skills as well as physical fitness to perform at the highest level.

The bowling is one of the main aspects of cricket, and it has two sub-areas, Fast Bowling and the other being Spin Bowling. All forms of bowling demand that the bowler be hundred percent fit physically as well as mentally (as a lot of patience and perseverance is needed). Fast bowling basically is a science, craft and an art, demanding real study and applications, however, great performance can only be achieved if the player has supreme level of fitness. This physical fitness can be achieved by the players if adequate attention is paid towards it when the players are relatively young. Moreover, this is very important as the demand of fast bowlers in India is growing at an alarming rate at all levels like, at National State and University level. Since, not much work is done to know the physical fitness of the fast bowlers of different area; this study has been carried out to understand this aspect. In view of the above, the purpose of the study was to assess the physical

fitness of fast bowlers of different states of India.

2.0 Research Methodology

The purpose of the study was to compare the selected physical fitness variables among various level cricket fast bowlers of different states. For this study fast bowlers representing their state teams in under-19, under-25 and Ranji Trophy teams from states of Vidarbha, Madhya Pradesh, Rajasthan, Uttar Pradesh and Railways served as subjects for the present study. The selected variables were assessed by using standard methods. The criterion measures were flexibility (determined using sit and reach test), muscular endurance (determined by using sit ups rest), muscular strength (determined by using pull ups rest) and agility (determined by using shuttle run rest).

Table 1: Flexibility of Fast Bowlers

Cricket Players	N	Mean	±SD	Min	Max	F	Sig.
Under - 19 years	50	11.4	±3.5	6.0	23.0	.413	.663
Under - 25 years	50	11.1	±3.1	6.0	19.0		
Ranji Level	50	10.8	±4.0	5.0	24.0		

SD: Standard Deviation; **Min:** Minimum; **Max:** Maximum; **F:** F Ratio; **Sig.** Probability Value

Above table 1 presents results of the comparative assessment of the fast bowlers of different age groups with respect to their flexibility. The results revealed that the average sit and reach test score of the fast bowlers of under 19 years age group

Reliability of the tests and Statistical Procedure employed

The reliability of data was ensured by establishing the reliability of test by test-retest method and tester competency. The statistical analysis of the collected data was carried out using SPSS 20 software. The descriptive statistics such as means and standard deviations were calculated and the comparative assessment was done using One Way Analysis Of Variance test and sub set of alpha was obtained using Tuckey's B test. The level of significance was chosen to 0.05.

3.0 Results and Discussion

3.1 Flexibility of Fast Bowlers

was 11.4±3.5 cm, while that of fast bowlers belonging to the under 25 years age group was 11.1±3.1cm. In addition to above, the average sit and reach test score o the Ranji level fast bowlers was 10.8±4.0 cm.

Means for groups in homogeneous subsets (flexibility test) are displayed (Tukey B test)

Fast bolwers	N	Subset for alpha = 0.05
		1
Ranji Level	50	10.8
Under - 25 years	50	11.1
Under - 19 years	50	11.4

3.2 Muscular endurance of Fast Bowlers

Table 2: Muscular endurance of Fast Bowlers

Cricket Players	N	Mean	±SD	Min	Max	F	Sig.
Under - 19 years	50	35.6	±6.1	20.0	47.0	3.690	.027
Under - 25 years	50	38.1	±4.5	31.0	45.0		
Ranji Level	50	36.1	±4.2	26.0	48.0		

SD: Standard Deviation; **Min:** Minimum; **Max:** Maximum; **F:** F Ratio; **Sig.** Probability Value

Above table 2 presents results of the comparative assessment of the fast bowlers of different age groups with respect to their muscular endurance. The results revealed that the average sit ups test score of the fast bowlers of under 19 years age

group was 35.6±6.1, while that of fast bowlers belonging to the under 25 years age group was 38.1±4.5. In addition to above, the average sit ups test score of the Ranji level fast bowlers was 36.1±4.2.

Means for groups in homogeneous subsets (muscular endurance test) are displayed (Tukey B test)

Cat-players	N	Subset for alpha = 0.05	
		1	2
Under - 19 years	50	35.6	
Ranji Level	50	36.1	36.1
Under - 25 years	50		38.1

3.3 Muscular strength of Fast Bowlers

Table 3: Muscular strength of Fast Bowlers

Cricket Players	N	Mean	±SD	Min	Max	F	Sig.
Under - 19 years	50	8.5	±3.1	1.0	14.0	23.808	.000
Under - 25 years	50	10.0	±2.6	3.0	16.0		
Ranji Level	50	6.1	±2.8	1.0	12.0		

SD: Standard Deviation; **Min:** Minimum; **Max:** Maximum; **F:** F Ratio; **Sig.** Probability Value

Above table 3 presents results of the comparative assessment of the fast bowlers of different age groups with respect to their muscular strength. The results revealed that the average pull ups test score of the fast bowlers of under 19 years

age group was 8.5±3.1, while that of fast bowlers belonging to the under 25 years age group was 10.0±2.6. In addition to above, the average pull ups test score of the Ranji level fast bowlers was 6.1±2.8.

Means for groups in homogeneous subsets (muscular strength test) are displayed (Tukey B test)

Cat-players	N	Subset for alpha = 0.05		
		1	2	3
Ranji Level	50	6.1		
Under - 19 years	50		8.5	
Under - 25 years	50			10.0

3.4 Agility of Fast Bowlers

Table 4: Agility of Fast Bowlers

Cricket Players	N	Mean	±SD	Min	Max	F	Sig.
Under - 19 years	50	10.1	±0.3	9.4	11.3	7.859	.001
Under - 25 years	50	9.9	±0.3	9.4	10.6		
Ranji Level	50	10.2	±0.3	9.5	11.3		

SD: Standard Deviation; **Min:** Minimum; **Max:** Maximum; **F:** F Ratio; **Sig.** Probability Value

Above table 4 presents results of the comparative assessment of the fast bowlers of different age groups with respect to their agility. The results revealed that the average shuttle run test score of the fast bowlers of under 19 years age group was

10.1±0.3sec, while that of fast bowlers belonging to the under 25 years age group was 9.9±0.3sec. In addition to above, the average shuttle run test score of the Ranji level fast bowlers was 10.2±0.3sec.

Means for groups in homogeneous subsets (agility test) are displayed (Tukey B test)

Cat-players	N	Subset for alpha = 0.05	
		1	2
Under - 25 years	50	9.9	
Under - 19 years	50		10.1
Ranji Level	50		10.2

4.0 Conclusions

4.1 Flexibility of Fast Bowlers

- The comparative assessment of the test score (using the ANOVA test) indicated that there is no significant difference in the flexibility of the fast bowlers belonging to different groups.

4.2 Muscular endurance of Fast Bowlers

- The comparative assessment of the test score indicated that there is significant (P<0.05) difference in the muscular endurance of the fast bowlers belonging to above mentioned groups. Specifically, the fast bowlers belonging to under 25 age group indicated better muscular endurance.

4.3 Muscular strength of Fast Bowlers

The comparative assessment of the test score indicated that there is significant (P<0.05) difference in the muscular strength of the fast bowlers belonging to above mentioned groups. Specifically, the fast bowlers belonging to under 25 age group indicated better muscular strength.

4.4 Agility of Fast Bowlers

- The comparative assessment of the test score indicated that there is significant (P<0.05) difference in the agility of the fast bowlers belonging to above mentioned groups. The comparative assessment showed that the fast bowlers belonging to under 25 age group indicated better agility than others.

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