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Analysis of relationship between motor fitness and sports performance among high performer cricketers

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Abstract

The present study was designed to assess the relationship between motor fitness and sports performance among cricketers. Sixty four (N=64) cricketers who secured positions in intercollege competition of Panjab University, Chandigarh were selected as subjects for the present study. The motor fitness variable; shoulder strength, abdominal strength endurance, agility, explosive leg power, speed and cardiovascular endurance were measured by employing pull-ups, sit-ups, shuttle run (4X10Mts.), standing broad jump, 50 yard dash and 600 yard run/walk tests respectively. Pearson's Product-movement correlation test was used to examine the relationship between motor fitness variables and sports performance among cricketers. The Results of the present study indicated that motor fitness variables positively contribute towards better sports performance among cricketers.

Keywords: Motor fitness, sports performance, cricketers

Introduction

Like other sports, cricket is a game in which fitness is generally considered as very important. The achievement in the 1990s and 2000s of the world beating Australian team has been credited to their demonstrable skill, and to some extent to the way they tended to their fitness. The other test playing countries have legitimately put more accentuation on fitness as of late and are receiving the rewards. With the introduction of one day Cricket and all the more as of late Twenty 20, the amusement has experienced significant changes and the physical requirements made on a cricketer's body have additionally increased drastically (Jyoti, 2018) [5]. The human body and the effectiveness with which it functions was probably the most proficient machine ever seen in the history of mankind. Human body was intended for physical performance (Miller & Allen, 1982) [6]. Early men were physical educators. They developed their bodies and could run, jump, climb and throw efficiently. The components of physical fitness that are practiced today existed at that time (Nixon & Cozens, 1966) [7]. Man is built for movement and physical activity. Sports participation and appreciation have become integral part of lives. The exercise and participation in sports is beneficial was recognized as long ago as 380 B.C. when Plato, the great Greek Philosopher wrote, "Lack of activity destroys the good condition of every human being while movement and methodical exercise save and preserve it." Sports by their very nature are challenging, enjoyable, all-absorbing and require certain amount of skill and physical conditioning. Primitive man received most of the exercise through the ordinary daily pursuit that were necessary for him to earn a livelihood. They engaged in activities of a war like nature, and in time of peace practiced, these skills as a recreational past time. He has to excel to make himself eligible for a higher level of competition. Circumstances and chances play a major role in the present day system for an athlete to come up to the highest level of competition. More over due to a sheer chance an individual has participated in an event and has won the competition he or she is likely to specialize in that event without any further guidance or instruction. This may be applicable to most of sports events. Motor fitness is gauged by performance and this performance is based on a composite of many factors. The most commonly mentioned fitness factors are strength, endurance, power, speed, co-coordinative ability, balance, flexibility. Some of these factors evidently are more dominant than others and thus have a higher relationship with motor fitness.

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Motor fitness is made up of factors that seem more dynamic such as strength and endurance. Minimum standards of motor fitness may be achieved over a short period of time. By the same token, fitness is lost unless it becomes a product of day to day living. Motor fitness is a complex concept. A number of factors enter into efficient performance whether it is mainly of strength, speed, endurance, or skill. There is not one thing alone, but a combination of factors such as body type or structure, kinesthetic sense, flexibility and organic functioning which comprise motor fitness (Gaur & Nigam, 2011)^[3].

Motor fitness was the ultimate measure of the all the elements of physical fitness. Earlier, a person's physical fitness was measured by the efficiency and duration spent on the work performed. This work could be in an industry, on the fields or on the ground. People might not understand the basic anatomy or physiology of the human body but they could judge and admire the stupendous exhibition of speed, strength and endurance. While testing motor fitness, one should not forget other significant elements like aggression, swiftness in learning, cooperation and educability (Brock *et al.*, 1941)^[1].

Motor development is presumed as the development of strength, speed, agility, power and precision in the use of arms and legs and other body muscles and coordinative abilities. Haag and Singer (1979)^[4] are of the opinion that superb physical fitness and the best training of an individual ultimately help in achieving high performance. The success and failure of the child often depends on his/her capabilities in applying his motor abilities to a particular task. Various studies in the field of basketball revealed that motor fitness plays a significant role in performance even if the team consists of highly skilled technically sound and experienced players.

While considering the importance of motor fitness and sports performance, the present study was designed to assess the relationship between selected motor fitness variables and sports performance among high performer cricketers.

Methodology

A total sixty four (N=64) college level cricketers from affiliated colleges of Panjab University, Chandigarh who secured positions in *inter-college competitions* were selected to act as subjects for the present study. The motor fitness variable; shoulder strength, abdominal strength endurance, agility, explosive leg power, speed and cardiovascular

endurance were measured by employing pull-ups, sit-ups, shuttle run (4X10Mts.), standing broad jump, 50 yard dash and 600 yard run/walk tests respectively. Pearson's Product-movement correlation test was used to examine the relationship between motor fitness variables and sports performance among cricketers. The level of significance was set at 0.05.

Results

Relationship between selected motor fitness variables and sports performance among high performer cricketers has been presented in table-1.

Table 1: Relationship between selected motor fitness variables and sports performance among high performer Cricketers

S. No.	Variables	Correlation (r)	P-value (sig.)
1.	Pull-Ups	.041	.746
2.	Sit-Ups	.384	.002*
3.	Shuttle Run	.465	.000*
4.	Standing Broad Jump	.500	.000*
5.	50 Yard Dash	.571	.000*
6.	600 Yard Run/Walk	.363	.003*

*Significant at 0.05 Level

Table-1 indicates the results with regard to the relationship between motor fitness and sports performance among high level cricket performers. The significant relationship ($p < 0.05$) between motor fitness and high-level cricket performance was observed. The significant relationship with regard to motor fitness and its sub-variables i. e. Sit-Ups with $r = .384$ and p-value (Sig.) = .002, Shuttle Run $r = .465$ and p-value (Sig.) .000, Standing Broad Jump $r = .500$ and p-value (Sig.) .000, 50 Yard Dash with $r = .571$ and p-value (Sig.) .000, 600 Yard Run/Walk $r = .363$ and p-value (Sig.) = .003. However, insignificant ($p > 0.05$) relationship was found with regard to sub- variable; Pull-Ups with sports performance as the obtained $r = .041$ and p-value (Sig.) .746.

It is therefore, evident that abdominal strength endurance, agility, explosive leg power, speed, and cardiovascular endurance contribute towards the better cricket playing ability.

Relationship between selected motor fitness variables and sports performance among high level cricket performers has been depicted in figure-1.

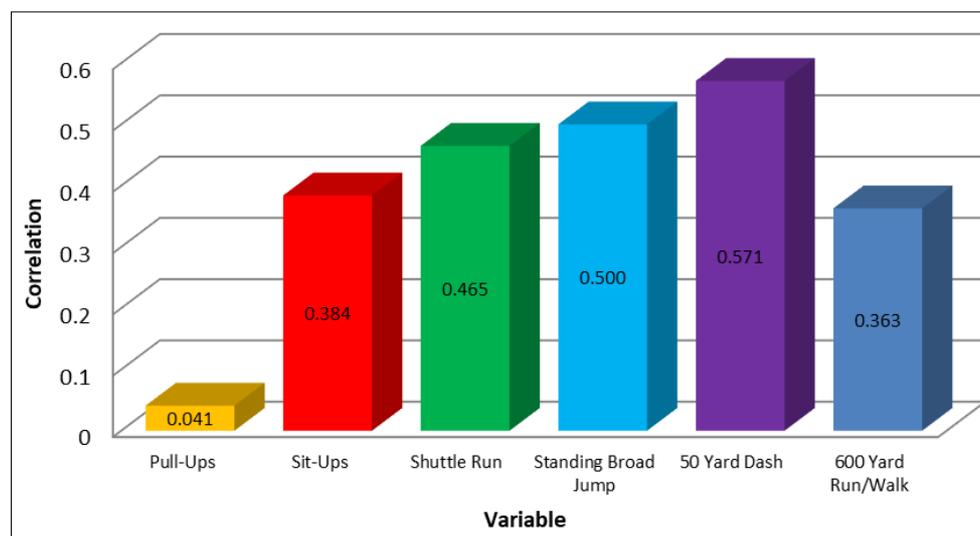


Fig 1: Graphical representation of relationship between selected motor fitness variables and sports performance among high level cricket performers.

Discussion

The analysis of data pertaining to relationship of motor fitness variables with sports performance among cricketers revealed positive significant relationship with regard to the sub-variables; abdominal strength endurance, agility, explosive leg power, speed, and cardiovascular endurance. However, insignificant relationship between sports performance and motor fitness sub-variable; shoulder strength was noticed. The positive significant relationship indicates that motor fitness variables are contributing factor in high level cricket performance. A good cricketer requires high level of motor fitness in addition to other factors for producing high performance. The outcome of study might be due to the fact that the cricket performance is complex phenomena and direct bio-product of motor movements. Hence, the optimum level of abdominal strength endurance, agility, explosive leg power, speed, and cardiovascular endurance is essential to perform the cricketing skills efficiently with requisite grace, accuracy and prolonged duration. The insignificant association between motor fitness component; shoulder strength endurance and cricket performance was observed as the shoulder strength endurance is also an indispensable factor of cricket performance, especially among pace bowlers but the present study was conducted on batsmen, all-rounders and spin bowlers which might have hindered the association between these two variables. The findings of the present study are in line with the findings of Parkash (2018) ^[8] which clearly explicated that motor fitness had considerable relationship with the playing ability of the junior level Cricket players. The result of present study are also supported by the findings of Gangey and Kerketta (2016) ^[2] while indicating positive significant relationship between volleyball performance and motor fitness component: agility, coordination and reaction time of Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh.

Conclusion

It is concluded that better motor fitness is associated with better sports performance among cricketers. The motor fitness components are detrimental factors contribute towards better performance in cricket. Therefore, it is recommended that coaches, sports trainers and players involved in the process of sports training should take utmost care of motor fitness improvement of their sports persons as it has already been established by various researches that the variable in question is an important factor for superior sports performance.

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