



ISSN: 2456-0057
IJPNPE 2017; 2(2): 619-621
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www.journalofsports.com
Received: 07-05-2017
Accepted: 09-06-2017

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Correlation between Bio-Mechanical and Anthropometrical Variables to the Performance of Medium Pace Bowlers

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Abstract

The main aim of the study was to examine the correlation between biomechanical and anthropometrical variables to the performance of medium pace bowlers. Seven male cricket players who represented Pt. NRS Govt. College Cricket Team at Zone-A Cricket Tournament were chosen as subjects for this study. Angle of ankle joint, knee joint, elbow joint, shoulder joint, height of centre of gravity for chosen biomechanical variables and for chosen anthropometrical variables i.e height, sitting height, leg length, arm length, weight were considered as the variables of this study. The correlation between biomechanical and anthropometrical variables to the performance of medium pace bowlers was calculated by using Pearson's product moment correlation. For testing hypothesis the level of significance was set at 0.05. In case of biomechanical variables had exhibited vital correlation with the performance of players in medium pace bowling. The obtained value of co-efficient of correlation of chosen anthropometrical variables at the moment is released. Only the height and leg length had vital correlation with the performance of subjects in medium pace bowling.

Keywords: biomechanical variables, anthropometric variables, cricketers

Introduction

All movements of fabric bodies, each men and animals are subject, while not exception, to the law of mechanics as each movement involves mechanical movement and also the locomotion of components of mass in space and time it's the only first task of science to acknowledge this it's necessary to create this qualification, as a result of movement isn't only locomotion, however is also a amendment in quality in fields above the purely mechanical. anthropometrical activity were central considerations of the primary section of the scientific era of measurement, that began within the 1860's Current interest in anthropometrical activity focuses on 3 areas growth measures physique and body composition. These are of such measure embrace classification prediction of growth pattern and prediction of success in motor skills also as assessment of fleshiness. Activity of body sine includes descriptive data as height, weight, and areas, whereas measure of body proportion describes correlation between height and weight and among lengths, widths and circumference of varied body segments. It has been found that elite athletes in some sports tend to possess those proportion that biomechanical aid the actual performance. The role of Biomechanics in achieving high performance can't be over looked. Since, it's the only scientific that facilitate to identify the faults in playing technique terribly exactly.

There are essentially two ways by that motor ability will be analysed. They're the qualitative and quantitative technique. High speed motion-picture film for exactitude has been used extensively to look at in nice details of the movements of the body that occur to quick for the human eye to observe. In several of the elite sport coaching and research institution round the world, force applied throughout high calibre sporting event. Whereas the analysis check have done abundant to enhance understanding of movement and also the performance of elite athletes, the analysis tasks featured by the coach are preponderantly qualitative in nature. therefore people that are operating in this field should have a basic data concerning how a body moves, what are the key teams of muscles, joints and in what proportions and degree they're to be accustomed get an optimum output. This approximately will offer an

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Understanding of the nature of any ability, their economic method of execution and their dependent factors that in turn will build into an of the larger scheme of economic movement. Medium pace bowlers rely additional on accuracy and movement of the seam. Spinners should be even a lot of accurate. A loose ball bowled at slow speed could be a gift to any batsman. Spin bowlers flight the ball through the air and use a variety of spin off the pitch to deceive the batsman.

Statement of the Problem

The main aim of the study was to examine the correlation between biomechanical and anthropometrical variables to the performance of medium pace bowlers.

Methodology

The objective of the study was to examine the correlation between biomechanical and anthropometrical variables to the performance of medium pace bowlers. Seven male cricket players who represented Pt. NRS Govt. College Cricket Team

at Zone-A Cricket Tournament were chosen as subjects for this study. Since the players had been trained for a considerable period of time, they were considered skilled and their technique was treated as stabilized. The correlation between biomechanical and anthropometrical variables to the performance of medium pace bowlers was calculated by using Pearson’s product moment correlation. For testing hypothesis the level of significance was set at 0.05.

Findings

Correlation of Chosen Biomechanical Variables to the Performance of Medium Pace Bowlers

In order to determine the Correlation of Chosen Biomechanical Variables specifically angle of ankle joint, knee joint, elbow joint, shoulder joint and height of centre of gravity with the performance of subjects in medium pace bowling, the product moment correlations were calculated at moment release. The results are present in the table- 1.

Table 1: Correlation of Chosen Biomechanical Variables to the Performance of Medium Pace Bowlers.

S. No	Variables	Coefficient of correlation 'r' at moment Release.
1	Ankle Joint Left leg (Front leg)	0.36
2	Knee Joint Left leg (Front leg)	0.03
3	Elbow Joint (Bowling arm)	0.20
4	Shoulder Joint (Bowling arm)	0.46
5	Ankle Joint Right Leg (Rear leg)	0.6
6	Knee Joint (Rear leg)	0.58
7	Elbow Joint (Left arm)	0.69
8	Shoulder Joint (left arm)	0.25
9	Height of centre of Gravity	0.84

Table – 1 indicates that none of the biomechanical variable particularly angles of ankle joint, elbow joint, shoulder joint, knee joint and Height of centre of gravity at moment release have significant correlation to the performance of medium pace bowler. Although the value of constant of correlation in case of ankle joint (Rear leg) and Height of Centre of gravity has exhibited quite high however wasn't found significant at the chosen level of 0.05.

Correlation of Chosen Anthropometrical Variables to the Performance of Medium Pace Bowlers

In order to seek out the correlation of chosen anthropometrical variables particularly height, sitting height, leg length, arm length and weight with the performance of subject in medium pace bowling Pearson’s product moment correlation was used. The results are present in the Table- 2.

Table 2: Correlation of Chosen Anthropometrical Variables to the Performance of Medium Pace Bowlers.

S. No	Variables	Coefficient of correlation
1	Height	0.92*
2	Sitting Height	0.2
3	Arm length	0.34
4	Leg length	0.87*
5	Body weight	0.04

The finding of table – 2 revealed that the peak and leg length shoed significant correlation (r=0.92 and 0.87 respectively) wherever the value of constant of correlation is higher than the tabulated value (r=0.878) at 0.05 level of significant. All different chosen anthropometrical variables do not show any significant correlation to the performance of medium pace bowler because they obtained worth are but the desired value

to be significant at 0.05 level of significance.

Discussion

The obtained value of co-efficient of correlations of chosen anthropometrical variables at the moment is release. Only the height and leg length have important correlation to the performance of medium pace bowlers. In case of biomechanical variables none of the biomechanical variable has exhibited important correlation to the performance medium pace bowler. It’s going to be because of small size of the sample. It’s a familiar proven fact that greater radius of rotation creates bigger momentum however angle at elbow joint bowling arm doesn't exhibited important relationship which can be due to different reasons. As an entire the variables that have shown high correlation to the performance should have contributed towards the performance of subject in medium pace bowler. Beside these variables, different motor components also should have contributed to the performance. The other variables don't mean that the variables may need not contributed to the performance. They are doing contribute to the performance. However the insignificant values of co-efficient of correlation of such variable with the performance may need been because of the small size of the sample and non-availability of refined equipment’s. Since the results have shown important relationship of few designated biomechanical and anthropometrical variables to the performance of medium pace bowler, the null hypothesis is rejected, but in case of alternative variables the hypothesis is accepted.

Conclusions

Bases on the analysis and among the restrictions of the current study the conclusions are often drawn: In anthropometrical

variable height has shown positive impact on the performance of cricket player in medium pace bowling. Leg length conjointly has shown positive impact on performance of Players in medium pace bowling in cricket. In biomechanical variables only height of centre of gravity of subjects shown relationship i.e. inclination of the body at time of unleash with the performance of cricketers in medium pace bowling though they obtained value of co-efficient of correlation wasn't important.

Recommendations

Based on the conclusions drawn during this study, the recommendations are made: The results could also be utilized by physical education Teacher whereas choosing the cricket players. Whereas choosing Players the variables like height, leg length is also kept in mind because the factors conducive to the performance of players of in medium pace bowling. The results of the study could also be useful to the physical education teachers and coaches to judge the performance of their players. The results of the study could also be utilized by the cricket players for self-evaluation of their performance. Similar studies could also be conducted by using subtle equipment's and subjects of various level and sex.

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