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Evaluation of speed and power among school level male cricket players

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Abstract
The purpose of this study was to compare the speed and power among school level male cricket players. A total numbers of 45 cricket players (District-15, State-15 and National-15) were selected from Punjab Region. For the assessment of power of legs, Standing Broad Jump test was used and to determine speed 30 yard dash test was applied. One way Analysis of Variance (ANOVA) was applied to find out the intra-group differences and where the 'F' ratio found significant then Scheffe's Post-hoc test was applied to find out the direction and degree of differences. The 0.05 level of significance was set for the analysis of the results. The findings of the statistical analysis revealed that there is significant inter group difference ($P \leq 0.05$) among school level cricket players in respect to Speed and Power.

Keywords: Speed, power among school level male, cricket players

Introduction
Today Sports and games are competitive in nature; Sports performance has taken a great leap over the last twenty years. The performance of players is influenced by numerous factors such as physical fitness level, physiological abilities, technique, tactics, physique, body composition, body size and application of bio-mechanical principles (Ortega F.B. *et. al.* 2008) [5]. Cricket is a demanding sport; players spend an extended day on their feet, there are periodic fast sprints while batting, chasing down the ball, bowling, plus several dynamic movements such as throwing, leaping and turning quickly. It is also necessary for people to retain and improve their physical fitness in order to satisfy healthy, high quality of daily life (Tanaka *et al.,* 2004) [9]. Technology has boosted our level of performance greatly through better-quality equipment and nutritional product. As physical fitness concern, the rural school going students having greater physical fitness than the urban students (Gaurav, V. *et al.,* 2015) [4]. The training schedule of a player's plays a vital role in their performance. The training program of experimental group analysis determines increased in the explosive power and agility of players (Singh, A. *et al.,* 2014) [7, 8]. Here is no hesitation in saying that wide-ranging work has been testified in the area of speed and power during last decade and these concepts have prolonged application in sports fields and human activity. As far as speed and power for school level cricket players are concerned, we could not discover any rigorous investigation report. That's why we definite to take this effort by considering cricket player as our area of study. This study is an effort to discover the possibility of there could be a important inter group with regard to speed and power among cricket players.

Subjects
For the purpose of the present study, forty five (N=45) male cricketers representing their district, state and national at school level in a competition from the year 2014 to 2017. The age group of 16-18 years was selected as subjects, who were includes in playing eleven of their teams. The subjects were purposively assigned into three groups: Group-A: District (N_1=15); Group-B: State (N_2=15) and Group-C: National (N_3=15). All the subjects were informed about the objective and protocol of the study.

Methodology
The study was conducted on selected physical fitness components i.e. speed and power of school level male cricket players.

The necessary data was collected with the help of two tests. Standing broad jump test was used to assess the explosive power of the legs and 30 yards dash test used to measure the speed of cricket players.

Statistical analyses

The Statistical Package for the Social Sciences (SPSS) version 16.0 was used for all the analyses. One way Analysis of Variance (ANOVA) was applied to find out the intra-group differences and where the 'F' ratio found significant then Scheffe's Post-hoc test was applied to find out the direction and degree of differences. The 0.05 level of significance was set for the analysis of the results.

Results

Table 1: Mean & SD of District, State and National level Male Cricket Players with regard to Speed and Power

Variable	District		State		National	
	Mean	SD	Mean	SD	Mean	SD
Speed (Sec.)	6.25	0.45	5.77	0.49	5.52	0.46
Power (Cm)	165.26	4.25	174.36	4.28	177.27	7.30

Table 1 exhibited the Mean and SD values of Speed and Power among school level male Cricketers. While comparing the means, it revealed that National Level Cricketers have better Speed and Power than their Counterparts.

Table 2: Analysis of Variance (ANOVA) Results with regard to Speed and Power among District, State and National Level Cricket Players

Variables	Source of variance	Sum of Squares	df	Mean Square	F-ratio	p-value
Speed	Between Groups	4.053	2	2.026	9.296	0.000*
	Within Groups	9.155	42	0.218		
	Total	13.208	44			
Power	Between Groups	1177.094	2	588.547	19.688	0.000*
	Within Groups	1255.545	42	29.894		
	Total	2432.639	44			

Table-2 indicates that significant differences were found with regard to the Speed and Power among District, State and National level Cricket Players as the $p \leq 0.05$ was found smaller than level of significance 0.05. Since the obtained F-ratio of Speed recorded as 9.296 and Power recorded as 19.688 was found significant, therefore, Scheffe's post-hoc test was employed to study the direction and significance of differences between paired means among District, State and National level Cricket players in respect to Power.

Table 3: Analysis of Scheffe's post hoc test with regard to Speed and Power among District, State and National level Cricket Players

Variable	District	State	National	Mean Difference	Sig.
Speed	6.25	5.77		0.58	0.026*
	6.25		5.52	0.73	0.001*
		5.77	5.52	0.25	0.376
Power	165.26	174.36		9.10	0.000*
	165.26		177.27	12.01	0.000*
		174.36	177.27	2.91	0.356

Table-3 indicates that national level cricketers had significantly much better Speed and Power than district level cricketers. State level cricketers had also found superior on account of Speed and Power than district level cricketers. However, there was not a significant difference found between national and state level cricketers.

Discussion

The results of speed in the present study is supported by the results of Aranga, P. (2015) [3] as he found significance differences among kho-kho (Men & Women) and kabaddi (Men & Women) players, men kho-kho players were better speed than other categories of players. The results of present study also partially in line with the study of Senthikumar, P. (2015) [6]. As he compare and found significance differences in respect to speed, agility and strength endurance between kabaddi players and kho-kho players. The results of power in the present study are supported by the results of Singh, B. and Saini, S. (2014) [8]. They found significant differences among district, state and national level cricket players on the sub-variables; muscular strength, muscular power. Study also gets support from Akilan, N. & Chittibabu, B. (2014) [2] study as they found that volleyball players have greater leg explosive power than handball players.

Conclusions

It is concluded that significant inter group differences have been found among school level cricketers with regard to the variables speed and power. National and State level cricketers had significantly better Speed and Power than district level cricketers

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