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Analysis of the Selected Skill Related Variables of the Junior Volleyball Men Teams in the FIVB World Championship during the year 2011

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Abstract

The purpose of the study was to analyse the selected physical variables of the Junior Volleyball men teams in the World Championships during the year 2011. To achieve the purpose of the study, top eight teams of Junior World Championships during the year 2011 were selected. The top eight teams were from Russia, Argentina, Serbia, USA, Brazil, Iran, Spain and India. Spike jump reach and block jump reach were selected as skill related variables and tested during the tournament. To test the significance of the mean difference among the top eight teams, analysis of variance (ANOVA) was used. In case of any significance of mean difference on the criterion measure, to find out which pair of group was better among the others, the Scheffe's post – hoc test was applied. The level of significance was fixed at 0.05 level. The results reveal that the Indian volleyball players were having better spike Jump Reach followed by USA, Spain, Russia, Brazil, Argentina, Serbia and Iran. The results reveal that the Russian volleyball players recorded high in the block jump reach followed by Spain, India, USA, Brazil, Iran, Serbia and Argentina. From the analysis it was concluded that in spike jump reach significant differences were found between Iran and India and there was no differences between other countries. From the analysis it was concluded that in the block jump reach significant differences were found between Russia and Argentina, Russia and Serbia, Argentina and Spain, Serbia and Spain and there were no differences between other countries.

Keywords: Spike Jump Reach, Block Jump Reach, Volleyball, Countries, Analysis.

Introduction

Volleyball is a worldwide popular game and ranks third as a recreational team sport. It is one of the few popular games that originated from the United States. The object of the game is to keep the ball in flight, going back and forth over the net without it touching the floor. Volleyball has been described as an 'interval' sport with both anaerobic and aerobic components. At the higher skill levels, technical performance may be limited by physical characteristics as well as physical fitness, and performance characteristics. Volleyball is an Olympic team Sport in which two teams of six active players, separated by a high net, each trying to score points by trying to ground the ball on the other team's court under the organized rules. The complete rules of volleyball are extensive, but in general, play proceeds as follows: Points are scored by grounding the ball on the opponents' court, or when the opponent commits a fault. The first team to reach 25 points will win the set and the team wins the match when it wins the three sets. Teams can contact the ball not more than three times before the ball crosses the net and consecutive contacts must be made by different players. The ball is usually played with the hands or arms, but players can legally strike or push (short contact) the ball with any part of the body. Spiking the ball is easy to hit and has a fair advantage that the other team will not be able to hit back (McGown, 1994).

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Methodology

The purpose of the study was to analyse the selected physical variables of the Junior Volleyball Men teams in the FIVB World Championships during the year 2011. To achieve the purpose of the study, top eight teams from the FIVB Junior World Championships during the year 2011 were selected. The top eight teams were from Russia, Argentina, Serbia, USA, Brazil, Iran, Spain and India. Spike jump reach and block jump reach were selected as skill related variables and tested during the tournament. To test the significance of the mean difference among the top eight teams, analysis of variance (ANOVA) was used. In case of any significance of mean difference on the criterion measure, to find out which pair of group was better among the others, the Scheffe's post – hoc test was applied. The level of significance was fixed at 0.05 level.

Results and Discussions

The results are presented in the following tables,

Table I. Mean and standard deviation of selected skill related variables of the junior volleyball men teams in the fivb world championships during the year 2011

Sl.No	Country	Variables	Mean	SD (±)
1	Russia	Spike Jump Reach	340.25	7.44
		Block Jump Reach	329.75	6.16
2	Argentina	Spike Jump Reach	334.16	11.15
		Block Jump Reach	312.83	9.26
3	Serbia	Spike Jump Reach	331.75	10.05
		Block Jump Reach	316.16	8.86
4	USA	Spike Jump Reach	342.25	9.75
		Block Jump Reach	320.50	6.41
5	Brazil	Spike Jump Reach	337.25	11.12
		Block Jump Reach	319.25	8.24
6	Iran	Spike Jump Reach	327.50	7.85
		Block Jump Reach	318.58	7.68
7	Spain	Spike Jump Reach	341.33	6.78
		Block Jump Reach	329.00	8.93
8	India	Spike Jump Reach	342.58	11.21
		Block Jump Reach	322.33	7.86

The mean and standard deviation of selected physical variables of the Junior Volleyball Men teams in the FIVB World Championships during the year 2011 were numerically presented in the above table. The table reveals that the mean scores of the spike Jump Reach of India (342.58) was higher than the other countries and in the Block Jump Reach Russia (329.75) was higher than the other countries.

Table II. Analysis of variance of selected skill related variables of the junior volleyball men teams in the fivb world championships during the year 2011

Sl. No	Variables	Source of Variation	Sum of Squares	df	Mean Squares	F-value
1	Spike Jump Reach	BG	2565.99	7	366.57	3.99*
		WG	8067.25	88	91.67	
2	Block Jump Reach	BG	2898.32	7	414.04	6.46*
		WG	5634.41	88	64.02	

***** $P < 0.05$ Table F, df (7,88) (0.05) = 2.11

The results of analysis of variance was presented in Table II. The obtained F- ratio is the spike jump reach and block jump reach were 3.99 and 6.46 respectively. The obtained F- ratio was greater than the table F-ratio of 2.11. Hence, it was significant ($P<0.05$) for the degrees of freedom (7,88) at 0.05 level of confidence. Since the F value of the spike jump reach and block jump reach were significant, the Scheffe's post-hoc test was further computed to find out which pair of groups were better among others and the results were tabulated in the table III and IV.

Table III. Scheffe's post-hoc test for mean differences between the of junior volleyball men teams in the fivb world championships during the year 2011 on spike jump reach

Spike Jump Reach									
Means								Mean Difference	CI
Russia	Argentina	Serbia	USA	Brazil	Iran	Spain	India		
340.25	334.16	--	--	--	--	--	--	6.09	15.02
340.25	--	331.75	--	--	--	--	--	8.50	15.02
340.25	--	--	342.25	--	--	--	--	2.00	15.02
340.25	--	--	--	337.25	--	--	--	3.00	15.02
340.25	--	--	--	--	327.50	--	--	12.75	15.02
340.25	--	--	--	--	--	341.33	--	1.08	15.02
340.25	--	--	--	--	--	--	342.58	2.33	15.02
--	334.16	331.75	--	--	--	--	--	2.41	15.02
--	334.16	--	342.25	--	--	--	--	8.09	15.02
--	334.16	--	--	337.25	--	--	--	3.09	15.02
--	334.16	--	--	--	327.50	--	--	6.66	15.02
--	334.16	--	--	--	--	341.33	--	7.17	15.02
--	334.16	--	--	--	--	--	342.58	8.42	15.02
--	--	331.75	342.25	--	--	--	--	10.50	15.02
--	--	331.75	--	337.25	--	--	--	5.50	15.02
--	--	331.75	--	--	327.50	--	--	4.25	15.02
--	--	331.75	--	--	--	341.33	--	9.58	15.02
--	--	331.75	--	--	--	--	342.58	10.83	15.02
--	--	--	342.25	337.25	--	--	--	5.00	15.02
--	--	--	342.25	--	327.50	--	--	14.75	15.02
--	--	--	342.25	--	--	341.33	--	0.92	15.02
--	--	--	342.25	--	--	--	342.58	0.33	15.02
--	--	--	--	337.25	327.50	--	--	9.75	15.02
--	--	--	--	337.25	--	341.33	--	4.08	15.02
--	--	--	--	337.25	--	--	342.58	5.33	15.02
--	--	--	--	--	327.50	341.33	--	13.83	15.02
--	--	--	--	--	327.50	--		15.08*	15.02
--	--	--	--	--	--	341.33	342.58	1.25	15.02

Table III shows that the mean difference between Iran and India (15.08) was greater than the confidence interval value 15.02, which shows significant difference at 0.05 level of confidence. The mean difference between Russia and Argentina (6.09), Russia and Serbia (8.50), Russia and USA (2.00), Russia and Brazil (3.00), Russia and Iran (12.75), Russia and Spain (1.08), Russia and India (2.33), Argentina and Serbia (2.41), Argentina and USA (8.09), Argentina and Brazil (3.09), Argentina and Iran (6.66), Argentina and Spain (7.17), Argentina and India (8.42),Serbia and USA (10.50), Serbia and Brazil (5.50), Serbia and Iran (4.25), Serbia and Spain (9.58), Serbia and India (10.83),USA and Brazil (5.00), USA and Iran (14.75), USA and Spain (0.92), USA and India (0.33),Brazil and Iran (9.75), Brazil and Spain (4.08), Brazil and India (5.33), Iran and Spain (13.83), Spain and India (1.25) were lesser than the confidence interval value of 15.02, which shows insignificant difference at 0.05 level of confidence.

Figure I. Bar diagram showing the means of spike jump reach of the junior volleyball men teams in the fivb world championships during the year 2011

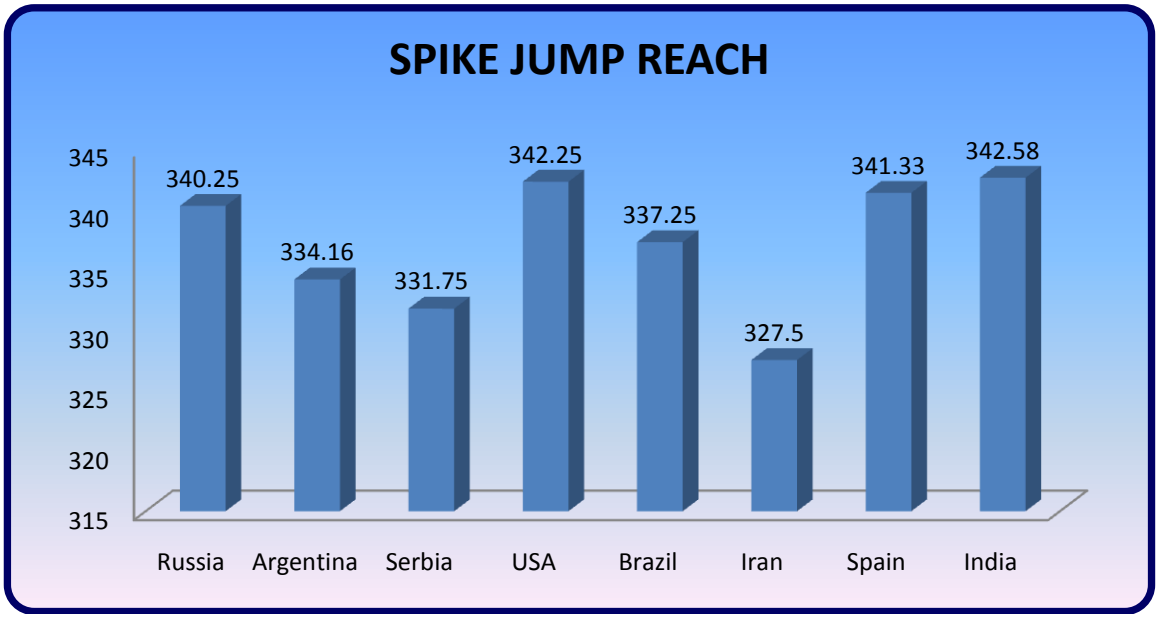
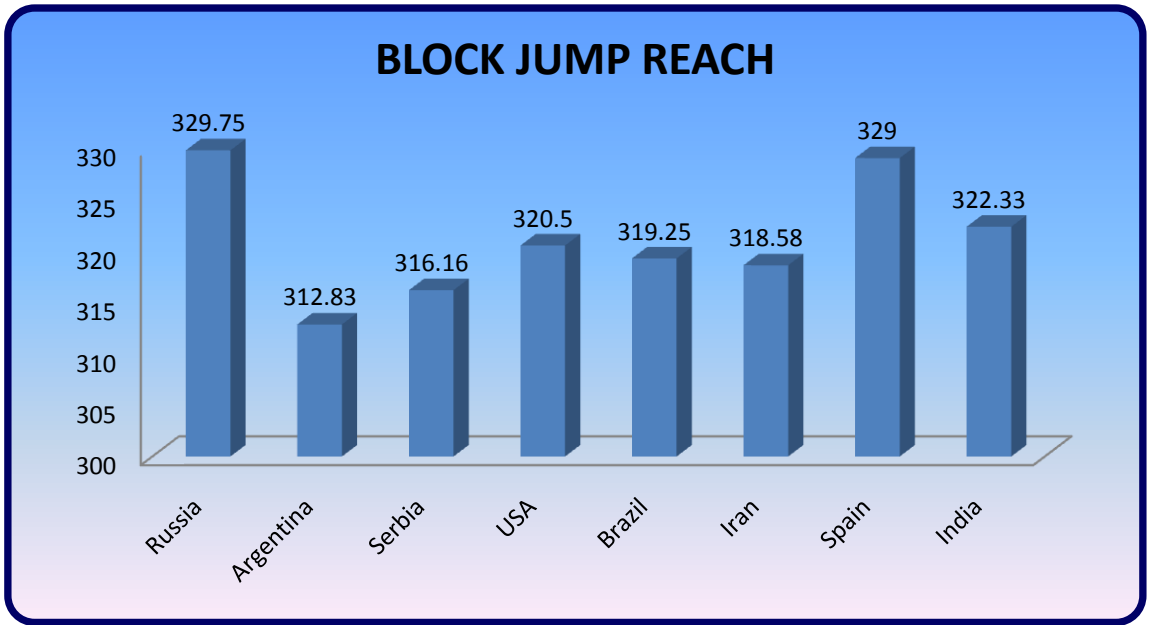


Table IV. Scheffe's post-hoc test for mean differences between the junior volleyball men teams in the fivb world championships during the year 2011 on block jump reach

Block Jump Reach									
Means								Mean Difference	CI
Russia	Argentina	Serbia	USA	Brazil	Iran	Spain	India		
329.75	312.83	--	--	--	--	--	--	19.92*	12.55
329.75	--	316.16	--	--	--	--	--	13.59*	12.55
329.75	--	--	320.50	--	--	--	--	9.25	12.55
329.75	--	--	--	319.25	--	--	--	10.50	12.55
329.75	--	--	--	--	318.58	--	--	11.17	12.55
329.75	--	--	--	--	--	329.00	--	0.75	12.55
329.75	--	--	--	--	--	--	322.33	7.42	12.55
--	312.83	316.16	--	--	--	--	--	3.33	12.55
--	312.83	--	320.50	--	--	--	--	7.67	12.55
--	312.83	--	--	319.25	--	--	--	6.42	12.55
--	312.83	--	--	--	318.58	--	--	5.75	12.55
--	312.83	--	--	--	--	329.00	--	16.17*	12.55
--	312.83	--	--	--	--	--	322.33	9.50	12.55
--	--	316.16	320.50	--	--	--	--	4.34	12.55
--	--	316.16	--	319.25	--	--	--	3.09	12.55
--	--	316.16	--	--	318.58	--	--	2.42	12.55
--	--	316.16	--	--	--	329.00	--	12.84*	12.55
--	--	316.16	--	--	--	--	322.33	6.17	12.55
--	--	--	320.50	319.25	--	--	--	1.25	12.55
--	--	--	320.50	--	318.58	--	--	1.92	12.55
--	--	--	320.50	--	--	329.00	--	8.50	12.55
--	--	--	320.50	--	--	--	322.33	1.83	12.55
--	--	--	--	319.25	318.58	--	--	0.67	12.55
--	--	--	--	319.25	--	329.00	--	9.75	12.55
--	--	--	--	319.25	--	--	322.33	3.08	12.55
--	--	--	--	--	318.58	329.00	--	10.42	12.55
--	--	--	--	--	318.58	--	322.33	3.75	12.55
--	--	--	--	--	--	329.00	322.33	6.67	12.55

Table IV shows that the mean difference between Russia and Argentina (19.92), Russia and Serbia (13.59), Argentina and Spain (16.17), Serbia and Spain (12.84), were greater than the confidence interval value 12.55, which shows significant difference at 0.05 level of confidence. The mean difference between Russia and USA (9.25), Russia and Brazil (10.50), Russia and Iran (11.17), Russia and Spain (0.75), Russia and India (7.42), Argentina and Serbia (3.33), Argentina and USA (7.67), Argentina and Brazil (6.42), Argentina and Iran (5.75), Argentina and India (9.50), Serbia and USA (4.34), Serbia and Brazil (3.09), Serbia and Iran (2.42), Serbia and India (6.17),USA and Brazil (1.25), USA and Iran (1.92), USA and Spain (8.50), USA and India (1.83),Brazil and Iran (0.67), Brazil and Spain (9.75), Brazil and India (3.08), Iran and Spain (10.42), Iran and India (3.75), Spain and India (6.67) were lesser than the confidence interval value of 12.55, which shows insignificant difference at 0.05 level of confidence.

Figure II. Bar diagram showing the means of block jump reach of the junior volleyball men teams in the fivb world championships during the year 2011



Conclusions

From the analysis of the data, the following conclusions were drawn.

1. The results reveal that the Indian Volleyball Players are having better spike Jump Reach followed by USA, Spain, Russia, Brazil, Argentina, Serbia and Iran.
2. The results reveal that the Russian volleyball players have recorded high in block jump reach followed by Spain, India, USA, Brazil, Iran, Serbia and Argentina.
3. From the analysis it was concluded that in spike jump reach, significant differences were found between Iran and India and there were no differences between other countries.
4. From the analysis it was concluded that in block jump reach, significant differences were found between Russia and Argentina, Russia and Serbia, Argentina and Spain, Serbia and Spain and there were no differences between other countries.

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