Research Paper Education

Comparison of Selected Motor Fitness Components Among Different Match Practice Teams

Dr.K.MURALIRAJAN Associate Professor, Alagappa University College of Physical Education, Karaikudi, Tamil Nadu.

S.SARAVANA SUDARSAN Research Scholar, Alagappa University College of Physical Education, Karaikudi, TN.

ABSTRACT

The purpose of the study was to compare the motor fitness components among different match practice teams. To achieve this purpose fifty male sports person from the Alagappa University College of Arts and Science, Paramakudi, were selected as the subject. All subjects were practicing regularly and related from different team games like Hockey, Football, volleyball, basketball and handball, who had participated in Interuniversity were selected as the subject for this study. Their age ranged from 18 to 21 year old, the study was confined to the selected motor fitness components namely Muscular Endurance, Speed, and Agility. The data of selected subject for motor fitness components (muscular endurance, speed, and Agility) were recorded by different measures, for muscular endurance, speed and Agility, data were observed by performing the 600 meter run/ walk, 50 meter dash and Shuttle Run. There is significant difference found between the mean value of motor fitness components (muscular endurance (F= 62.67) and agility (F= 3.104) among different match practice group. And no significant differences were found for the mean value of speed (F=2.227) among different match practice group. With the limitations of the study it may be concluded that, there was no significant difference found between the different match practice groups i.e. Hockey, Football, Basketball, Volleyball, and Handball in relation to their motor fitness component (speed) and there was also no significant difference found between the hockey and handball in relation to their motor fitness component (agility). On the other hand there was significant difference found between the different match group i.e. Hockey, Football, Basketball, Volleyball, and Handball in relation to their muscular endurance and agility (accept hockey and handball), when the subjects were involved in similar type of daily routine.

KEYWORDS Speed, Muscular Endurance, Agility, Hockey, Football, Basketball, Volleyball, and Handball.

Introduction

Sports is one of the avenues of mankind's never ceasing strive for excellence. Its uniqueness lies in the intimacy between the physical happenings of our bodies and their repercussions on our minds, as well as in the general re-cognoscibility of the social and aesthetic value.

Sports evoke experience that is exclusively human and independent of the changing forms, patterns customs of a civilization, which involves profoundly modifying concepts of our environment. From its very simple form, a sport has emerged into highly organized form of play and play is a general innate tendency. Play is very important for preservation, growth and development of organism.

Performance of an athlete in the sports is not only depend upon the motor fitness components but other factors also contribute to the success of an athlete in the sports arena such as scientific good quality equipment's, clothing, training schedule competition frequency & psychological preparation and the most important balanced diet. All these factors together make the athletes prepared for the competition and the only the fruitful result can be expected from the athlete in the competition. An individual to succeed in the competition must develop the motor fitness factor that is speed, agility, flexibility, strength and power.

Motor fitness is the final criterion through which all other elements of physical fitness are seen and measured in man. How continuously and efficiently he performs his daily work in industry, on the farm, in the armed forces, or in athletic performance was at one time the only criterion that man had of physical fitness. He might know little or nothing about scientific facts of body structure, physiology or functioning the organs, strength test on dynamometer, or organic efficiency tests. But he could understand an outstanding performance displaying power, speed and endurance.

Methodology of Study

The purpose of the study was to compare the motor fitness components among different match practice group, for achieve this purpose fifty male sports person from the Alagappa University College of Arts and Science, Paramakudi, were selected as the subject. All subjects were practicing regularly and related from different team games like Hockey, Football, volleyball, basketball and handball, who had participated in Interuniversity and as well as in state championship were selected as the subject for this study. Their age ranged from 18 to 21 year old, the study was confined to the selected motor fitness components namely Muscular Endurance, Speed, and Agility.

The data of selected subject for motor fitness components (muscular endurance, speed, and Agility) were recorded by different measures, for muscular endurance, speed and Agility, data were observed by performing the 600 meter run/walk, 50 meter dash and Shuttle Run.

The Descriptive statistics and one-way analysis of variance (ANOVA) were applied to finding out the difference in selected motor fitness components at 0.05 level of significance among different Match Practice Group of different Team Games.

After collecting the data of selected motor fitness components of different match practice team players, score of each category of subjects were subjected of F analysis of variance (ANOVA) and LSD test applied for finding out the critical difference in mean performance of selected motor fitness components among different match practice groups. The findings are presented in Tables.

Table No.1
Variance of Motor Fitness Component (Muscular Endurance) Among Different Match Practice Team Descriptive Analysis

Variable	Groups	N	Mean	Standard Deviation
Muscular Endurance	Hockey	10	1.46	0.034
	Football	10	2.49	0.124
	Volleyball	10	2.40	0.234
	Basketball	10	2.10	0.231
	Handball	10	2.25	0.091
	Total	50	2.14	0.401

Chart No. 1

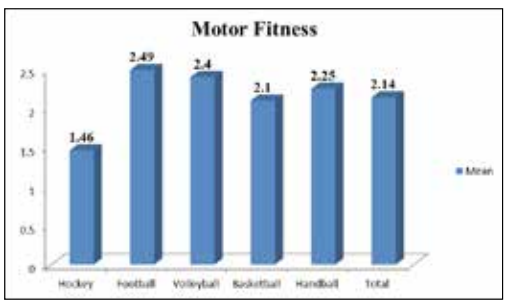

Chart No. 2

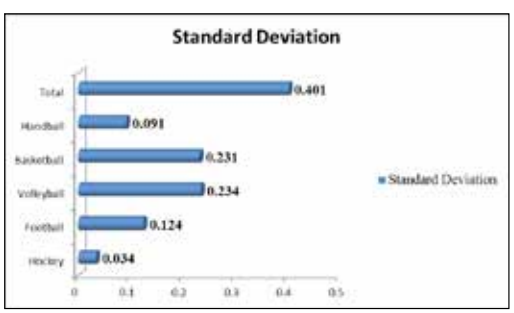

Table No.2
Muscular Endurance among Different Match Practice Team Descriptive Analysis

ANOVA Variable	Sources of Variance	Sum of Squares	Degree of Freedom	Mean Square	F
Muscular Endurance	Between Groups	6.694	4	1.674	62.665
	Within Groups	1.202	45	0.027	
	Total	**7.896**	**49**		

* Significant at 0.05 level, Tab t0.05 (4.45) =2.58

Table No.3
Least Significant Difference (Post hoc test) for Mean of Motor Fitness Component (Muscular Endurance) among Different Match Practice Team

Hockey	Football	Volleyball	Basketball	Handball	Mean Difference	CD at 0.05 level
1.46	2.49				-1.034*	0.066
1.46		2.39			-0.939*	
1.46			2.10		-0.645*	
	2.49			2.25	-0.796*	
	2.49	2.39			0.095*	
	2.49		2.10		0.389*	
				2.25	0.238*	
		2.39	2.10		0.294*	
		2.39		2.25	0.143*	
			2.10	2.25	-0.151*	

* Significant at 0.05 level, Tab t0.05 (4,45) =2.58

The table shows that there is significant difference found between the mean value of motor fitness components (Agility) among different match practice team.

Table No.4
Motor Fitness Component (Speed) among Different Match Practice Team

Variable	Groups	N	Mean	Standard Deviation
Speed	Hockey	10	5.46	0.295
	Football	10	5.62	0.456
	Volleyball	10	5.50	0.374
	Basketball	10	5.22	0.187
	Handball	10	5.65	0.427
	Total	50	5.49	0.379

Chart No.3

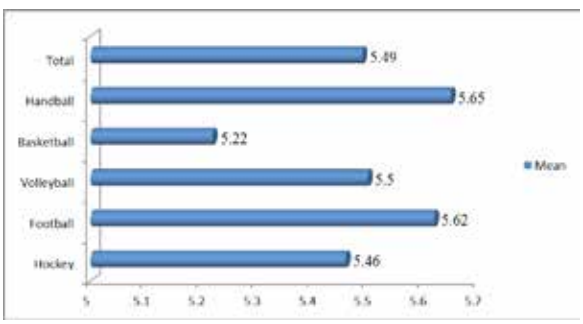

Chart No.4

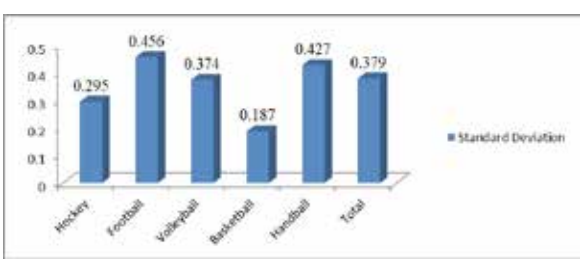

Table No.5
ANOVA TABLE

Variable	Sources of Variance	Sum of Squares	Degree of Freedom	Mean Square	F
Speed	Between Groups	1.164	4	0.291	**2.227**
	Within Groups	5.881	45	0.131	
	Total	**7.045**	**49**		

*Significant at 0.05 level, Tab t0.05 (4,45) =2.58

The table shows that there is insignificant difference found between the mean value of motor fitness components (Speed) among different match practice group.

Table No.6
Motor Fitness Component (Agility) among Different Match Practice Team

Variable	Groups	N	Mean	Standard Deviation
Agility	Hockey	10	6.96	0.607
	Football	10	6.81	0.570
	Volleyball	10	6.45	0.287
	Basketball	10	7.20	0.371
	Handball	10	6.89	0.530
	Total	50	6.86	0.529

Chart No.5

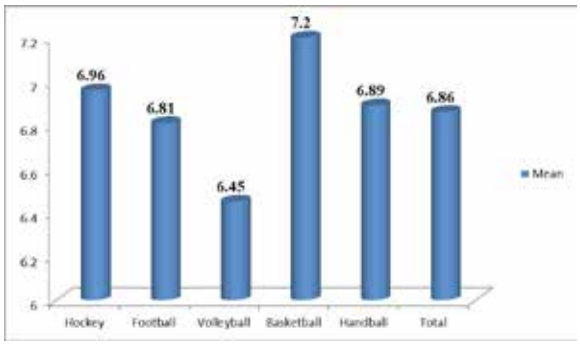

Chart No.6

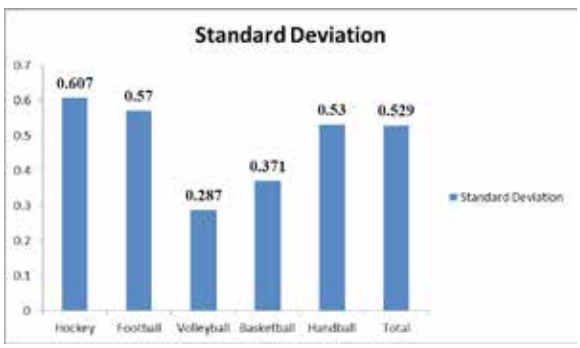

Table No.7
ANOVA TABLE

Variable	Sources of Variance	Sum of Squares	Degree of Freedom	Mean Square	F
Agility	Between Groups	2.971	4	0.743	**3.104**
	Within Groups	10.767	45	0.239	
	Total	13.738	49		

Table No.8
Post hoc Test for Mean of Motor Fitness Component among Different match practice team

Hockey	Football	Volleyball	Basketball	Handball	Mean Difference	CD at 0.05 level
6.96	6.81				0.150*	**0.195**
6.96		6.45			0.510*	
6.96			7.20		-0.240*	
6.96				6.89	0.070	
	6.81	6.45			0.360*	
	6.81		7.20		-0.390*	
	6.81			6.89	-0.080*	
		6.45	7.20		-0.750*	
		6.45		6.89	-0.440*	
			7.20	6.89	0.310*	

*Significant at 0.05 level, Tab t0.05 (4,45) =2.58

The table shows that there is insignificant difference found between the mean value of motor fitness components (Speed) among different match practice group.

Discussion and Findings

The analysis of data reveals that there is insignificant difference in speed between different match practice groups were obtained. The insignificant difference may be due to the type of test selected. Usually hockey players, football players, volleyball players, basketball players and handball players are employ same type of speed of movement while taking part in a game.

A significant difference in muscular endurance among hockey and football, hockey and volleyball, hockey and basketball, hockey and handball, football and volleyball, football and basketball, football and handball, volleyball and basketball, volleyball and handball and basketball and handball were obtained.

A significant difference in agility among hockey and football, hockey and volleyball, hockey and basketball, football and volleyball, football and basketball, football and handball, volleyball and basketball, volleyball and handball and basketball and handball were obtained.

Conclusions

With the limitations of the study it may be concluded that, there was no significant difference found among the different match practice groups i.e. Hockey, Football, Basketball, Volleyball, and Handball in relation to their motor fitness component (speed) and there was also no significant difference found between the hockey and handball in relation to their motor fitness component (agility). On the other hand there was significant difference found between the different match practice team. i.e. Hockey, Football, Basketball, Volleyball, and Handball in relation to their muscular endurance and agility (accept hockey and handball), when the subjects were involved in similar type of daily routine.

REFERENCES

1. Neilson, N. P., Johnson, C. R., Measurement and Statistics in Physical Education, Belmont California: Warsworth Publishing Company Inc., (1970). p.245. 2. Kamlesh, M.L. and Sangral, Principles and History of Physical Education, Prakash Brothers Education Publishers, 1980. 3. Barrow and McGee, A Particle Approach to Measurement in Physical Education, Philadelphia, London, 1989. 4. Singh, H. Science of Sports Training, New Delhi: D.V.S. Publications, (1993), p.175. 5. Srivastva, G. Advanced Research Methodology, New Delhi: Radha Publications, (1994), pp. 219-220. 6. Butler and Loren, A Comparison of Fitness Levels for Fifth Grades in Public Private and Home Schools, Dissertation Abstract, 2002. 7. Mohan, R. Research Methods in Education, New Delhi: Neelkamal Publications Pvt. Ltd. (2003). 8. Boddington., M. K., Lambert, M. L., &Waldeck, M. R. Validity of a 5-meter multiple shuttle run test of assessing fitness of women field hockey players. Journal of Strength and Conditioning Research, (2004). 18 (1), 97-100. 9. Bucher, C. A., Foundation of physical education and sports, Publisher McGraw-Hill, 13th Edtion, pp.222-223. 10. Kansal, D. K. Text Book of Applied Measurement Evaluation & Sports Selection,New Delhi: Sports &Spiritual Science Publication, 2nd Edition, (2008), pp.251.