

A comparative Study of Motor Abilities and Physiological Variable of Different Game players



Physical Education

KEYWORDS : Motor ability, Team Games, Explosive strength and Resting pulse rate.

Sorabh Trikha

Reasearch Scholar, Department of Physical Education, CDLU, Sirsa, Haryana

Dr. Ashok Kumar Sharma

Assistant Professor, Department of Physical Education, CDLU, Sirsa, Haryana

ABSTRACT

The study aimed to find out a comparative assessment of different teams players explosive leg strength, explosive arm strength and resting pulse rate. To achieve the desire objective of the study 35 Basketball, 35 Handball and 35 Netball male players with age range from 18 to 25 years were selected from Haryana State. The Standing Broad Jump, Medicine Ball Put and Pulse rate Test were used to measure the explosive leg strength, arm strength and resting pulse rate of the different team games players. In order to analyze the data t-test was used. Authors observed the significant difference between Basketball and Handball players of motor ability. The Analysis of variance (ANOVA) test was applied for treatment of the data with the help of SPSS (11.5) computer software. Analysis of the data has revealed that the Handball players were better in explosive leg strength, explosive arm strength and in resting pulse rate as compare to Basketball and Netball players.

INTRODUCTION

As all we know that team sports like Basketball, Handball and Netball, have been widely accepted as a highly competitive sports throughout the world. These sports dealing in great demand of explosive strength of legs, arms and shoulder and also highly improve lung capacity for the nature of games. During defensive and offensive movements like ball throw/ pass (short or long), jumping (standing or running), side turning, fast break etc. we need some motor qualities to do the action and reaction in efficient manners rapidly. Brace "The ability which more or less general and inherent and which permits on individual to learn more skills and be proficient in them." Motor abilities contribute independently and interdependently for successful performance of skill (Barrow and McGee, 1979).

Shekhar (1981) investigated selected physical fitness components i.e. speed, strength, and leg explosive strength, and gross body coordination, respiratory endurance of football and basket

ball players. The basketball players were comparatively superior to football players in extend flexibility and dynamic flexibility. The football players were found to be higher in leg explosive strength, abdominal strength and gross body coordination.

METHODOLOGY:

In the order to achieve the purpose of the study, data were collected from total 105 Basketball (35), Handball (35) and Netball (35) male players who performed at least state/intercollegiate levels in above said games. The data was collected during the coaching camps, state tournaments and intercollegiate competitions of university of Haryana. The only two motor abilities and one physiological variable were selected and administered. Motor Ability test variables tested by conducted Barrow Motor Ability test i.e. Standing Broad jump and Medicine Ball Put. To find out the difference in Resting pulse rate peak flow meter was used. The Analysis of variance (ANOVA) test was applied for treatment of the data with the help of SPSS (11.5) computer software.

RESULTS AND DISSCUSSION:

TABLE-1: Summary of a One-way ANOVA of explosive leg strength among Basketball, Handball and Netball team players.

Group	N	Mean	Std. Deviation	Std. Error	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Basketball	35	7.043	0.648	0.109	Between Group	13.560	2	6.780	12.079	.000
Handball	35	7.516	0.428	0.072	With in Group	57.251	102	0.561		
Netball	35	6.637	1.039	0.176	Total	70.811	104			
Total	105	7.065	0.825	0.081						

Table- 1 indicates the Mean, S.D. and 'F' value of Basketball, Handball and Netball players explosive leg strength. The calculated F value is 12.079, which is greater than required table value at 0.05 level of confidence. From the result it is clear that explosive leg strength score significantly varies among the different team game players and Handball players were better in explosive leg strength as compare to Basketball and Netball players.

TABLE-2: Summary of a One-way ANOVA of explosive arm strength among Basketball, Handball and Netball team players.

Group	N	Mean	Std. Deviation	Std. Error	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Basketball	35	34.544	3.529	0.597	Between Group	329.379	2	164.690	9.197	.000
Handball	35	37.962	3.841	0.649	With in Group	1826.493	102	17.907		
Netball	35	33.940	5.149	0.870	Total	2155.873	104			
Total	105	35.482	4.553	0.444						

From table- 2, it can be seen that the value of Mean, S.D. and 'F' of Basketball, Handball and Netball players explosive arm strength. It indicates that the Handball players had more explosive arm strength in comparison to Basketball and Netball players. Further the calculated F value is 9.197, which is greater than suggested table value at 0.05 level of confidence.

TABLE-3: Summary of a One-way ANOVA of resting pulse rate among Basketball, Handball and Netball team players.

Group	N	Mean	Std. Deviation	Std. Error	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Basketball	35	67.31	4.801	0.811	Between Group	453.486	2	226.743	7.810	.000
Handball	35	64.11	3.818	0.645						
Netball	35	69.14	7.034	1.189	With in Group	2961.371	102	29.033		
Total	105	66.86	5.730	0.559	Total	3414.857	104			

It is observed from the table- 3 that Mean, S.D. and 'F' value of resting pulse rate of Basketball, Handball and Netball team game players. Here Handball players were more better in resting pulse rate as compare to Basketball and Netball players. Whereas, calculated F value of resting pulse rate of these three team game players is 7.810, which is greater than required table value at 0.05 level of confidence. It means that handball players are better in resting pulse rate among games because the Handball is being played in a large court as compared to Basketball and Netball court.

CONCLUSIONS:-

A perusal of summary of results shows the following conclusion. It seems that the handball players were better than that of basketball and Netball players in explosive leg strength. In the game handball explosive leg strength is need to do lots of movements like pivot jump, standing jump shot, three step jump shot and many more activities which require the great amount of leg strength. This is the key point which researchers want to share with you. It implies that handball players have more explosive leg strength than basketball and Netball players due to the medium body structure and optimum muscles growth of the lower extremity which directly contributes in the execution of standing broad jump.

The Handball players are better in explosive arm strength because in handball game one hand pass or throw mainly used in the game frequently so the muscles of upper extremity developed optimally as compare to Basketball and Netball Players. But as the nature of Basketball and Netball games, ball weight influence on the relative muscles group of arm and shoulder because both arm pass and throw used in as the main skill of these games. Thus Handball players were better as compare to other two game players in explosive arm strength.

Further Handball is being played in a large court as compared to Basketball and Netball court. Secondly, the Handball matches are being played for greater time (T-60 min.) as compare to Basketball (T-40 min.) and Netball (T-50 min.). Hence, Handball players perform much endurance activity as compare to Basketball and Netball game players. That is why Handball players were better as compare to other two game players in resting pulse rate.

The finding of the present study very well supported by the researchers (Angyan-1989, Barrow-1979, Bhupinder-1988, Shekhar -1981, Chattopadhyay -1982, Mangla-1982, Mazumdar -2001, Meena-2008, Miller -1971, Natraj-2006, Uppal, 1989).

REFERENCE

- Adhikari, C.S. (1983). Comparative Relationship of Power, Agility and selected Speed characteristics of Block Jump and Three Striders Jump in Volleyball. (Unpublished master's thesis), Jiwaji University, Gwalior. | Angyan, L. (1989). Relationship of anthropometrical, Physiological and Motor Attributes to Sports – specific skills. Journal of Sports Medicine and Physical Fitness.29(4) pp.369-78. | Barrow, H.M. (1979). A Practical Approach to Measurement in Physical Education. Henry Kimpton Publisher, London. | Chatopadhyay, T.K. (1982). A comparative study of Selected Physical Fitness of Soccer and Hockey Players. (Unpublished Master's Thesis), Jiwaji University, Gwalior. | Mangla, R.N. (1982). Comparative Study of Physical and Physiological Variables of Swimmers, Badminton Players and Gymnasts. A thesis submitted to N.S.N.I.S. Patiala. | Mazumdar, P.R. (2001). Comparative study of selected Physiological Variables and Motor Ability Components of Rural and Urban students of Tripura. (Unpublished Master's Thesis) Jiwaji University, Gwalior. | Meena, (2008). Study of Physical Fitness, Physiological Variables and Coordinative Ability of Basketball Players at different levels of Participation. A thesis submitted to Kurukshetra University, Kurukshetra. | Miller, D.K. (1971). Comparison of the effect of Individual and Team Sports Programmes on the Motor Ability of Male College Freshman. Dissertation abstracts international, vol.31. | Shekhar, (1981). A comparative study of Selected Physical Fitness Components of Football and Basketball Players. (Unpublished Master's Thesis) Jiwaji University, Gwalior. | Singh, A. (1990). Comparative Study of Selected Physiological Variables in Badminton, Table tennis and Lawn Tennis players. (Unpublished Master's Dissertation) Submitted to the Amravati University. | Singh, B. (1988). A comparative study of Physical Fitness in relation to the Performance level of players participating in individual and Team Games. (Unpublished Master Thesis) submitted to Kurukshetra University, Kurukshetra | Srivastava, P.G.N. (1994). Advanced Research Methodology. Radha Publications. New Delhi. | Uppal, A.K., & Roy, P. (1989). Assessment of Motor Fitness Components as Predictors of Soccer Playing Ability. SNIPES Journal.9(3) p. 46-49. | Natraj, H.V., & Chandrakumar, M. (2006). Selected Motor Ability variables and Kabaddi performance. Journals of Sports Sciences 29 (1) p.11-16.