

## COMPARISON OF SELECTED COORDINATIVE ABILITIES BETWEEN FOOTBALL AND HOCKEY MALE PLAYERS

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### Abstract

The aim of this study was to investigate difference of coordinative abilities between footballer and hockey male players. To attain this study, 30 (15 footballer and 15 hockey players) represented inter-university tournament with age ranging from 17 to 25 years were randomly selected from Lakshmbai National Institute of Physical Education, Gwalior. The statistical technique employed for this study was independent t-test at 0.05 level of significance. As per the statistical analysis significant difference was found between football and hockey players on the sub-variables i.e. reaction ability, orientation ability and differentiation ability, However insignificant difference was found on sub-variable i.e. rhythmic ability at 0.05 level of significance.

**Keywords:** Coordinative Abilities, Rhythmic Ability, Reaction Ability and Orientation Ability

### Introduction

Football in India believed to have started in the early 1800s. However, the tradition dates back to the 1880 in West Bengal, when the British Army introduced organized soccer. The game became popular first in Bengal, before it spread to the other parts of the country. The coordinative ability is the core of ability, which considered the "spine of Motiveness" (Epuran M., 1996). Coordinative abilities are primarily dependent on the motor control and regulation process of the Central Nervous System. For each Coordinative ability the motor control and regulation process function in a definite pattern, when a particular aspects of these functions is improved then the sportsman is in a better position to carry out a certain group of movements which for their execution depends on the Central Nervous System functioning pattern (Singh, 1991). The learning of movements The most popular of these sports worldwide is association football, more commonly known as just "soccer". Sports science and modern technology has had a major effect on soccer training over the past 10 years. (Gary and George, 1997). Coordinative abilities are an important pre-requisite for the good performance sports. They are dependent on the motor control and regulation process of central nervous system for each of the coordinative ability, the motor control and regulation function in a definite manner. When a particular aspect of these functions is improved then the

has a positive effect on the coordinative abilities belong to the performance factor technique or coordination (Singh, 1991). Coordinative abilities have a significant role in acquiring motor skills, as the time needs to master any scale (under study). Motor skill depends on the level of ability at the beginning. There is statistical significant appositive relation of learning. Improving and promoting coordinative between the averages of post-measures in some abilities are with a great importance to improve the quality coordinative abilities and between the averages of motor performance and the speed of motor learning and post-measures in some offensive skills performance. The capability of adapt the mentally motor programs to the changeable conditions (Abd Alkhalk, E., 2003, Sayed, M.A., 2009). Playing fundamental motor skills have developed into various movement patterns. However, at every stage of human history physical activity provides an existing outlet for human expression often creative in nature. Human being normally run, jumps, throw, catch, kick, strike and perform a multitude of basic skills. They combine the skills into pattern of unceasingly greater specificity and complexity. The science of sport and preparation of athletes is continuously evolving. Contemporary sport scientists continue to explore the physiological and performance effects of different training interventions, recovery modalities, nutritional countermeasures and biomechanical factors on performance in order to increase it. As our understanding of body's response to different stressors has grown, contemporary training theorists, sport scientists, and coaches have been able to expand upon the most basic concept of training. (Tudor. D. Bompa and Gregory Hoff, 2009). Football refers sports that involve, to varying degrees of kicking a ball with the foot to score a goal sports person is in a better position to do the certain group of movements, when for their execution depend on this type of CNS functioning pattern (Singh, 1991). Coordinative abilities become effective in movement only through the motor abilities and activity determined drives and cognitive process (Hirtz 1985). Because of the nature of coordinative abilities, it is not easy to define coordinative abilities. The findings of the present study will give information regarding coordinative abilities.

### Objective of Study

The objective of the study was to compare coordinative abilities between footballer and hockey male players.

### Methodology

#### Selection of Subjects

Thirty (15 footballer and 15 hockey) inter-university players from Lakshmibai National Institute of Physical Education Gwalior were selected as participant randomly. The age of the participant was range from 17 to 25 years.

#### Selected Coordinative Abilities and Measurement

##### Reaction Ability

To measure reaction ability (ball reaction exercise test), was administered and the distance measured in centimeters from the top of the planks to the point where the subjects stopped the ball. The two trails are given and best one recorded as the score.

##### Orientation Ability

To measure orientation ability (numbered medicine ball run test), was used and performance noted in seconds. Two trails are given and best one recorded as score.

##### Differentiation Ability

Differentiation ability measure through (backward medicine ball throw test) 1 kg medicine ball touching the mat-1point, 1 kg medicine ball touching the circle line- 2 points, 1kg medicine ball touching inside the circle-3 point, 1kg medicine ball touching the 2kg Medicine ball- 4points. Five trail were given and sum of five trail recorded as score.

##### Rhythmic Ability

To measure rhythmic ability (sprint at the given rhythm test), was administered the difference between the timing of the first and second attempts was taken as the score.

### Data Analysis

For data, an analysis response was express as mean and standard deviation. Independent test were performed for comparisons means between two group (football and hockey male players),  $p < 0.05$  was considered statistically significant. Data analysis performed using SPSS 20.0 software under windows.

### Results

The minimum and maximum ages were similar in both the groups. The means and standard deviation (SD) of the coordinative variables, the means and standard deviations of the two groups has been present table -1, further equality of variances(Levene's test) along with the independent't' test has been present in table -2. The graphical representation of mean differences is shown in fig.1.

TABLE-1  
DESCRIPTIVE STATISTICS OF THE GROUPS

Coordinative Variables	Groups	Mean	SD
Reaction Time	Football	18.5520	1.02913
	Hockey	20.0353	1.08324
Orientation Ability	Football	7.5580	.48177
	Hockey	8.5347	.69953
Differentiation Ability	Football	11.4440	.91837
	Hockey	10.1213	.70536
Rhythmic Ability	Football	1.7827	.18348
	Hockey	1.8507	.15262

Table-1 shows the descriptive statistics of the Footballers and Hockey Players for the Reaction Time, Orientation Ability, Differentiation and Rhythmic Ability. The Mean  $\pm$ SD values of groups.

**TABLE-2**  
SIGNIFICANCE DIFFERENCE OF MEAN OF COORDINATIVE VARIABLES  
BETWEEN FOOTBALL AND HOCKEY PLAYERS.

		F	Sig.	t	df	Mean Difference
Reaction Time	Equal variances assumed	.364	.551	3.845*	28	1.48333
Orientation Ability	Equal variances assumed	.846	.366	4.453*	28	.97667
Differentiation Ability	Equal variances assumed	.690	.413	4.424*	28	1.32267
Rhythmic Ability	Equal variances assumed	.559	.461	-1.104	28	-.06800

\*Value of "t" at the level of 0.05

Table-2 shows the significance difference in the Football and Hockey players in Reaction time, Orientation ability and Differentiation ability as the sig. value is less than the 0.05 and also shows the insignificant difference in Rhythmic ability as the sig. value is more than the 0.05.

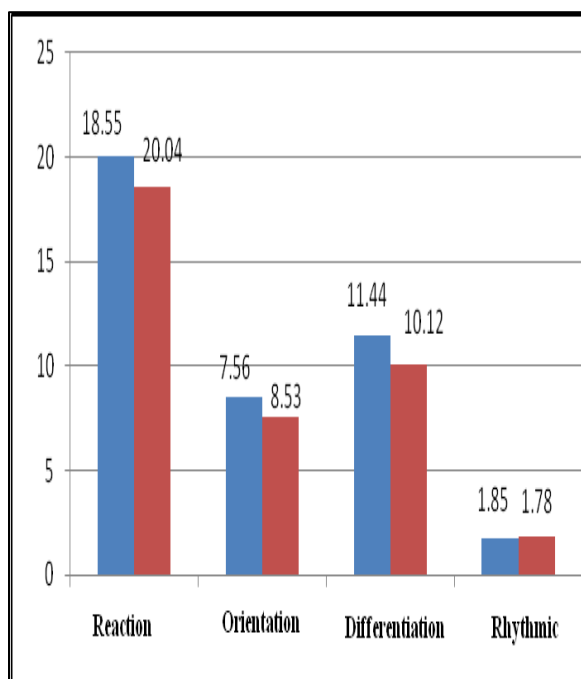


Fig 1: A Graphical representation of the mean values on reaction ability, orientation ability, differentiation ability and rhythmic ability between football and hockey players.

**Discussion and Conclusion**

The purpose of this study was to find out the significance difference of coordinative abilities between male football players and hockey players. It was concluded from the above findings that the significant difference was found in the reaction ability (ball reaction exercise test), orientation ability (numbered medicine ball run test) and differentiation ability (backward ball throw test) the Football players had better reaction ability, orientation ability and differentiation ability in comparison to the Hockey players. The insignificant difference was found in the rhythmic ability (sprint at the given rhythm test) between hockey and football players. The results have shown that there is significant difference in reaction time of footballers as compared to hockey players. The findings may be apparent to the reason that footballer emphasized a lot of reaction in training during their practice session because they have to tackle the ball with their body and at the same time they need dribbling and feinting maneuvers as included in hockey, but they have to tackle the ball also with their own body and not with the stick. The orientation ability was also found to be significantly better in the footballers as compared to the hockey players. It may be attributed to the reason that there is a greater need of awareness of footballer teammates and opposition players in football and the training that there is a sensor developed without any conscious effort. The differentiation ability was found to be significantly better in footballers as it may be argued that kinesthetic sense of awareness about the in much required in the game of football. It is due to the reason that there is a need to give passes when condition demand without being seeing the players on the bases of previously seen moment of players. Therefore, during training and competition the regular conditioning of such ability helps the footballers to develop better differentiation ability. The rhythmic ability was found insignificant of footballers and hockey player's reason due to the similar kind of coordinated and rhythmic moments required during the dribbling and feinting to the opponents in match situations.

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