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**Dr. G Balasundar**  
Director of Physical Education  
SRMV College of Arts and  
Science, Coimbatore,  
Tamil Nadu, India

**S Mohan**  
Research Scholar, Department of  
Physical Education SRMV  
College of Arts and Science,  
Coimbatore Tamil Nadu, India

**C Selvakannan**  
Research Scholar, Department of  
Physical Education SRMV  
College of Arts and Science,  
Coimbatore Tamil Nadu, India

**Correspondence**  
**Dr. G Balasundar**  
Director of Physical Education  
SRMV College of Arts and  
Science, Coimbatore,  
Tamil Nadu, India

## Relationship of overall kho kho performance with the coordinative abilities of South Zone men kho kho players

**Dr. G Balasundar, S Mohan and C Selvakannan**

### Abstract

Training allows the body to gradually build up strength and endurance, improve skill levels and build motivation, ambition and confidence. Training also allows athletes to gain more knowledge of their sport as well as enabling them to learn about the importance of having a healthy mind and body. Nowadays, sports training is based on: technical training, tactical training, physical training, psychological training, artistic training and biological training for competition. The technique of a sports branch includes all the motor actions ideally executed from the point of view of their efficiency. The main purpose of this research was to find the relationship of overall kho kho performance with the coordinative abilities of South Zone men kho kho players. The subjects were selected for this study in consideration of their age; and the level of participation and history were also taken into consideration. The scope of this study encompasses the following aspects: rhythmic ability, reaction ability, balance ability, orientation ability, differentiation ability and speed. For achieving the aim of the present research, ninety men kho kho players of the South Zone were selected through the non-probability sampling approach. Descriptive statistics was used to assess their characteristics and multiple correlations were used to establish the relationship between them at  $P < 0.05$  &  $P < 0.01$  level of significant. The Kolmogorov-Smirnov tests were used to check the normality of data at  $P < 0.05$  level of significant.

**Keywords:** Coordinative abilities, South Zone, overall performance

### Introduction

Coordinative abilities are those abilities that influence the capacity to manipulate and control objects (Stallings, 1982). In sports today, higher performance can be achieved through a meticulously planned, controlled and executed training system based on scientific knowledge and theoretical and methodical fundamentals of sports training. Coordinative abilities are understood to be relatively stabilized and generalized patterns of motor control and regulation processes. These enable the sportsman to do a group of movements with better quality and less effort (Hirtz, 1985). Coordinative abilities are needed in the game of kho kho for diving, chasing, defense and pole diving. In the above cases, all the body parts are used except hands. Skills in kho kho allow players to make pinpoint coordination with precision, to fake out the defense, so they have to have excellent coordinative abilities between hand-eye coordination. Insufficient development of coordinative abilities limits the performance ability especially at higher levels. On the contrary, better developed coordinative abilities provide an essential base for faster and effective learning, stabilization and variation in techniques and their successful execution in game situations.

All sports require the coordination of eyes, hands and or feet and maybe an implement such as a defence. Coordination in kho kho maybe defined as the capability of the player to handle kho kho-specific and general situations in confident, economical and rapid ways. Like agility, coordination requires a high level of interaction between motor and muscular systems. For example, evidence shows that fake performance is highly influenced by minimum variations in motor co-ordination. Co-ordination also depends on a player's sense of timing, e.g. when running onto a endurance into space, the player must judge the distance, speed and flight path of the player.

**Materials & Method Subject**

The present study was based on a cross-sectional sample of ninety men kho kho players of the South Zone Inter University tournament using non-probability sampling approach, and the data were collected by their own free will. Their ages ranged from 18 to 28 years. The study was carried out in December 2018.

**Administration of the Coordinative Abilities Tests**

The Coordinative Abilities data were collected by conducting various Coordinative Abilities tests as recommended by (Peter Hirtz). Differentiation ability was measured using backward medicine ball throw test. The scoring was provided to the players as follows: if the medicine ball touched the mat 1 point was awarded, if the medicine ball touched the circle line then 2 points were awarded, if the medicine ball fell inside the circle 3 points were awarded, if the medicine ball touched the ball 4 points were awarded. Orientation ability was measured by Numbered Medicine Ball Run Test. The

time taken to complete the test was measured in seconds. Balance ability was measured through Stork Stand Test. The maximum time was recorded in seconds. Rhythmic ability was measured by Straight and Rhythm Run Test. The difference between the timings of the 1st and 2<sup>nd</sup> attempts in seconds was taken as the score.

The reaction ability was measured through Visual Reaction Timer in (1/100th) seconds. Speed was recorded in seconds to compete the 50-yard dash recommended by (Barry L. Johnson and Jack K. Nelson, (1969) <sup>[1]</sup>).

**Assessment of the Overall Kho Kho Performance**

The overall kho kho performance namely, diving, chasing, defense and pole diving, etc. were assessed by three kho kho experts(coaches) with the help of a 10-point scoring method. The maximum points awarded were 10 and minimum points awarded was 1. The median value of the scores awarded by the experts to the kho kho players were taken as the final score of the overall performance.

**Table 1:** Ratings norms for assessing the overall kho kho playing ability of the players

5 Points	Exceptional ability, near perfect
4 points	Above average ability, not perfect, but quite skillful
3 Points	Average ability, typical
2 Points	Below average ability, characterized by more mistakes than was typical
1 Point	Inferior ability, far below typical performance

**Statistical Analysis**

Descriptive statistics such as mean, standard deviation, minimum and maximum values were used to describe the characteristics of the respective populations. For assessing the normality of data the researcher used Kolmogorov-Smirnov test at  $P<0.05$  level of significant and also checked the skewedness and kurtosis which fell between (-1.96 to +1.96)

Z-value. Multiple correlations were used to find out the relationship between performance and coordinative abilities. The probability values for all parameters were considered at ( $P<0.05$  &  $P<0.001$ ) statistical level of significant.

**Results and Discussion**

**Table 2:** Descriptive Characteristics of Coordinative Abilities and Overall kho kho Performance of South Zone Men kho kho Players

Variables	Minimum	Maximum	Mean	Std. Deviation
Performance	5	9	7.6	1.1
Rhythmic ability	0.27	1.96	0.8	0.22
Reaction ability	1.21	2.5	1.8	0.24
Balance ability	6.3	12.01	9.4	1.2
Differentiation ability	6.9	18.8	12.4	3.1
Orientation ability	6.1	11.6	8.3	1
Speed	5.6	8.9	6.5	0.52

Table 2: showed that the mean & standard deviation of performance was (7.6±1.1), rhythmic ability was (0.8 ±.22), reaction ability was (1.8 ±0.24), balance ability was (9.4 ±1.2), differentiation ability was (12.4 ± 3.1), orientation

ability was (8.3 ± 10), and speed was (6.5 ±0.52) respectively. Maximum and minimum values were also given in above table.

**Table 3:** Multiple Correlations between Coordinative Abilities and Overall Kho kho Performance of Men Kho kho Players

Variables	Performance	Rhythmic Ability	Reaction Ability	Balance Ability	Differentiation Ability	Orientation Ability
Rhythmic ability	-0.036					
Reaction ability	0.075	0.513**				
Balance ability	0.047	0.07	0.164			
Differentiation ability	0.220*	0.497**	0.365**	0.270*		
Orientation ability	-0.290**	0.445**	0.341**	0.245*	0.414**	
Speed	0.11	0.453**	0.376**	0.212*	0.454**	0.483**

Table 3: showed that the positive relationship between overall kho kho performance and differentiation ability was (0.220\*) at  $P<0.05$  level of significant and negative correlation of (-0.290\*\*) was obtained between overall kho kho performance and orientation ability of kho kho players at  $P<0.01$  level of significant of South Zone men kho kho players. Therefore

insignificant relationships were found between kho kho performance and rhythmic ability (-0.036), reaction ability (0.075), balance ability (0.047) and speed (-0.11) respectively of the South Zone men kho kho players. It is well known that coordinative abilities are a combination of different abilities such as differentiation ability, orientation

ability, rhythmic ability, reaction ability, balance ability and speed which play an important role during the playing of kho kho matches. These abilities will be helpful to the coaches and physical educationists to measure the potential of a talented sportsperson at a suitable age. The results showed that differentiation and orientation abilities significantly improved with respect to overall kho kho performance. Similar results were found in studies by (Akram and Venkatesh, 2013) <sup>[3]</sup>. Orientation permits the sportsman to determine the position and movement of his own body and/or of a moving object (opponent, partner) with regard to space (Shondell Donald Stuart, 1972) <sup>[4]</sup>. Coupling or combination movement allows the sportsman to coordinate partial movement of his body with regard to space, time and dynamics (Shondell Donald Stuart, 1972) <sup>[4]</sup>. Differentiation ability permits sportsmen to achieve a higher level of fine tuning or harmony of individual movements and body parts. It finds expression in high degrees of accuracy and movement economy (Hirtz 1985, cited in Science of Sports Training by Singh, Hardayal). These abilities are highly needed by kho kho players. There were insignificant results found between overall kho kho performance in relation to rhythmic ability, balance ability, reaction ability and speed. Similar results were found by (Singh, Joseph 2014 and Akram and Venkatesh, 2013) <sup>[3]</sup>. Kho kho playing needs very good muscle coordination and other coordinative abilities and it helps to combine the overall movement from partial movements in a consistent and coordinated way. Due to this a sportsman is able to execute a higher level of efficiency with higher accuracy in sports

### Conclusion

The significant relationship was found between overall kho kho performance and differentiation ability. There was significant negative relationship between overall kho kho performance and orientation ability. There were insignificant relationships found between overall kho kho performance and other abilities such as rhythmic ability, reaction ability, balance ability and speed.

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