



## Performance of University Level Kho-Kho Players in Relation to Selected Cognitive Variables

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### Abstract

The purpose of the study was to performance of university level kho- kho players in relation to selected cognitive variables the investigator have selection of the samples was selected from those who participated in the south zone Inter University Kho-Kho Tournament from different state. Selected 06 teams form Karnataka, 3 teams form Kerala, 1 team from Pondicherry, 5 teams from Andrapradesh and 4 teams from Tamilnadu collected the data from one hundred and fifty (180) kho-kho players from different category. Chasers=80, Dodgers=80 and All-rounders=80 kho-kho players. The investigator had selected in this studies Reaction time and intelligent the data collected through test and analyzed by using Descriptive statistics One-Way ANOVA/ Duncan's Multiple Range Test and Pearson's product moment correlation.

**Keywords:** Kho-Kho Players, Cognitive Abilities, Reaction Time, Intelligent.

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### Introduction

Today almost every nation in the world attaches great significance to the development of sports in order to improve the nation's health and for the well being of the future generations. Certain nations like USA and Russia even try to project the superiority of their political ideology and social systems through the field of sports. India still considered as one of the developing countries, is also trying to attain such a level of performance in sports and to some extent succeeded in achieving the best performance in such games as cricket, Hockey, Kabaddi, Badminton, Kho Kho etc. Particularly in Kho Kho, India has earned a unique name at international competitions by consistently winning the Asian championships' and SAF Championship'. To become a good and effective kho-kho player one has to possess Psychological qualities are studied under different psychological factors. Cognitive abilities, perceptual abilities, physical dexterity (Psychomotor) abilities etc. Are the various psychological qualities, each of these qualities contains money other qualities which help in better performance in sports. Intelligence is very essential quality in ball games and other sports; it is studied under cognitive abilities of psychological which involve thought process, quick thinking and correct decision making ability. Sports competitions have definite purposes. One of the purposes was to declare the winner. Thus efforts were made by the coaches, institutions, agencies and nations to groom sports

persons who could win. In this process, perennially performances of sportspersons are monitored. Estimation of performance won done both in objective and subjective ways. The mode of assessment varies. Performance of a sportsperson depends upon a number of factors such as fitness level, motor ability, psychological abilities and proficiency over skills, nutrition, and application of strategies. According to the characteristics of the game, the players with different qualities and abilities play in different position in the game. These positions are based on their called chasers, dodgers and all rounder's. Chasers execute many skills like 1) Giving Kho to side 2) Giving kho after faking 3) Giving Advance Kho 4) Moving the cross lane 5) Tapping 6) Ground dive 7) Surprise attacking 8) Pole turning 9) Pole dive 10) Tactics of chasers. Dodgers execute many skills like 1) Chain game 2) Fake 3) Ring game 4) Avoiding the post 5) Avoid clubbing 6) face entry 7) Pole turning 8) Settling at post 9) Chain and ring combination 10) Tactics of dodging.

All-rounder executes both cashing and dodging skills in the game. The game can be played on any surface that suits open field sports. As on today it is played on grounds prepared from mud or even turf. Needless to say that synthetic ground and playing indoor is on card. The game of Kho Kho is as fast as any of the international games or sports. When played between two teams of certain standard, the nature of the game demands sprinting, sudden stopping, changing the directions quickly, faking, diving, on the ground flat, the characteristic turning of the post, giving kho and moving on the cross lane and a host of other movements both during offensive and defensive play. The performance of these skills undoubtedly demands the players to have a

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wide range of physical, motor and Psychology (cognitive) qualities.

Ulric Neisser coined the term "cognitive psychology" and in his book *Cognitive Psychology*, published in 1967 Neisser provides a definition of cognitive psychology characterizing people as dynamic information-processing systems whose mental operations might be described in computational terms. He also emphasizes that it is a "point of view" that postulates the mind as having a certain conceptual structure. Neisser's point of view endows the discipline with a scope beyond high-level concepts such as "reasoning" that other works often espouse as defining psychology. Neisser's definition of "cognition" illustrates this well: The term "cognition" refers to all processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. It is concerned with these processes even when they operate in the absence of relevant stimulation, as in images and hallucinations... Given such a sweeping definition, it is apparent that cognition is involved in everything a human being might possibly do; that every psychological phenomenon is a cognitive phenomenon. But although cognitive psychology is concerned with all human activity rather than some fraction of it, the concern is from a particular point of view. Other viewpoints are equally legitimate and necessary. Dynamic psychology, which begins with motives rather than with sensory input, is a case in point. Instead of asking how a man's actions and experiences result from what he saw, remembered, or believed, the dynamic psychologist asks how they follow from the subject's goals, needs, or instincts.

Cognitive psychology is one of the more recent additions to psychological research, having only developed as a separate area within the discipline since the late 1950s and early 1960s following the "cognitive revolution" initiated by Noam Chomsky's 1959, critique of behaviorism and empiricism more generally. The origins of cognitive thinking such as computational theory of mind can be traced back as early as Descartes in the 17th century, and proceeding up to Alan Turing in the 1940s and '50s. The cognitive approach was brought to prominence by Donald Broadbent's book *Perception and Communication* published in 1958. Since that time, the dominant paradigm in the area has been the information processing model of cognition that Broadbent put forward. This is a way of thinking and reasoning about mental processes, envisioning them as software running on the computer that is the brain. Theories refer to forms of input, representation, computation or processing, and outputs. Applied to language as the primary mental knowledge representation system, cognitive psychology has exploited tree and network mental models. Its singular contribution to AI and psychology in general is the notion of a semantic network. One of the first cognitive psychologists, George Miller is well-known for dedicating his career to the development of Word Net, a semantic network for the English language. Development began in 1985 and is now the foundation for

much machine ontology's. Cognitive psychology was able to benefit greatly from the flourishing of research in artificial intelligence and other related areas in the 1960s and 1970s. In fact, it developed as one of the significant aspects of the interdisciplinary subject of cognitive science, which attempts to integrate a major research area in cognitive psychology. Till recently Kho Kho game was confined to certain pockets in India. Now it has crossed the boundaries of India and has become an International event. Any nation which desires to acquit well in this game is required to cater to all facets of preparation of players namely physical, social emotional and cognitive while the first two facets are usually taken care of the cognitive aspects are not given due consideration. Therefore the researcher has ventured to take up the present study.

### **Delimitations**

1. The study was delimited to 180 male Kho Kho players from three different categories.
2. The study was delimited to male Kho Kho players of south zone states namely Karnataka, Tamilnadu, Kerala, Andhra Pradesh and Pondicherry.
3. The study was further delimited to cognitive abilities viz. Reaction time and intelligent.

### **Limitations**

1. Certain factors like time of rest, diet, regular practice, past experience, sports training, daily routines, life style, socio economic status etcetera which might affect the selected variables were considered as limitations of this study.
2. No special motivational techniques will be used for the subjects during the administration of test period, therefore the difference that may occur in the performance due to lack of motivation may be considered as limitation of this study.
3. The cognitive variables were measured by administering the field test protocol. The difference in the value obtained in comparison with laboratory method was considered as limitation of the study.
4. The performance of the players will be provided by the experts through subjective rating which is considered as one of the limitation.

### **Hypothesis**

1. Chasers, dodgers and all rounder do not differ significantly in their cognitive variables.

### **Selection of the Subjects**

To achieve the purpose of the study, the investigator has selected male kho - kho players who represent South-zone inter university Kho Kho championship. Who are rated as the best players by a panel of expert coaches. The data of 180 (one hundred ninety two) subjects was collected from sixteen universities from Karnataka, Tamilnadu, Kerala, Andrapradesa, and Panditury States. The subjects were participants in the South-zone inter university kho kho

championship

### Sample Size

The present study was conducted on 180 male Kho Kho players of different universities representing different categories such as Chaser, Dodger and all rounder kho – kho players. The sample will be consisting

of 80 male subjects belonging to each category, thus adding to a total of 180 overall. The data collected, for all the subjects under consideration in the present study, were statistically analysed, using the 'F' test to compare the reaction time among chasers, dodgers and all rounders, through One-way analysis of variance based on a completely randomized design (ANOVA).

**Table I.** Cognitive variables and tests

Sl. No	Variables	Tests with unit of measurement	Measurement of variables
1	Reaction time	Electronic chronoscope	Reaction time measured in 1/1000 of a second
2	Intelligence	Ravens Progressive Matrices Test	Awarding 1 point each for correct choice or answer.

**Table II.** ANOVA

Variables	Source of variables	Sum of Square	Df	Mean Square	F	Sig
Simple Reaction Time Light	Between Groups	13043.967	2	6521.984	2.869	0.059
	Within Groups	429588.028	179	2272.953		
	Total	442631.995	180			
Simple Reaction Time Sound	Between Groups	16471.013	2	8235.507	3.965	0.021
	Within Groups	392607.094	179	2077.286		
	Total	409078.107	180			
Discrimination Reaction Time Light	Between Groups	25319.525	2	12659.762	3.564	0.030
	Within Groups	671442.392	179	3552.605		
	Total	696761.917	180			
Discrimination Reaction Time Sound	Between Groups	6177.134	2	3088.567	.893	0.411
	Within Groups	653538.819	179	3457.877		
	Total	659715.953	180			
Intelligence	Between Groups	186.183	2	93.092	1.166	0.314
	Within Groups	15095.733	179	79.872		
	Total	15281.917	180			

### Discussions

The mean reaction time was found to be significantly different among chasers, dodgers, and all rounder kho-kho players. Chasers had better reaction time than the other two Chasers, better performance of chasers in the simple reaction time test was considered Logical closed scrutiny of training and game play of kho-kho illustrates as chasers have to react in quick span of time in order to maximum See the chances of cashing in on the situations and either put-out a Defender or put him/her in peril. The chaser is called upon to take after decision in split second time as regards to rushing a

dodger or to give Kho. As an attacking team member while sitting on a square, a chaser is required to be in reading position- through he was touched by his team male expecting him to utter the word "Kho" only after which he will start the pursuit. A slight movement of the doing before the utterance of the work 'kho' by the attacker will turn out to be counterproductive and such kho-kho players who lack the touch and auditing reaction will grave to be liabilities. Similarly, the chaser on hearing the word 'kho' uttered by the attacker is required to make critical analysis of the situation relate his position to that of the defender his vulnerable and

dominant players among the co-chasers and resort to appropriate movement patterns. On account of pregame repositioning of such moves during training and competitions the kho-kho players who discharge the duties as predominantly chasers will develop better reaction time and concentration.

1. The mean reaction time was found to be significantly different among chasers, dodgers, and all rounder. Kho-kho players Dodgers had least reaction time then the other two.

The defense players for showing in reaction time are also logical. The defense players are called upon to consume as much chasing time as possible by staying on field remaining as not-out. Thus the defenders perform under physical strain more than the other of players. It is common knowledge that agility and reaction time are affected by fatigued constriction. The mean reaction time was found to be significantly different among chasers, dodgers, and all rounder. Kho-kho players all rounders had in between reaction time than the other two. And the mean Intelligent was found to be significantly different among chasers, dodgers, and all rounder kho-kho players. All-rounders had better reaction time than the other two. The intermediate level of performance in simple reaction time test by the all rounding is also logical since this category of Kho-Kho players spend considerable amount of time in rehearsing the attacking skills, which facilitates acquire better reaction time However their involvement in the training of reference skills deter the performance in reaction time events and hence their status. All-rounders, better performance of All-rounders in the intelligent test was considered Logical closed scrutiny of training and game play of kho-kho illustrates as All-rounders have to learn both offensive and defensive skills so better than others two group

#### Findings of the Study

1. There exists significant mean difference is Reaction time (light and sound) among chasers, dodgers and all rounder in kho-kho players. Since  $P = 0.030 < 0.05$ , the test was significant at 5% levels. I.e. there exists significant mean difference in the score of the Reaction Time - among Dodgers, Chasers and All-rounders at 5% levels with Chasers having better Reaction Time score than Dodgers and All-rounders.
2. Since  $P = 0.314 > 0.05$ , the test was not significant at 5% levels. I.e. there was no significant mean difference in the score of the Intelligence among Dodgers, Chasers and All-rounders at 5% levels with All-rounders having better Intelligence score than Chasers and Dodgers.

#### Conclusions

From the findings of the study it may be concluded that:

1. Chaser of kho-kho players has better Reaction time (Light And sound ) than dodgers and all rounder kho-kho players and also all rounder kho-kho players had better than dodgers in Reaction time (light and sound). And Dodgers had least reaction time then the other two.
2. All-rounders of kho-kho players has better Intelligent than dodgers and all rounder kho-kho players

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