

COMPARATIVE STUDY OF REACTION TIME AMONG THREE SPECIALIZED CATEGORIES OF FEMALE KHO-KHO PLAYERS

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ABSTRACT:

To achieve the purpose of comparing reaction time among three specialized categories of female Kho-Khoppers viz., chasers, dodgers and all-rounder, seventy one female Kho-Khoppers (N-71) were drawn as subjects from among the different clubs of Karnataka state and were categorized as chaser (N-22), Dodgers (N-24) and all-rounder (N-25) were selected as subjects for this study. The average age of Kho-Khoppers who were participated in the state level tournament and their average height was 151.87 cm and their average weight was 53.50 kgs. **RESULT:** Chasers of Kho-Khoppers has better simple reaction time (light) than dodgers and all-rounder Kho-Khoppers and also all-rounder Kho-Kho players had better than dodgers in simple reaction time (light). This implies chasers had better simple reaction time (light) and dodgers had least simple reaction time (light) and all-rounder of Kho-Khoppers are in between them. Chasers of Kho-Khoppers has better simple reactions time (light) than dodgers and all rounder female Kho-Khoppers and also all rounderkho-kho players was better than dodgers in simple reaction time (sound), this implies chasers had better simple reach time (sound) and dodgers had least simple reaction time (sound) and all all-rounder of Kho-Khoppers are in between them. Chasers of Kho-Khoppers has better discrimination reaction time (light) than dodgers and all rounder Kho-Khoppers and also all-rounder Kho-Khoppers had better than dodgers in discrimination reaction time (light). This implies chasers had better discrimination reach times (light) and dodgers had least discrimination reaction time (light) and all rounder of Kho-Khoppers are in between them. Chaser of female Kho-Kho players have better discrimination reaction time (light) than dodgers and all-rounder, Kho-Khoppers and also all-rounder Kho-Khoppers had better than dodgers in discrimination reaction time (sound), this implies chasers had better discrimination reach time sound and dodgers had least discrimination reaction time (sound) and all-rounder of kho-kho players are in between them. **KEYWORDS:**Female Kho-Kho, Players, Simple Reaction Time, Discrimination Reaction Time Sound, Light, Chasers, Dodgers, All -Rounder's and Karnataka State.

INTRODUCTION:

Sports is as old as human society and it has achieved a universal following in the modern terms, it has now become an integral part of educational process and social activities. Millions of sports fans participate in different events round the year. Many of them participate in sports for the fun, adventure, health, physical fitness and financial benefits linked with a high degree of popularity. The game of kho-kho is as fast as any of the international game or sports. When played between two teams of certain standards. The nature of the game demands, sprinting sudden stopping, chasing the directions, quickly, faking, diving on the ground flat. The characteristic turning of the post giving kho and moving on the cross lanes as on the four and a host of other movements both diving offensive and defensive play. Kho -Kho is game of chase, the object of each team is to touch or tag move number of players of the opposing side or team, within the stipulated period of time. After a brief period of rest the chasing side dodges and the dodging side chase. The game of Kho- Kho, like the

instincts of man to express impulse of attack and defense is also characterized by offensive and defensive maneuvers and counteractions calls for spectacular skills on the part of every player. The performance of these skills undoubtedly demands the players to have a wide range of physical and motor qualities like strength power. Speed endurance, equality and reaction time etc. Reaction time is defined as “the interval that elapses between a stimulus and the a beginning of a voluntary response”.¹

The Women’s National Championship was started in 1961 at Khotapur in Maharashtra, to motivate the players to achieve higher levels Ekalavya and Jhasni Lakshmi awards were instituted to be conferred on best players in men and women sections respectively. In 1970-71 and 1974-75 junior boys and girl’s national championship were started and in 1980-81 sub-junior boys and girl’s national championship were started.²Knapp³ investigated the simple reaction time of selected top class sport men and research students. Twenty top class sportsman and research students were selected as subjects for this study. The subject’s reaction time was measured by his response to the cessation of a light stimulus. Analysis of data revealed that; (1) the reaction time of sportsmen were significantly shorter than those of the research students (2) the variation in the reaction times of the sport men was significantly less than the variation in the reaction times of the research students. Barrow and Megee⁴ analyse speed of movement and reaction time. When the two are combined is even more complex. It has been fairly well establish that some individuals react quickly but more slowly and some react slowly but are able to run or make very rapidly once they start even though speed of movement and speed of reaction may not show a significant positive relationship when measured separately and then correlated with each other it is difficult to separate them in actual performance. Linebackers in football for instance react quickly in diaghoring the play but still have to move fast enough to be able to make the tackle if he is to be a successful performer.

Kho-Kho players can categorized according their specialty in the game as follows: **Chaser:** InKho-Kho, a player of offensive side who is sitting on a square designated as a chaser. **Defender:** A player of the defensive side who is inside the field for his turn of defending is designated as a defender.**All-rounder:** A team of Kho-Khonormally consists of dominant defenders and dominant offensive players in addition to a few players adopt at both defense

SIGNIFICANCE OF THE STUDY

This study will help to know the reaction time ability among dodgers and chasers and all-rounder in Kho-Khgame.

The study will help to select to potential Kho-Khoplayer for different categories.

This study will show the level of reaction time among chasers and dodgers and all-roundKho-Khoplayer.

The study will help to suggest identical training and selection process for Kho-Khoplayer.

Especially for different categories, the very knowledge of this study may help for the extensive study.

DELIMITATION

The study was delimited to seventy one female (N=71) Kho-Khoplayer selected from certain clubs in Karnataka state.

The study was delimited only to the measurement of reaction time as measured only by reaction time appropriately.

The present study was delimited only to the comparison of reaction time among chasers (N=22) dodgers (N=24) and all-rounder (N=25)

HYPOTHESIS : For the purpose of the present investigation, it was hypothesized that there may not be any significant differences in the mean reaction time of three categories of female Kho-Khoplayer viz., chasers, dodgers and all-rounder

METHODOLOGY: The subjects for the present investigation were drawn from among the female Kho-Khoppers. It was assumed that all the subjects under study had received regular training and were in constant touch with the game before acting as subjects for the present study.

SAMPLE : To achieve the purpose of the present investigation, that is comparison of reaction time among female Kho-Khoppers belonging to three specialized group viz., chases, dodgers and all all-rounder (71) seventy one female Kho-Khoppers, representing different clubs of Karnataka State were draw as subjects adopting the approximately the reaction time instrument.

PROCEDURE: The subject was asked to site comfortably in front of the reaction time apparatus and the subject is instructed in the following way,

Simple Reaction Time: this is a very simple experiment to see how quickly you can respond to certain stimuli, the visual stimuli you will see in this socket before you, and this will be in the form of flash of light, before the light is presented the ready signal will be given by ringing a bell the moment ready signals is given you will keep pressing the telegraphic key which is there in your side of the apparatus and the moment you receive the stimulus you will have to respond to it quickly, your response will be in terms of releasing the telegraphic key, kindly be attentive and respond as quickly as possible.

When the subject release the telegraphic key of this side after the presentation of the stimulus the chromosome stops automatically and gives the reading for that particular trail the readings will be in milliseconds, the only precaution the experimenter have to take is not to release his key till the subject releases the subject's key.

Discriminative Reaction Time: The same procedure was followed for discriminative reaction time changing the color of the lights randomly, the stimuli were green and red light, the subjects was asked to respond only to red light and not green light this makes him to discriminate between the lights.

Following this above procedure the data was collected for all the female Kho-Khoppers selected for the study. Later the same was computerized to give the interperception for the same.⁵

ANALYSIS AND INTERPRETATION OF DATA:

Table No.1 Descriptive statistics – Overall Players

Reaction time variables	Range	Min.	Max.	Mean	Std.	Skewness
	Statistics					
SRTS	155.10	129.80	284.90	203.5070	35.0013	.182
SRTL	194.50	119.50	314.00	198.8338	37.2209	.160
DRTS	200.80	140.00	340.80	260.7014	48.3804	-.307
DRTL	265.40	127.50	392.90	269.6563	53.7868	-.334

Note:SRTS: Simple Reaction Time Sound; SRTL: Simple Reaction Time Light;DRTS: Discriminative Reaction Time Sound; DRTL: Discriminative Reaction Time Light

Table No: 2 One-way ANOVA

Variables	Source of variation	Sum of Squares	Df	Mean Difference	F	Sig
SRTS	Between Groups	8885.918	2	4442.959	3.930	.024
	Within Groups	76870.308	68	1130.446		
	Total	85756.226	70			
SRTL	Between Groups	26086.014	2	13043.007	12.511	.000
	Within Groups	70891.685	68	1042.525		
	Total	96977.699	70			
DRTS	Between Groups	31007.870	2	15503.935	7.936	.001
	Within Groups	132838.58	68	1953.509		
	Total	163846.45	70			
DRTL	Between Groups	42537.270	2	21268.635	9.041	.000

	Within Groups	159974.16	68	2352.561		
	Total	202511.43	70			

Note:SRTS: Simple Reaction Time Sound; SRTL: Simple Reaction Time Light;DRTS: Discriminative Reaction Time Sound; DRTL: Discriminative Reaction Time Light

To test H_1 , construct one-way ANOVA FOR Simple Reaction Time Sound, Discrimination Reaction Time Sound, and Discriminative Reaction Time Light for made conclusions subsequently. From the above table infer the following.

With respect to Simple Reaction Time Sound, the test is significant at $p=0.024$ which was less than the level of significance specified at $p=0.05$. Hence, reject the hypothesis that there was no mean difference in Simple Reaction Time Sound among chasers, dodgers and all-rounder Kho-Khoppers ie. There exists mean difference in Simple Reaction Time Sound among chaser, dodgers and a all-rounder Kho-Khoppers at 5% level of significance.

Observe that, chasers had better Simple Reaction Time Sound than dodgers and all-rounders were in between.

With respect to Simple Reaction Time Light, the test was significant at $p=0.000$ which was seen the level of significance specified at $p=0.05$, hence, reject the hypothesis that there was no means difference in Simple Reaction Time Light among chasers, dodgers and all-rounder Kho-Khoppers ie., there exists mean difference in Simple Reaction Time Light among chasers, dodgers and all-rounders Kho-Khoppers at 5% level of significance.

Observe that, chasers had better Simple Reaction Time Light than dodgers and all-rounder here in between.

With respect to Discriminative Reaction Time sound, the test is significant at $p=0.001$ which was less than the level of significance specified at $p=0.05$. Hence, reject the hypothesis that there was no mean difference in Discriminative Reaction Time sound among chasers, dodgers and all-rounder Kho-Khoppers ie., there exists mean difference in Discriminative Reaction Time sound among chaser, dodgers and all-rounder Kho-Khoppers at 5% level of significance.

Observe that, chasers, had better Discriminative Reaction Time Sound, than dodgers and all-rounder were in between. With respect to Discriminative Reaction Time Light, the test was significant at $p=0.000$ which was seen the level of significance specified at $p=0.05$, hence, reject the hypothesis that there was no means difference in Discriminative Reaction Time Light among chasers, dodgers and all-rounder's Kho-Khoppers ie., there exists mean difference in Discriminative Reaction Time Light among chasers, dodgers and all- all-rounder Kho-Khoppers at 5% level of significance.

Observe that, chasers had better Discriminative Reaction Time Light than dodgers and all-rounder here in between.

DISCUSSIONS:

The mean reaction time was found to be significantly different among chasers, dodgers, and al rounder Kho-Khoppers. 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 purist. A slight movement of the doing before the utterance of the work ‘kho’ by the attacker will turn our

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 pregeminal reposition of such moves during training and competitions the Kho-Khopleayers who discharge the duties as predominantly chasers will develop better reaction time.

The mean reaction time was found to be significantly different among chasers, dodgers, and al rounder.

Kho-Khopleayers Dodgers had least reaction time than 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 al rounder. Kho-Khopleayer's all-rounder had in between 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

CONCLUSIONS :

Chasers of Kho-Khopleayers has better simple reaction time (light) then dodgers and all-rounder KHO-KHO players and also all-rounder KHO-KHO players had better than dodgers in simple reaction time (light). This implies chasers had better simple reaction time (light) and dodgers had least simple reaction time (light) and all-rounder of KHO-KHO players are in between them.

Chasers of KHO-KHO players has better simple reactions time (light) than dodgers and all rounder female KHO-KHO players and also all rounder KHO-KHO players was better then dodgers in simple reaction time (sound), this implies chasers had better simple reach time (sound) and dodgers had least simple reaction time (sound) and all all-rounder of Kho-Khopleayers are in between them.

Chasers of Kho-Khopleayers has better discrimination reaction time (light) than dodgers and all rounder Kho-Khopleayers and also all-rounder Kho-Khopleayers had better than dodgers in discrimination reaction time (light). This implies chasers had better discrimination reach times (light) and dodgers had least discrimination reaction time (light) and all rounder of Kho-Khopleayers are in between them.

Chaser of female Kho-Kho players have better discrimination reaction time (light) than dodgers and all-rounder, Kho-Kholayers and also all-rounder Kho-Khopleayers had better than dodgers in discrimination reaction time (sound), this implies chasers had better discrimination reach time sound and dodgers had least discrimination reaction time (sound) and all-rounder of Kho-Khopleayers are in between them.

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