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Research Article

The Role of Mental Toughness in Competitive Performance of Kho-Kho Players

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ABSTRACT

The main purpose of the study was to compare the mental toughness of kho-kho players. Total 90 (ninety) kho-kho players were selected from Chhattisgarh under the district of Raipur for the purpose of present study. Out of 90 (ninety) kho-kho players were subdivided into three different group i.e. sub junior level (N30), junior level (N30) and senior level (N30). The age of the subjects ranged between 11-19 years. Random group design was adopted for this study. Mental toughness was considered as the variables for the purpose of the present study. Mental toughness was measured by 'mental toughness questionnaire', was measured by 4*10-yard shuttle run and reaction ability was measured by 'Nelson foot reaction time' test. The collected data were statistically treated on the basis of correlation coefficient with 0.05 level of significance. Further one way analysis of variance (ANOVA) was done on three different variables among three different levels of kho-kho players. Later the LSD (equivalent to no adjustment) post-hoc test was done on those dimensions in which "F" ratios were found to be significant, in order to verify whether the difference really exist or not for which the level of significance was set at 0.05 level of confidence. The result of the present study showed that there was positive relationship was found of different level (sub junior, junior and senior) of kho-kho players on mental toughness in the time. Further the result observed that significant differences were found in respect of mental toughness ability among different level of kho-kho players.

Key words - Mental toughness, Performance, mental toughness questionnaire, Nelson foot reaction time and kho-kho players.

Introduction

Kho-Kho is one of the indigenous games in our country. The performance of a sportsman in any game or event depends on physical fitness. The physical fitness or condition is the important motor abilities namely neuro physiological factors and sports performance in all sports depends to great extent on these abilities. Improvement and maintenance of physical fitness is the most important aim of sports training. Agility is the ability to change the direction of body or its parts rapidly which is dependent on strength, reaction time, speed of movement and muscular coordination. Quick start and stops and quick changes in direction are fundamental for good performance in athletics. Running speed is not only an athletic event itself, but it is an important factor in almost all court and field games it can result the difference in whether a performer is able to gain an advantage over his/her opponent. Man's existence and effectiveness depends upon his physical fitness. Even now, physical fitness really implies more than the ability to do a work without much efforts. Physical fitness affects one's life's activities not only the physical well-being and mental effectiveness but also the personal and social adjustment. **S**port is competitive in nature and every sportsman strives to better the previous records and records are broken more rapidly nowadays. "Sports" he states, "is an ideal character-building school for youth. The very nature of sport requires certain amount of skill and physical fitness. Considering caution is required in attempting to draw conclusions about the nature, characteristics, determinants and development of mental toughness in sports because of the theoretical nature of the definition, which owe more to anecdotal plausibility than to empirical research. Looking at the coping processes of young elite players will allow us to understand how the player deals with successful situations. Coping represents an individual's cognitive, and

internal demands**.** Kho-Kho players must develop a range of cognitive and behavioral coping skills to manage the competitive stressors they face.

Agility is the ability to move the body or parts or the body in space or on the ground in order to change directions quickly and accurately. In this aspect the big muscles of the body are involved and they must be coordinate smoothly, rapidly and precisely. In innate capacity and training are important in attaining these factors. It places and important role in activities in the field of kho-kho. Agility helps to perform Kho-Kho playing ability in different game situation.

Most of the games and sports are related with reaction time. It is a most important factor particularly in neuro physiological functions related performance. Reaction time is the time which takes to response to a stimulus. This is clasped time between the presentation of the stimulus and this movement of the body, body parts or object. Reaction time is depending upon the characteristics of the stimuli as well as upon various conditions of the nerve impulse limits the reaction time speed of movements and quick reaction are prized qualities in athletes.

Methods and Materials

Total 90 (Ninety) Kho-Kho players were selected from Chhattisgarh district of Raipur for the purpose of the present study. Out of 90 (ninety) Kho-Kho players were subdivided into three different level i.e. sub junior level (N**30**), junior level (N**30**) and senior level (N**30**). The age of the subjects ranged between 11-19 years. Random group design was adopted for this study. Mental toughness and reaction ability were considered as the variables for the purpose of the present study.

Mental Toughness

For measuring mental toughness level of the subjects, a questionnaire of mental toughness was used and developed by Alan Golberg. It is a popular tool being used by the sports psychologist for measuring the mental toughness of players. This questionnaire measures the five dimensions- rebound ability, ability to handle pressure, concentration, confidence and motivation. In mental toughness questionnaire subjects were require to reply either in 'yes' or 'no' as per the option.

Agility

On the signal ready! go, the timer starts the watch and the subject runs towards the blocks, picks-up one block, runs back to the starting line, places the block behind the starting line, runs back and picks-up the second blocks to be carried back across the starting line. As soon as the second block is placed on the ground, the timer stops the watch and records the time. To trails are allowed to each subject with some rest in between. The time of the better of the two trails is recorded to the nearest 10^{th} of seconds as the score of the test items.

Ability

This test is used to measure the speed of reaction time of the foot in response to a visual stimulus. The test is satisfactory for both boys and girls age five year and above. The subject positions his/her foot so that the ball of the foot is held about one inch from the wall with the heel resting on the table top about two inches from the table edge. The tester holds the reaction timer stick near the wall so that it hangs between the wall and the subject's foot with the base line of the timer opposite to the end of the big toe. Twenty trails are given in this test. The reaction time of each trail is recorded from the line just above the end of the big toe when the foot is pressing the stick to the wall. The average of the middle ten trails, ignoring the five fastest and five slowest trails, is taken as the score as this test.

Statistical Techniques

The collected data were statistically treated on the basis of correlation coefficient with 0.05 level of significance. Further one way analysis of variance (ANOVA) was done on three different variables among three different levels of Kho-Kho players. Later the LSD (equivalent to no adjustment) post-hoc test was done on those dimensions in which "F" ratios were found to be significant, in order to verify whether the difference really exist or not for which the level of significance was set at 0.05 level of confidence.

Result and Discussion

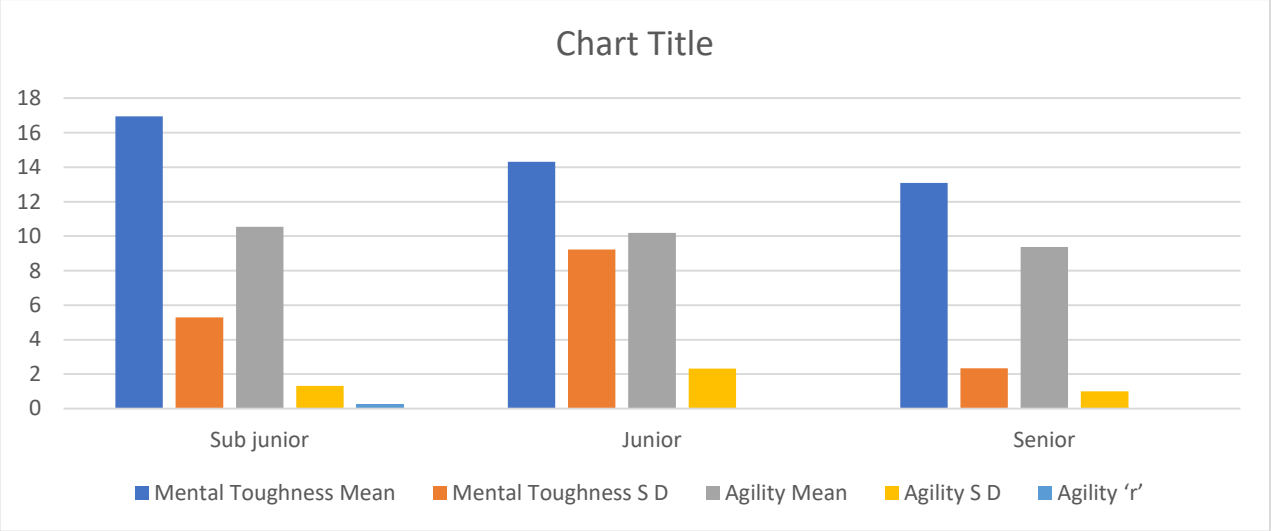
The result of the study has been presented in tabular & Graph form as given here under**.**

Table 1: Relationship of Mental Toughness with Agility among Kho-Kho players

	Mental Toughness		**Agility**		
	Mean	**S D**	**Mean**	**S D**	**'r'**
Sub junior	16.951	5.2889	10.55	1.3214	0.2315
Junior	14.3152	9.2356	10.19	2.3256	0.3982*

Senior	13.0925	2.3391	9.38	1.0052	0.5921*

*Significant at 0.05 level of confidence, 'r'0.05 (28) = 0.361



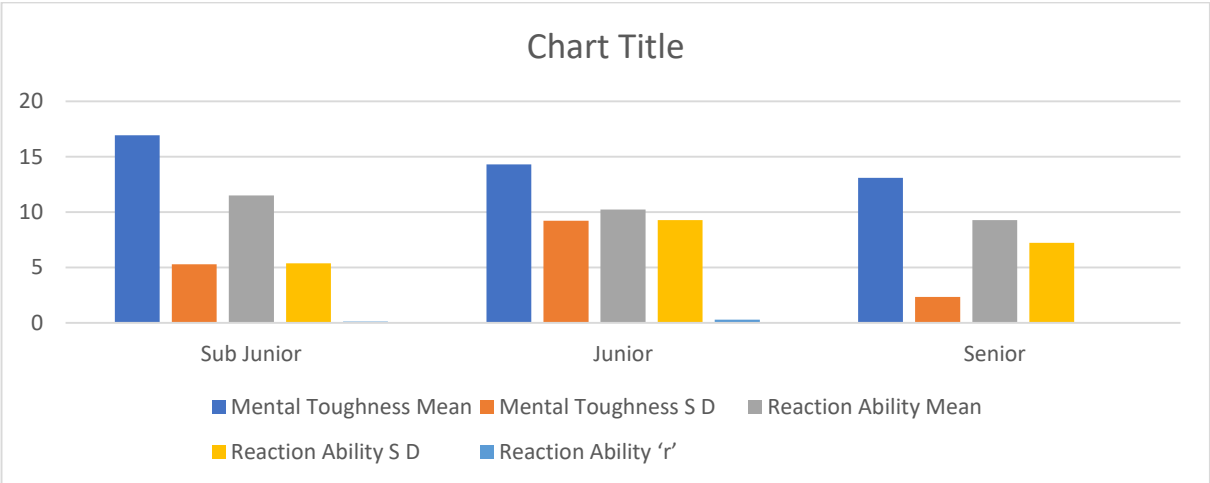
*Significant at 0.05 level of confidence, 'r'0.05 (28) = 0.361

It is evident from Table-1 that there is significant positive correlation was found on mental toughness with agility in respect of junior level (0.3982) and senior level (0.5921) Kho-Kho players. Insignificant positive relationship was found in respect of sub junior (0.2315) level Kho-Kho players. Since the Pearson's Product Moment Correlation required being significant at 0.05 level of confidence is 0.361 with 28 degrees of freedom.

Table 2: Relationship of Mental Toughness with Reaction ability among Kho-Kho players

	Mental Toughness		**Reaction Ability**		
	Mean	**S D**	**Mean**	**S D**	**'r'**
Sub Junior	16.951	5.2889	11.51	5.3652	0.1051
Junior	14.3152	9.2356	10.23	9.2653	0.2901
Senior	13.0925	2.3391	9.27	7.2154	0.4231*

*Significant at 0.05 level of confidence, 'r'0.05 (28) = 0.361



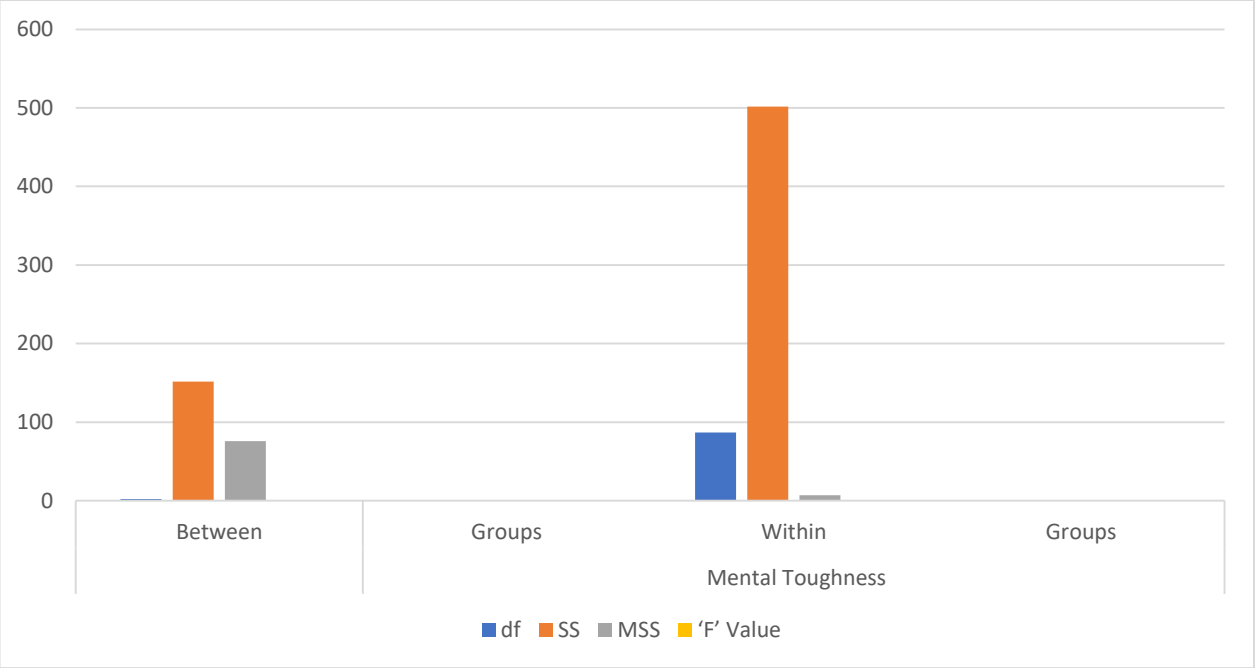
*Significant at 0.05 level of confidence, 'r'0.05 (28) = 0.361

Table-2 revealed that there is significant positive correlation was found on mental toughness in relation to reaction ability in respect of senior level (0.4231) Kho-Kho players. Insignificant positive relationships were found in respect of sub junior (0.1051) and junior level (0.2901) Kho-Kho players. Since the Pearson's Product Moment Correlation required being significant at 0.05 level of confidence is 0.361 with 28 degrees of freedom.

Table 3: One way analysis of variance (ANOVA) done on Mental Toughness among different level of Kho-Kho players.

Variables	Source of Variance	df	SS	MSS	'F' Value
Mental Toughness	Between Groups	2	151.6927	75.8463	10.9699*
	Within Groups	87	501.5201	6.9140	

*Significant at 0.05 level of confidence, "F"0.05 (2, 87) = 3.03



*Significant at 0.05 level of confidence, "F"0.05 (2, 87) = 3.03

The above Table-3 clearly evidence that significant differences exist between the means scores of sub-Junior & Senior levels (MD=1.17) Kho-Kho players. Insignificant differences were found between sub junior & junior (0.36) and Junior & senior (0.81) level Kho-Kho players in respect of agility. Critical differences (1.0633) were set at 0.05 level of confidence.

Further it is observed that significant differences exist between the means scores of sub junior & junior levels (MD=1.28) and sub junior & senior levels (MD=2.24) Kho-Kho players. Insignificant differences were found between junior & senior (MD=0.96) level Kho-Kho players in respect of agility and reaction ability. Critical differences (1.0633 and 1.0826) were set at 0.05 level of confidence.

This result also shows that senior level Kho-Kho players have better agility (9.38) and reaction ability (9.27) in comparison to sub junior and junior level Kho-Kho players.

Discussion of Findings

After seeing all the findings, it was clearly indicated that there was positive relationship found on mental toughness in relation to agility and reaction ability. And also observed that significant mean differences among Kho-Kho players in respect of mental toughness, agility and reaction ability. This may be because of the reason that the growing age level is main factors.

Fourie and Potgieter (2001) Identify characteristics of motivation as being determined, responsible, committed and rank motivation as the highest characteristics within mental toughness.

Bull (2005) Suggest that one important factor of mental toughness is touch thinking and proposed that most applied sports psychology work focuses on developing this aspect.

Jones and Hanton (2002) Suggest that the core of mental toughness is the ability to control emotional responses and concentrate on what has to be done in pressure situations.

The findings must be due to the fact that sports participation provides ample opportunities for emotional outlet to its participants and enable them to regulate the negative emotion associated with the environment as well as make them to do better on the task at hand.

Reaction time is a pioneer fitness component for Kho-Kho game by the nature of the game it requires quick action and reaction. The player has to move fast in the playing arena and cover the whole court then only he can put pressure on the opponent. Therefore, a Kho-Kho player more agile, stable and this study also reveal positive association agility and Kho-Kho playing ability. During game situation Kho-Kho player can change his

position simultaneously according to the playing situation. The result of the present study consonance with the study conducted by Morre (2014) and Patel (2013).

Conclusions

Within the limitation of the present study the following conclusions were drawn on the basis of obtained results:

- Significant positive relationship was found in respect of junior & senior level Kho-Kho players and insignificant positive relationship were found in respect of sub junior level Kho-Kho players on mental toughness in relation to agility. Significant positive relationship was found in respect of senior level Kho-Kho players and insignificant positive relationship were found in respect of sub junior and junior level Kho-Kho players on mental toughness in relation to reaction ability.
- Further the result observed that significant differences were found in respect of mental toughness, agility and reaction ability among different level of Kho-Kho players.

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