

A Study on Agility and Dynamic Balance of Kho-Kho Handball and Basketball Players



Physical Education

KEYWORDS : Agility, Dynamic balance

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ABSTRACT

The purpose of the present study was to compare selected motor fitness components of kho-kho, Handball and Basketball players of West Bengal. In the present study Agility and Dynamic Balance were chosen as variable for motor fitness components. The study was conducted on seventy five (N=75) players [Twenty five kho-kho, twenty five handball and twenty five basketball players]. They were selected randomly from three districts of west Bengal Viz. North 24 parganas, Burdwan and Kolkata. The age group of the subjects was ranged from (14 – 18) years. In this study agility were measured by SEMO agility Test and dynamic balance were measured by Modified Bass test. Mean and standard deviation of each variable were calculated. To determine the significant difference among the means of three games in the selected motor fitness components, one way analysis of variance (ANOVA) was used. The level of significant difference was set at $p < 0.05$ level of confidence. For statistical calculations Excel Spread Sheet of windows version 7 was used. The result of the study showed that, there was no significant difference in selected motor fitness components of the three different games.

INTRODUCTION

For performance excellence, in any activity, specific fitness is very important besides psychological soundness, technical & tactical efficiency and intellectual soundness. The level and types of fitness is different according to the demand and nature of sports. The fitness quality required in large area games like football, rugby, and hockey differed from that of the small area games like Basketball, Handball, kho-kho etc. Now the question arises that, is there any difference in motor fitness among the players of different small area games? To get the answer the researchers planned the present project. They were interested to compare two specific fitness parameters – agility and dynamic balance separately for three different small area games viz. kho-kho, handball and basketball.

Handball and Basketball are two very popular games in the world today. With respect to that of kho-kho, an India game has yet not been so popular around the world but it has a rapid increasing trend of popularity in the Asiatic countries and few western countries as well. There are number of competitions also held in kho-kho at various levels like district, regional, national, continental or international. All the three games are small area games and the playing area required for laying out the fields are almost same and also the movements executed by the players are also similar in nature. All the three games are played with high speed and intensity required quicker change of position and direction. Thus all the three games are merely similar in nature from the stand point of speed, agility and movement pattern like short sprint, zig-zag run, jump, etc. However, there is no doubt that execution of such type of movements, required high degree of motor fitness, balance and coordination ability. Above discussion implies that though kho-kho is not a ball game but it has some similarity and dissimilarity as well with basketball and handball. Now the question is that is kho-kho as a game, comparable to the most popular small area games like basketball, handball etc.? Is there any difference in fitness quality required to play kho-kho than basketball, handball and others? Can kho-kho be promoted as a substitute of other most popular small area games in the world of sports? The researchers were interested to investigate the above question. Among a group of fitness variable, agility and dynamic balance was chosen with a view as these two is the utmost requirement for performing best in all the three games. It was presumed that agility and dynamic balance are the two most important factors required for all small area games though may be in varied amount. The investigators were interested to find out the amount of agility and dynamic balance possessed by the district level players in the above three games. Accordingly the present project was planned to gather information about agility and dynamic balance of district level kho-kho, handball and basketball players of

west Bengal. Possibly the result would be helpful to the coaches for selecting and constructing training programs for the future players.

METHODS & MATERIALS

Twenty five kho-kho ($N_1=25$), twenty five handball ($N_2=25$) and twenty five basketball ($N_3=25$), players were taken as the subjects for the present study. Thus total no of subjects were (**N=75**) seventy five only. The age group of the subjects was ranged from (14 – 18) years. They were selected from three separate districts of west Bengal Viz. North 24 parganas, Burdwan and Kolkata. For the present project random group design was adopted. Agility and Dynamic-balance were the variables for the present study. Agility and Dynamic-balance were measured by SEMO agility Test and Modified Bass test respectively. Mean and standard deviation were the descriptive statistics and one way analysis of variance (ANOVA) i.e. by 'F' test was used as comparative statistics in the present study. The level of significant difference was set at $p < 0.05$ level of confidence. For statistical calculation Excel Spread Sheet of windows version 7 was used.

RESULTS

In Table-1 the mean and standard deviation of obtained data belonging to motor fitness item of agility as measured by SEMO agility test of kho-kho players, handball players and basketball players have been presented.

Table 1
Mean and Standard Deviation of agility of Kho-Kho, Handball and Basketball players

Name of the game	Agility (Measured in Sec.)	
	Mean	Standard deviation
Kho-Kho	12.83	0.47
Handball	12.74	0.54
Basketball	12.88	0.70

From Table-1 it was found that the mean and standard deviation of agility of the kho-kho players were 12.83 ± 0.47 sec, handball players were 12.74 ± 0.54 sec, and basketball players were 12.88 ± 0.70 sec. Figure-1 indicates the mean value of agility of the subjects of different games viz. kho-kho, handball and basketball.

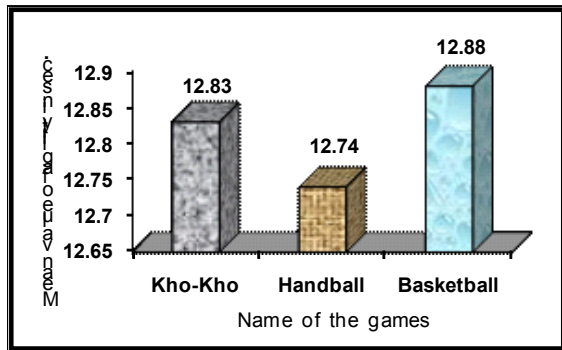


Figure 1: Mean value of agility for the subjects of different game

The mean and standard deviation of obtained data belonging to motor fitness item of dynamic balance as measured by Modified Bass test of kho-kho players, handball players and basketball players have been presented in Table-2

Table 2
Mean and Standard Deviation of Dynamic Balance of Kho-Kho, Handball and Basketball players

Name of the game	Dynamic Balance (Measured out of 100 score)	
	Mean	Standard deviation
Kho-Kho	68.88	9.74
Handball	72.40	9.51
Basketball	69.32	9.74

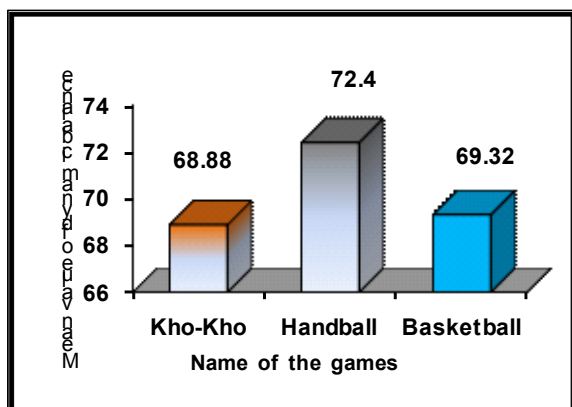


Figure 2: Mean value of dynamic balance for the subjects of different game

From Table-2 it was found that the mean and standard deviation of dynamic balance of the kho-kho players were 68.88 ± 9.74 score, handball players were 72.40 ± 9.51 score, and basketball players were 69.32 ± 9.74 score, Figure-2 indicates the mean value of dynamic balance of the subjects of different games viz. kho-kho, handball and basketball.

To find out whether there was any significant difference among mean values of agility for the subjects of different games, one way analysis of variance (ANOVA) technique was employed. 'F' ratio of agility has been presented in Table- 3.

Table 3
'F' ratio for Agility of kho-kho, Handball and Basketball players

Variable	Source of variance	Sum of squares	Mean square variance	Degree of Freedom	'F' ratio
Agility	Between Groups	0.26	0.13	(K- 1) = 2	0.39
	Within Groups	23.94	0.33	(N-K) = 72	

*significant at 0.05 level of confidence: $F_{0.05}(2, 72) = 3.11$

From the above table it was found that in case of agility there were no significant differences among the kho-kho, handball and basketball players. The calculated "F" ratio of the table (0.39) is lesser than the table value $F_{0.05}(2, 72) = 3.11$. The level of confidence was set at 0.05 levels. Thus the difference in respect of agility among the three groups was not significant, slight difference might be due to sampling error.

In case of dynamic balance to find out whether there was any significant difference among the mean values for the subjects of different games, also one way analysis of variance (ANOVA) technique was employed. 'F' ratio of dynamic balance has been presented in Table- 4.

Table 4
'F' ratio for Dynamic balance of kho-kho, Handball & Basketball players

Variable	Source of variance	Sum of squares	Mean square variance	Degree of Freedom	'F' ratio
Dynamic Balance	Between Groups	182.92	91.96	(K- 1) = 2	0.98
	Within Groups	6724.08	93.39	(N-K) = 72	

*significant at 0.05 level of confidence: $F_{0.05}(2, 72) = 3.11$

From Table-4 it was found that in case of dynamic balance also there were no significant differences among the kho-kho, handball and basketball players. The calculated "F" ratio of the table (0.98) is lesser than the table value $F_{0.05}(2, 72) = 3.11$. The level of confidence was set at 0.05 levels. Thus the difference in respect of dynamic balance among the three groups was not significant, slight difference might be due to sampling error.

On the basis of analysis of data the following results were obtained for the present project:-

- In agility no significant difference was found among the Kho-Kho, handball and basketball players.
- Also no significant difference in dynamic balance was obtained among the kho-kho, handball and basketball players.

DISCUSSION

Results of the present study confirmed that there was no statistically significant difference in the mean value of agility and dynamic balance among the kho-kho, Handball and Basketball players. This may be due to the fact that all the three games are played in such a court that is almost equal in area and considered as small area games and all the three games are played with high speed and intensity required quicker change of position and direction. Thus all the three games are merely similar in nature from the stand point of speed and movement pattern like short sprint, zig-zag run, jump, etc. required similar type of motor fitness, balance and coordination ability, may also be a cause of no significant difference. The training and coaching programs on district level players in our country is yet not been structured scientifically specific to a particular game. Most of the players practices under less qualified coaches and fitness experts having very little knowledge in the science of the game. Some of the players practices under self guidance. This may be a cause of general fitness development rather game specific fitness development required for high level performance. This

type of result may perhaps due to the above fact that the subjects represented as players of different games had almost equal general motor ability causes no significant difference in agility and dynamic balance. Further the investigator is of the opinion that it may also happen due to sampling error as the sample size was not too large.

CONCLUSIONS

Within the limitations of the present investigation following conclusions were drawn on the basis of the obtained results:

- i) Agility among the kho-kho, handball and basketball players does not differ significantly
- ii) Dynamic balance also does not differ significantly among the kho-kho, handball and basketball players

REFERENCE

1. Asadi, A; Arazi, H, (2012). Effects Of High-Intensity Plyometric Training on Dynamic Balance, Agility, Vertical Jump and Sprint Performance in Young Male Basketball Players, *Journal of Sport and Health Research*, 4(1):35-44] *Sport Health Res* ISSN: 1989-6239 | 2. Atasavun Uysal Songül et al (2010). Comparison of Balance and Gait In Visually or Hearing Impaired Children, *Faculty of Health Sciences Department of Physical Therapy and Rehabilitation Hacettepe University, Ankara*. Volume 111, Issue, pp. 71-80. | 3. Chaouachi A, et al., (2009). Lower limb maximal dynamic strength and agility determinants in elite basketball players, *Research Unit Evaluation, Sport, Santé, National Center of Medicine and Science in Sports, Tunis, Tunisia*, , Vol-5, pp- 1570-77. | 4. CON, Hrysomallis (2011). Study on balance ability and athletic performance, *J Strength Condi Res*, Volume 41, Issue 3, and pp 221-232. | 5. David L. Paris, (2001) "effects of the ankle taping on speed, balance, agility, and vertical jump." *Journal of Ex Sc*, department of exercise science at Concordia University in Montreal, Quebec, Canada, Vol-15, No-1, pp-63. | 6. Delextrat, A. and Cohen, D., (2009). Strength, power, speed, and agility performances of women basketball players, *Journal of Strength Conditioning Research*, Volume 23 - Issue 7 - pp 1974-1981. | 7. M Macura (2011). Speed and Agility of 12 and 14 Years Old Elite Male Basketball Players. *University of Belgrade, Faculty of Sport and Physical Education; University of Ljubljana, Faculty of Sport*. Vol.5, 1470-78. | 8. Michael L. Hobbs B.S, (2008). Dynamic balance and basketball playing ability, A Thesis Presented to the Graduate Council of Texas State University-San Marcos in Partial Fulfillment of the Requirements for the Degree Master of Education | 9. Singh S.Surender, (2010). A study on the physical fitness among hand ball and football players in Hyderabad, *Asian Journal of Physical Education and Computer Science in Sports*, Vol-4, No.147 pp147, ISSN 0975-7732. | 10. Vishaw Gaurav, Amandeep Singh and Sukhdev Singh, (2011). Comparison of physical fitness variables between individual games and team games athletes, *Indian Journal of Science and Technology* Vol. 4 No. 5 ISSN: 0974- 6846.