



Short Communication

Performance Physical Fitness Components as Predictors of Kho-Kho Performance Ability

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Abstract

The aim of this study was to investigate the selected performance physical fitness components to evaluate the performance ability of male kho-kho players. The data was collected from 120 male players of Junior National Level representation of Andhra Pradesh state were selected. The age group of the players were ranged from 18 years to 20 years. The selected performance physical fitness components are Speed (50Mts Sprint), Muscular power (Standing Broad Jump), Muscular Endurance (Bent knee sit-ups), Cardio Vascular Endurance (600 yard dash), Reaction Ability (Reaction ability test), Speed Endurance (300 Mts run), Agility (10x4-shuttle-run), Flexibility (Wrist and Ankle Flexibility). Investigation was carried out using Pearson's Product Moment Correlation method which was set at 0.05 level of significance. The findings showed that a significant relationship on kho-kho performance ability indicate that there was significant relationship was coefficient of correlations of speed component of physical fitness had negative but significant correlations with playing ability of kho-kho players at 5% level. Agility (0.268), Reaction ability (0.195), Speed Endurance (0.183) and ankle flexibility (0.163) had positive and significant correlations with playing ability of kho-kho players at 5% level. Other variables of physical fitness, i.e. muscular strength (-0.104), muscular endurance (-0.14), muscular power (-0.061), cardio-respiratory endurance (0.123) and Ankle flexibility (0.169) have no significant correlation with playing ability of kho-kho players. It suggests that agility, speed, Reaction Ability, Speed Endurance and ankle flexibility have inverse relations with playing ability of kho-kho players.

Keywords: Speed, Reaction Ability, Agility, Flexibility, Speed endurance.

Introduction

The focus of every individual or a team in sports is to win the game where the participated as our society attaches great significance to "winning". In view of Renewes (1972), "Performance is key note of all sports its basic principles. Since the sports have become prestigious aspect to prove one's superiority, the philosophy of participating in games and sports has undergone a great change". Sports performance is a multidimensional product of athlete's capacities and their interaction with athletic environment. Being multidimensional suggests that a variety of factors are involved in actually attaining performance goals¹.

According to Harri Dhetch (1982), adoption of modern scientific methodologies in sports training activities have made sports to stand at another heights by setting up new goals in modern sports. Due to which the standards of performance is raised and new records are being set for human skill and stamina².

More over sports training has become more efficient and effective, as a result of which the fundamental and applied research have been developed in the area of mechanics, physiology, psychology, nutrition and sports medicine. Hence

competition at all levels are so keen that no coach or player can afford to neglect the application of scientific training principles that can give him as advantage over or at least keen him in pace with his/her opponent.

Physical fitness is the most important determinant of excellent performance in sports. However, importance of various components of fitness varies with different sports for better performance. Physical fitness is possible through the study of motor fitness. The motor fitness can be understood by analysis of its components like speed, strength, endurance flexibility, agility, coordination ability and balance. Even if physical fitness is conditioned by heredity, physical organic and behavioral components. It is also affected by factors such as social class, socio-geographic (rural-urban) environment and cultural values (Renson et al 1978)³.

In group game like kho-kho, true measurement of playing capacity is done through evaluation of game performance. Objective evaluation of game performance is not found possible. It is also observed that all the abilities of the players could not be assessed through game performance evaluation. Generally the game performance is evaluated by three expert coaches through observation, which is subjective in nature. The performance during kho-kho Competition is being assessed to a

certain extent, objectively, through statistical information. It is revealed that the tests which can predict the actual match performance of the player are composed of techniques of the body 9 movements that are requires to be performed during game⁴.

Research findings have revealed that Kho-Kho playing ability can be indirectly evaluated through the performance in running and chasing movements as the playing ability assessed through expert ratings was found related with performance in during game running and chasing movements.

Methodology

Statement of the Problem: Performance Physical Fitness Components as Predictors of Kho-Kho players Performance Ability of Junior National Level representation from Andhra Pradesh State.

Selection of Subjects: To accomplish the study random sampling technique has been used to select the subjects. The subjects were one hundred twenty Boys Junior National level representation of Andhra Pradesh state Kho-kho players between 18 to 20 years of age. All the players used as a subject had participated in Junior National Kho-kho competitions for boys during the academic year 2014-16.

Selection of Variables: Independent Variables : Physical fitness Components, Dependent Variables: Overall Kho-Kho Playing Ability/Performance.

Hypotheses of the Study: i. There would be a significant relationship between performance physical fitness components and playing ability of boy's kho-kho Players. ii. Playing capability of kho-kho players could optimally be predicted on the basis of performance physical fitness components.

Tests and Collection of Data

Components Measured	Tests
Muscular Strength	Pull-ups
Muscular Endurance	Bent Knee-Sit ups
Agility	Shuttle Run
Muscular Power	Standing Broad Jump
Speed	50 Mts Sprint
Cardiovascular endurance	(600 yards run/walk/12 min. run/walk)
Flexibility	(Wrist and Ankle Flexibility)
Reaction Ability	Foot Reaction test
Speed Endurance	300 Mts run

Pull-Ups (Muscular Strength): Maximum numbers of completed pull-ups are recorded in final score.

Sit Bent Knee -ups (Muscular Endurance): The number of correctly executed bent knee sit-ups performed in one minute, were recorded as his score.

Agility (Shuttle Run): The time was recorded in one tenth of a second.

Muscular Power (Standing Broad Jump): The best out of three trials was recorded in centimeter as his score.

Speed (50 Mts Sprint): The time was recorded to the nearest one tenth of a second.

Cardiovascular endurance (600 yards run): Time was recorded in minutes and seconds as ones score.

Flexibility (Wrist and Ankle Flexibility): The angle through which the wrist moved from flexion to extension was measured of the both hands of subject separately and the average score was recorded in degree.

Reaction Ability (Foot Reaction): The time was recorded to the nearest one tenth of a second.

Speed Endurance (300 Mts run): The time was recorded to the nearest one tenth of a second.

Playing Ability: It is the prerequisite quality of players which makes capable player to achieve top level performance in a particular game and sports. It determines the level of performance of each player during actual game. It is the judgment of a player's in defensive (running) and offensive (chasing) situation by the experts during the match. In the present study, the playing of kho-kho players was judged with five point rating scale by three experts during the match and average score was considered the playing ability score of an individual.

Significance of the Study: i. The results of the study promises a guideline about the relationship of selected performance physical fitness components and kho-kho performance with kho-kho playing ability. ii. The results of the study would provide criteria for the selection of talented kho-kho players. iii. The physical education teachers and coaches may be benefited to inform their trainees about the specific performance components that should be required by each kho-kho players. iv. The study may help coaches and trainers for preparation of training schedules for better performance in kho-kho game. v. The finding of the study will be of significant to physical education teacher and coaches in selecting the best suitable boy's kho-kho players on the basis of their predicted performance physical fitness components.

Results and Discussion

Person's product moment coefficient of correlation was used to analyze the data to assess the relationship of overall Kho-Kho playing ability of boy's players with each of the performance physical fitness components to predict playing ability of boy's kho-kho players.

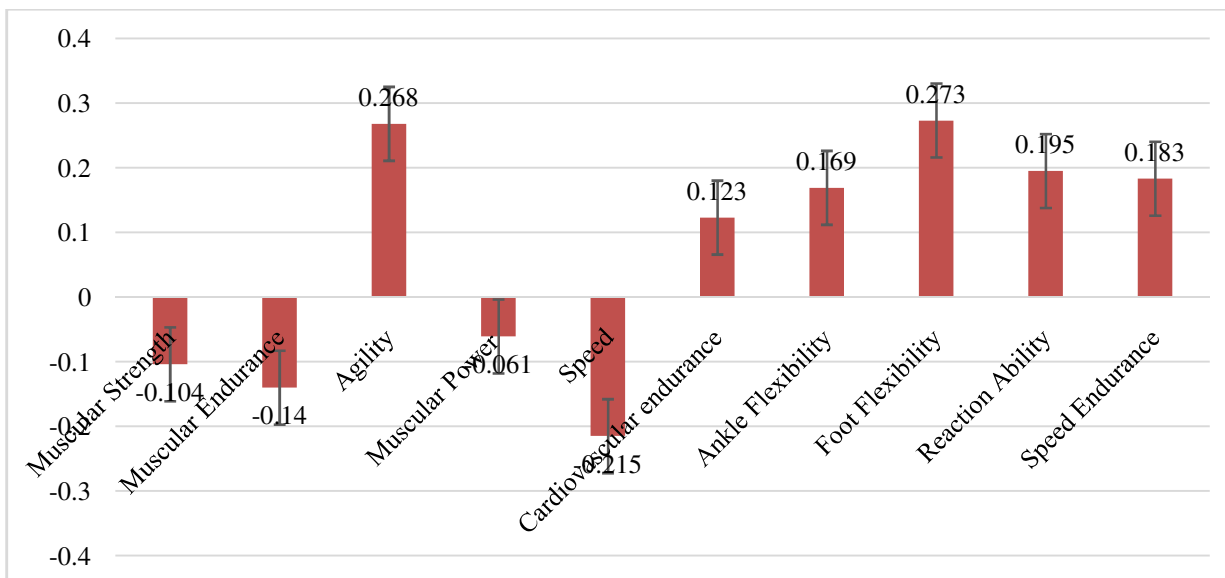


Figure-1
Relationship Between physical fitness Components and playing ability of kho-kho

Table-1
Relationship of physical fitness Components with playing ability of kho-kho players

S.No	Physical Fitness Components	Coefficient of correlation (r)
1	Muscular Strength	-0.104
2	Muscular Endurance	-0.14
3	Agility	0.268*
4	Muscular Power	-0.061
5	Speed	-0.215*
6	Cardiovascular endurance	0.123
7	Ankle Flexibility	0.169
8	Foot Flexibility	0.273*
9	Reaction Ability	0.195*
10	Speed Endurance	0.183*

N = 12, * significant at 5% level $r=0.174$, DF = 118

From Table-1, shows that coefficient of correlations of speed component of physical fitness had negative but significant correlations with playing ability of kho-kho players at 5% level. Agility, Reaction ability, Speed Endurance and ankle flexibility had positive and significant correlations with playing ability of kho-kho players at 5% level. The components of physical

fitness, including muscular strength, muscular endurance, muscular power, cardio-respiratory endurance and wrist flexibility have no significant correlation with playing ability of kho-kho players. It suggests that agility, speed, Reaction Ability, Speed Endurance and ankle flexibility have inverse relations with playing ability of kho-kho players.

Conclusion

From Table-1, shows that coefficient of correlations of agility, reaction ability, speed endurance and ankle flexibility had positive and significant correlations with playing ability of kho-kho players at 0.5% level. Speed component of physical fitness has negative but significant correlation with playing ability of kho-kho players at 0.5% level. Other components of physical fitness have no correlations with playing ability of kho-kho players. It suggests that agility, speed, reaction ability, speed endurance and ankle flexibility have inverse relation with playing ability of kho-kho players.

Reference

1. Renewas J. (1972). Human Performance. Balment Books Co. California.
2. Dhetrich Harri (1982). Principles of Sports Training. Berlin: Sport Verlay.
3. Robson M. et al. (1978). A Comparative Study of Physical Fitness of Elementary School Children of Defence and non-defence Personnel. *Snipes Journal*, 1, 22.
4. Singh Hardayal (1993). Science of Sports Training. ND: D.A.V. Pub.