Comparative Study on Selected Physical Fitness and Physiological Variables between Kabaddi and Kho-kho Players

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Abstract

The purpose of the study was Compare the selected Physical fitness and Physiological variables between Kabaddi and kho-kho players. Thirty female players of kabaddi and kho-kho represented their school/talluk in the district level tournament during 2019-2020 from Mandya district were selected as subjects, their age ranged from 14 to 17 years. The study was an experimental research, the selected physical fitness and physiological variables such as flexibility, endurance, agility, explosive strength, heart rate, vital capacity, and cardiovascular endurance were measured. Analysis of Data,'t' test were applied to check the significant difference between the group. There was significant difference between physical i.e. flexibility and explosive strength & physiological variables and there was no significant difference between physical variables i.e. Endurance and agility. Conclusion: it was concluded that there was a significant difference in some selected physical & physiological variables i.e. flexibility, explosive strength & endurance, agility and this type of study need to replicate in variety of players, both male and female or different level of age group, and higher level like national level, taking a large number of subjects.

Keywords: flexibility, endurance, agility, explosive strength, heart rate, vital capacity and cardiovascular endurance.

Introduction

Sport is one of the avenues of man's never ceasing strive for excellence. Its uniqueness lies in the intimacy between the physical happenings of human bodies and their repercussions on their minds as well as in the general reconcilability of the social and aesthetic values which sport engenders. Sport evokes experiences that are exclusively human and independent of the changing forms, patterns and customs of a civilization which involves profoundly modifying concepts of our environment.

According to Clarke, H. Harrison (1976) in a society where materials values predominates, participation solely for pleasure, recreation and allied benefits in any activity such as sports, that demands much time, energy and self-discipline is not likely to be very popular or widely practiced doctrine, especially when the nations of the world are openly using sports as an approach to national fitness and International prestige.

Physical/ physiological variables	Objective	Apparatus Used	Test Description	Scoring
Flexibility	To measure the flexibility of the performer in forward bending position	Wooden Box (40'×20'×15'), measuring tape.	The performer stand on the box and then start forward bending without knee bending and touch the front side of the box.	The distance taken in Centimeter
Endurance	To measure the endurance	Athletics' track, measuring tape, stop watch, clapper.	12 minute run/walk was to test the endurance of subjects. Subjects were allowed to warm up before actual performance. On the signal "On your mark and go" the subjects run/walk as possible for 12 minutes.	Distance to the nearest meter was taken and recorded Endurance (12 minute run/walk)
Agility	To measure the agility of the performer in running and changing direction	Measuring tape, stop watch, two wooden blocks (2"×2"×4")	The performer starts behind the starting line on the single go and runs to the blocks, pickup one return to the starting line and places the block behind the line. He then repeats the process with the second block.	The time taken to shuttle run race and recorded to the nearest 1/10 of a meter
Explosive strength	To measure the explosive strength.	Marked ground, Measuring tape, chalk powder	Subject was standing behind the starting line and swings his arm backward and goes downward and then jumps horizontally forward and land with both feet together.	Scoring was done in centimeter of distance from the starting line to the nearest contact point on the ground.
Heart rate	To measure the pulse count	Stop watch, chair	The subject sitting on the chair in easy condition and radial pulse is	Total pulse is counted in 1 minute.

			counted by the evaluator in 1 minute.	
Vital capacity	Determination of vital capacity	Dry spirometer, chair, nose clips.	The vital capacity of the subject was determined by the dry spirometer in sitting position. The subject was allowed to inspire the maximum amount of air voluntarily and then he was asked to blow into the dry spirometer to the maximum extent. While taking the test the nose of the subject was clipped using a nose clip	The vital capacity of the subject was obtained from the movement of the circular volume indicator which was set at 'o' before the vital capacity measure was taken. The result was calculated in liter
Cardiovascular endurance	To measure the cardiovascular endurance	18" high platform, stop watch, chairs. .	The subjects were in their P.T. dresses with canvas rubber soled shoes. They stepped on a 18" high platform, stepping 24 times per minute. The rate was set by metro norm, under the careful guidance of evaluator. Endurance was restricted to 3 minutes (180 seconds). At the most recovery heart rate was recorded from 0.1 to 1.5 minutes	

'Fitness' and 'training' are the most misused and over-used words in English language. Sir roger Bannister defined "Physical fitness" as a state of mental and physical harmony which enables someone to carry on his occupation to the best of his ability with the greatest happiness. Bemergee A. Richard (1982) mentioned that

fitness for sports and work has an absolute and a relative meaning in absolute terms, the man that can run the fastest, Jump the highest output during a working day, must be the fit for the particular activity.

Material & methods

Data were collected on two groups of 15 kabaddi and 15 Kho-Kho players from Mandya district and those who had represented their School/ talluk in the District level tournament during 2019-2020 were selected as subjects, their age ranged from 14 to 17 years.

Statistical Analysis

't' test was applied to check the significant difference between the group. The levels of significance were set at 0.05 level of Physical and Physiological variables of Kabaddi and Kho-Kho Players is presented in table 1, 2, 3 and 4.

Results:

Table 1: Mean and SD of Physical Variables of kabaddi and Kho-kho Players

S. No.	Variables	Kabaddi players		Kho-Kho Player	
		Mean	SD	Mean	SD
1.	Flexibility	16.6	5.21	20.5	5.04
2.	Endurance	2.331	263	2.276	408
3.	Agility	19.8	18.0	15.1	6.00
4.	Explosive Strength	48.7	9.96	40.5	8.47

It is evident from the table I that the mean of Kabaddi players in the Physical variable i.e., flexibility, endurance, agility and explosive strength are 16.6(C.M.) for flexibility, 2.331(m) for endurance, 19.8 (Sec) for agility and 48.7 (C.M.) for explosive strength and in the case of Kho-kho players , the physical variables i.e., flexibility, endurance, agility and explosive strength are 20.5 (C.M.) for flexibility, 2.276 (m.) for endurance, 15.1 (Sec) for agility and 40.5 (C.M.) for explosive strength.

Table 2: Mean and SD of Physiological Variables of kabaddi and Kho-kho Players

S. No. Mean	Variables SD	Kabaddi players		Kho-Kho Players	
		Mean	SD	Mean	SD
1.	Heart Rate	72.9	9.19	58.9	5.31
2.	Vital Capacity	2.985	442.0	3.406	498
3.	Cardiovascular Endurance	72.2	9.81	64.5	5.00

It is evident from the table 2 that mean of Kabaddi players in the physiological variable i.e., Heart Rate, vital Capacity and cardiovascular endurance are 72.2 (beat) for cardiovascular endurance, 72.9 (mm) for Heart Rate and 2.985 for vital capacity and in the case of Kho-Kho players for the variable physiological i.e., Heart Rate, vital capacity and cardiovascular endurance are 58.9 (beat) for Heart Rate, 3.406 (mm) for vital capacity and 64.5 (Sec) for cardiovascular endurance.

Table 3: Significance of Differences of Mean in Selected Physical Variables of Kabaddi and Kho-kho Players.

S. No.	Variables	Mean Differences	't'- ratio
1.	Flexibility	3.9	2.90*
2.	Endurance	0.155	0.628
3.	Agility	4.7	1.37
4.	Explosive Strength	8.2	3.44*

*Significant at 0.05 level of confidence

Table 4: Significance of Differences of Mean in Selected Physiological Variables Between kabaddi and Kho-kho Players.

S. No.	Variables	Mean Differences	't'- ratio
1.	Heart Rate	14.0	2.06*
2.	Vital Capacity	0.475	3.90*
3.	Cardiovascular Endurance	7.7	3.86*

*Significant at 0.05 level of confidence

Conclusion:

Within the limitation of the study and procedure following conclusion were arrived at: There was significant difference between Kabaddi and kho-kho players in physical variables i.e. flexibility and explosive strength. There was no significant difference between Kabaddi and kho-kho players in physical variables i.e. Endurance and agility. There was significant difference between Kabaddi and Kho-Kho players in physiological variables i.e. heart rate, vital capacity and cardiovascular endurance.

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