
A COMPARATIVE STUDY OF THE COMPONENTS OF MOTOR FITNESS IN MALE KABADDI AND KHOKHO PLAYERS

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Abstract

Motor abilities play important role in achieving proficiency in games and sports. Motor Fitness is an athlete's ability to perform effectively during sports. Motor Fitness involves a mixture of speed, agility, power, coordination, strength and so on and are essential for competing at high levels. For this study 20 male players each for Kabaddi and KhoKho were selected from Govt. High School Mangnar, District Poonch, J&K who had played at least at district level or state level. The age group of subjects was ranging between 14-17 years. Test by Barrow motor ability test (1954) was used to measure motor fitness components. To find out the significant differences between means of the Kabaddi and KhoKho players, unpaired 't' test was applied. From the study differences were observed on leg-strength, speed and arm & shoulder strength variables between Kabaddi and KhoKho players but these were insignificant. It was found that Kabaddi players are better in leg strength and arm & shoulder strength whereas Kho Kho players are superior to Kabaddi player in speed.

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INTRODUCTION:

The general definition of physical fitness is "a set of attributes that people have or achieve relating to their ability to perform physical activity" (U.S. Department of Health and Human Services [USDHHS], 1996). Measureable components of physical fitness are health-related physical fitness and skill-related physical fitness. Health-related physical fitness relates to functional health. It is believed that all students can improve their health status through daily physical activity. On the other hand, skill related physical fitness refers to physical performance related to athletic ability. It is performance oriented and influenced by genetic traits and abilities.

The Health-Related components of physical fitness are cardiovascular endurance, body composition, flexibility, and muscular strength and muscular endurance. Cardiovascular endurance is the ability of the heart, blood vessels, and respiratory system to work efficiently delivering oxygen to the muscles for an extended period of time. Walking, jogging, biking, rope jumping, aerobics, and swimming are examples. Body Composition is the proportion of body fat to lean body mass. Typically, activities that help to develop cardiovascular endurance also help to improve body composition. Flexibility is the range of motion through which a joint or sequence of joints can move. The length of muscles, tendons, and ligaments can be increased through stretching. Muscular strength and endurance – Muscular strength is the ability of muscles to exert force (contract). Muscular endurance is the ability to exert force over an extended period (contract repeatedly).

Motor Ability has been defined by Barrow (1964) as “the present acquired and innate ability to perform motor skills of a general or fundamental nature, exclusive of highly specialized sports and gymnastic techniques.” *Motor competency/ ability* refers to the mastery of physical skills and movement patterns that enable enjoyable participation in physical activities. Skill related physical fitness components are agility, balance, coordination, speed, power and reaction time. Agility is the ability to make successive movements in different directions efficiently and rapidly, e.g; shuttle run. Balance is the ability to maintain equilibrium when one’s centre of gravity and base of support are altered, e.g; stork stand. Coordination is the ability to effectively integrate the moments of the body parts, e.g; ball catch, jump rope. Speed is ability to perform rapidly successive movements over a short period of time in a single direction, e.g; short distance sprint. Power is the ability of a muscle or group of muscles to generate maximal force in a single effort e.g; vertical jump. Reaction time/movement is the ability to respond rapidly to a stimulus, e.g; reaction time stick tests. Competence in fundamental movement patterns precedes the development of more-complex motor skills, such as using skills in combination with each other or in environments that are more dynamic. Even with quality instruction and practice, however, some children exit elementary school without developing sufficient technique in a variety of motor skills (Smith & O’Keefe, 1999). Because fundamental skill development is a prerequisite for the development of advanced sport-specific skills, acquiring competence at the fundamental level is critical for determining whether children will have the ability to engage in activities that require a more advanced level of development.

Without such skill, children will be limited in the activities in which they can engage.

As children develop, they gain experience in a variety of activities (Fairclough & Stratton, 2006) and develop greater awareness of their perceived motor competence (Woods, Bolton, Graber, & Crull, 2007)

METHODOLOGY:

Sample:

For this study 20 male players each for Kabaddi and KhoKho were selected who had played at least at district level or state level. The age group of subjects was ranging between 14-17 years.

TOOL USED:-

Barrow's General Motor Ability Test (1954) was used for collecting data. This test battery has following three test items:-

1. Standing Broad Jump (for measuring leg strength).
2. Zig-Zag Run (for measuring agility and speed).
3. Medicine Ball Put (for measuring arm and shoulder strength).

TEST ADMINISTRATION:

The three items were conducted in an athletic field area.

Test Item (1) Standing Broad Jump: This test measures the power of legs in jumping horizontal distance and may be applied to children of both sexes aged seven years and above.

Equipment: Floor was used, measuring tape, marking chalk.



Fig.1 Standing Broad Jump In Barrow Motor Ability Test

Administration: A demonstration of standing broad jump was given to subjects. The subject was then asked to stand behind the starting line with the feet parallel to each other. He was instructed to jump as farthest as possible by bending knees and swinging arms to take off for the broad jump in the forward direction (as shown in the fig. 1). The subject was given three trials.

Scoring: The distance between the starting line and the nearest point of landing provides the score of test. The best (maximum distance) trial was used as the final score of the test.

Test Item (2) Zig- Zag Run: This test item measures primarily agility and secondarily the speed. The subject was given demonstration about the course of Zig- Zag running as illustrated in Fig.2. Then he was instructed to take the standing start position on the signal ready and to start running on the signal 'Go' and that three laps were to be run and fast run was to be continued even after the finish line so as to slow down only after crossing the finish line.

After the signal ready? Go!, the subject began the zig zag run, the timer started the stop watch. As soon as the runner crossed the finish point (F) after the third round, the timer stopped the watch.

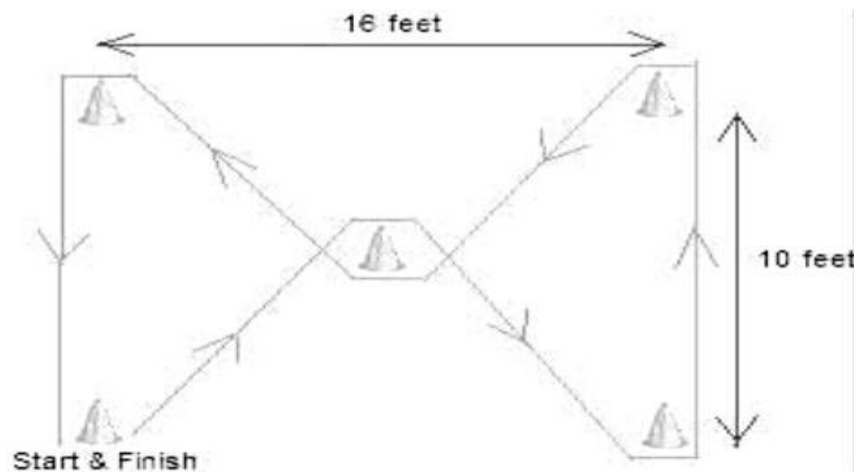


Fig.2 Zig Zag Run In Barrow Motor Ability Test

Scoring: The final score was the time taken to run the three rounds of figure-of-eight.

Test Item (3) Medicine Ball Put: This test measures primarily arm and shoulder girdle strength and secondarily power, agility, arm and shoulder girdle coordination, speed and balance.



Fig. 3 Medicine Ball Test In Barrow Motor Ability Test

Administration: Before starting the test, the subjects were given following instructions. "The medicine ball was not to be thrown but to be put as was demonstrated. The subject was to stand between the two restraining lines as in fig.3 and the ball was to be put straight down the course. After giving above instructions, the event was explained by giving a live demonstration. Then a subject was asked to take a position in the throwing area and put the medicine ball as explained and demonstrated. He was given three trials.

Scoring: The maximum distance out of three trials of putting the medicine ball was the final score.

STATISTICAL TECHNIQUE:-

To determine the significant differences of mean score of male kabaddi and kho kho players, unpaired 't' test was employed for data analyses. To test the hypothesis, the level of significance

was at 0.05

DISCUSSION AND FINDINGS:

TABLE - 1

MEAN DIFFERENCE BETWEEN KABADDI AND KHO- KHO PLAYERS ON VARIABLE OF LEG POWER

| Group | Number | Mean (in sec.) | S D | Df | t - value |
|---------|--------|-------------------|------|----|-----------|
| Kabaddi | 20 | 67.25 | 8.42 | 38 | 0.81 |
| Kho kho | 20 | 65.2 | 7.55 | | |

Table Value at 0.5= 2.02

Table 1 shows that mean and standard deviation values of kabaddi players on the variable of Leg Power were 67.25 and 8.42 whereas in case of kho-kho players it was 65.2 and 7.55 respectively. No significant difference was found between kabaddi and kho-kho players as the calculated t-value 0.81 was less than tabulated value of 2.02 at 0.05 level of significance.

TABLE - 2

MEAN DIFFERENCE BETWEEN KABADDI AND KHO- KHO PLAYERS ON VARIABLE OF SPEED

| Group | Number | Mean (in sec.) | S D | Df | t - value |
|---------|--------|-------------------|------|----|-----------|
| Kabaddi | 20 | 61.7 | 1.9 | 38 | 1.61 |
| Kho Kho | 20 | 59.42 | 5.83 | | |

Table Value at 0.5= 2.02

Table 2 shows that mean and standard deviation values of kabaddi players on the variable of speed were 61.7 and 1.9 whereas in case of kho-kho players it was 59.42 and 5.83 respectively. No significant difference was found between kabaddi and kho-kho players as the calculated t-value was less than tabulated value of 2.02 at 0.05 level of significance.

TABLE - 3

MEAN DIFFERENCE BETWEEN KABADDI AND KHO- KHO PLAYERS ON VARIABLE OF ARM AND SHOULDERSTRENGTH

| Group | Number | Mean (in sec.) | S D | Df | t- value |
|---------|--------|-------------------|------|----|----------|
| Kabaddi | 20 | 21 | 5.20 | 38 | 0.13 |
| Kho Kho | 20 | 21.2 | 3.81 | | |

Table Value at 0.5= 2.02

Table 3 shows that mean and standard deviation values of kabaddi players on the variable of speed were 21 and 5.20 whereas in case of khokho players it was 21.2 and 3.81 respectively. No significant difference was found between kabaddi and kho-kho players as the calculated t-value 0.13 was less than tabulated value of 2.02 at 0.05 level of significance.

CONCLUSION:

In a nutshell it can be said that from the findings that insignificant differences were found between Kabaddi and KhoKho players on the variables of Motor Abilities, i.e. leg strength, speed and arm & shoulder strength. It was found that kabaddi players are better in leg strength and arm & shoulder strength whereas Khokho players are superior to kabaddi players in speed.

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