



PHYSICAL FITNESS BETWEEN KABADDI AND KHO-KHO PLAYERS: A STUDY

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ABSTRACT

The study assesses the variables, Physical Fitness between the Kabaddi and Kho-Kho Players of Government College of Physical Education Ganderbal. The study draws the comparison among the Kabaddi players and Kho-kho players of Government College of Physical Education Ganderbal on the aspects of Physical Fitness. The study is limited to the Kabaddi players and Kho-kho players of Government College of Physical Education Ganderbal, wherein primary data has been collected from 50 participants, who understudied at Government College of Physical Education Ganderbal during the session 2013-14. The players were tested by AAHPER youth physical fitness test in order to measure and compare the fitness level of both Kabaddi and Kho-kho players of Government College of Physical Education Ganderbal. From the data analysis, it emerged that players participating in both the games express no significant variations in their physical fitness level. The physical fitness if on one hand contributes to building sports capacity in one category of sports, on the other hand, work contrary to the aspirations of the sportsman.

KEYWORDS: Physical Education Ganderbal, Kabaddi, Kho-Kho, Players.

INTRODUCTION

It is undeniable that the fit citizens are a nations best resources and feeble ones its liabilities. It is, in this way, the obligation of each nation to advance physical fitness of its citizens in light of the fact that physical fitness is the essential prerequisite for the greater part of the assignments to be embraced by a person in his everyday life. In the event that a man's body is immature or becomes delicate or idle and in the event that he neglects to create physical demonstrates, he is undermining his ability for thought and for work, which is of essential significance to one's own particular life and society in a welfare state. Physical fitness is the ability to do sensibly well different types of physical exercises without being unduly tired and includes characteristics vital to the person's wellbeing and prosperity. Many scientific studies over the past twenty years support the value of regular exercise as part of a lifestyle. Regular participation in enthusiastic exercises increases Physical fitness. A high level of Physical fitness is desirable for a full, productive life.

Standard, vigorous physical activity throughout life significantly diminishes the danger of inabilities and premature death from stroke and heart disease. It can likewise adequately adjust a large number of the imperative hazard factors for cardiovascular disease by lowering down body weight and total serum cholesterol levels, raising HDL "great" cholesterol and promoting the maintenance of normal blood pressure. Physical fitness is a general condition of health and wellbeing or particularly the capacity to perform parts of sports or occupations. Before the modern upset, fitness was the ability to do the day's exercises without undue fatigue. In any case, with modernization and changes in ways of lifestyles Physical fitness is presently viewed as a measure of the body's capacity to work efficiently and adequately in work and leisure activities, to be sound, to fight with different types of diseases and to meet emergency situations. Kabaddi and Kho-kho are the games which require large amounts of Physical fitness; these are of those uncommon activities

which require speed as well as agility, strength, power, and endurance. Players at top levels require most of these components of fitness while performing at the international level.

Physical fitness is vital at all levels of the game while being essential for top-level players; it is advantageous for beginners who will enhance both their viability and enjoyment through a good standard of fitness. The point of fitness preparing in Kabaddi and Kho-kho is to enhance a player to adapt to the physical demands of the game as well as allowing the efficient use of his various technical and tactical competencies throughout the game.

Components of fitness

| Primary components of fitness | Secondary components of fitness: |
|---|---|
| Cardio respiratory capacity. Muscular capacity. Flexibility. Body composition. | Balance. Coordination. Agility. Reaction time. Speed. Power. Mental capability. |

SIGNIFICANCE OF THE STUDY: - The significance of the study was justified on the basis of the following grounds:

- 1) The findings of the present study will help the players to check the level of their physical fitness components like strength, power, and speed etc.
- 2) The study gives us the concept and clear picture about the importance of physical fitness training programs.
- 3) The study helps players to prove themselves best in the field of games and sports.
- 4) The study provides information status of the players of Kabaddi and Kho-Kho.

OBJECTIVES OF THE STUDY: -

Keeping in view the need, background, and purpose of the study, the research was carried out with the following objectives:

- 1) To find out the physical fitness of Kabaddi players of Government College of Physical Education Ganderbal.
- 2) To find out the physical fitness of Kho-Kho players of Government College of Physical Education Ganderbal.
- 3) To compare the physical fitness between Kabaddi and Kho-Kho players of Government College of Physical Education Ganderbal.

HYPOTHESES: -

It was hypothesized that there would be no significant difference between the components of physical fitness between Kabaddi and Kho-Kho players of Government College of Physical Education Ganderbal.

SCOPE OF THE STUDY: -

Physical Fitness levels of the sportsmen on behalf of Government College of Physical Education Ganderbal were measured through AAHPER youth Physical Fitness test. Only male sportsmen, who represented Physical Fitness in the team game, were selected for the study.

OPERATIONAL DEFINITION OF KEY TERMS: -

HEALTH:-“Health is a state of complete physical, mental, social and emotional well-being and not merely absence of disease and infirmity.” (W.H.O 1948).

PHYSICAL FITNESS: - Refers to the natural limit of the person to play out the typical assignment of day by day living without undue fatigue, tiredness or exhaustion having held quality and vitality accessible to meet palatably any crisis all of a sudden set upon him (Clark and Clark 1984).

STRENGTH:-Strength may be defined as the capacity of the individual to exert muscular force. This force is revealed by the individual’s ability to pull, push, lift, and squeeze an object or to hold the body in a hanging position.

CARDIOVASCULAR ENDURANCE: -Ability of human heart with which it can deliver to various muscles of the body is known as cardiovascular endurance.

AGILITY:-May be defined as the physical ability which enables an individual to rapidly change body position and direction in a precise manner.

SPEED:-The ability which helps the various parts of the body to move quickly. Speed (a function of distance and time) is the ability to rapid (swift/with great speed) movements of the same type in the shortest possible time.

FLEXIBILITY: - may be defined as “the range of motion of a given joint or group of joints or the level of tissue extensibility that a muscle group possesses.” (American Council of Exercise).

BODY COMPOSITION:-Body composition is the ratio of weight in kg of a subject and his height squared, measured in meters i.e.

$B.M.I = \frac{\text{Body weight (kg.)}}{\text{Height}^2 \text{ (m)}}$

B.M.I. may be found by measuring body weight and height. The higher the value of B.M.I., the higher is one’s food intake. The value of B.M.I., the higher is one’s food intake. The value of B.M.I. Between 22.0 to 25.0 indicates appropriate nutrition. The B.M.I. lower to 22 indicates poverty or lesser quantity of diet being taken than the required amount of food while B.M.I. greater than 25 indicates lavish and more amount of food than the need quantity and the individual is classified as overweight. B.M.I. reaching 30 indicates obesity and very high risk of getting a weight-related disease like atherosclerosis, type – 2 diabetes, heart disease, Hypertension etc.

RELATED LITERATURE: - A study of relevant literature is an essential step to get a full picture of what has been done with regard to the problem under study. Such review brings about a deep and clear perspective of the overall field. Familiarity with the literature related to any problem helps the scholar to discover what is already known, what others have attempted to find out, what methods of approach have been promising or disappointing and what problems remain to be solved. The review would enable the investigator to have a profound insight. Clear perspective and a better understanding of a chosen problem and various factors are connected with the study.

“The Literature in any field forms the foundations upon which all future work will be built”. The researcher has attempted in this chapter to locate the literature related to this study. The relevant studies taken from World Wide Web site and other sources, which the research scholar has come across, are cited below:

Chung et al. (2009) performed a survey titled “To compare physical fitness levels of Hong Kong-mainland Chinese school children and to study the association between any differences and their respective lifestyles. The study was conducted on primary school children (N=522). Demographic data were collected by questionnaire. Physical fitness tests (height, body weight, sit and reach, long jump, running 50m and lung capacity) were carried out. Significant differences were found in height, body weight, sit and reach, long jump, running 50m and lung capacity. Hong Kong children were found to be taller and heavier at ages 6-7, but heavier with similar height to that of mainland children at ages 8-12. Other results showed better physical fitness on the part of mainland children. The Hong Kong children differ greatly. The findings in terms of physical fitness revealed variations in flexibility, cardiovascular function, body build and muscle power between the two groups. Lifestyle could possibly be a key factor and predictor of physical fitness, providing

strong evidence to support the interaction between lifestyle and genes in their impact on our health outcomes. The finding of this study may enhance the identification of healthy lifestyle which may improve health outcomes in children.

Roy Kuntal (1986) conducted a study on 50 male athletes and found that the combination of speed, power, and flexibility was most effective for the best results in competitive sport. Power training produces better results in speed, jumping strength and is effective in the long jump or high jump performance. Jumping training leads to improvement of flexibility of hip and trunk. Speed training does not seem to be effective for the improvement of strength.

Eiaph. (1971) conducted a study to compare the physical fitness of Negro and White boys of the Taxus School. Negro and white boys (N=100) were the subjects of the study. The subjects were tested on AAHPER youth fitness test. It was concluded that Negro boys obtained higher mean score than the white boys on gross body coordination. The difference was significant at 0.05 levels. Negro boys were significantly higher than white boys with muscular explosiveness. The large mean difference was obtained at 0.01 levels of significance.

Steven, (1987), conducted a study, "The Effect Of Participation In Selected Physical Education Activities Upon Component Of HPF", to find out the change in physical fitness components of the body composition, cardio respiratory Endurance, flexibility and dynamic strength, In addition, it was to determine if there were also significant difference among the selected activities relative to the health-related physical fitness components, and if applicable to locate the differences. The result of the study indicates that all group experienced significant changes due participation in the program activities. Subjects involved in the weight training and aerobic dance groups experienced significant positive changes in body composition, flexibility, and dynamic strength. The researcher observed positive changes in flexibility and dynamic strength. The control group experienced the significant negative result of the study, it was concluded that improvement in body compositions, flexibility, and dynamic strength can occur due to participation in racquetball was found to improve in flexibility and dynamic strength. In addition, no improvement can be expected due to participation in archery.

M. M. Miss(1988), compared two types of post-season training programs, land and water, the effect of each had on and components of fitness on addition pre and post-test scores were evaluated on 6 variables, body composition, flexibility, muscular strength, muscular endurance, power and cardiovascular endurance. The programs were 3 times per week. All the subjects were pretested during first week and post during 9 weeks the data were analyzed by using a Dependent 'T' test. However, a multivariate t-test was also used to determine, if there was any difference between the effect of land and water training for each component. The principles outcome of the study indicates that there was little difference between effect of land and water training on the components of fitness the result for water training indicate that muscle power was the only fitness component of the 6 that did not show a significant different muscle strength was the only component and to show a significant difference between land and water training program.

Cameron (1989), conducted a study with a view to determining the effect of 10 weeks. Aerobic movement program for overweight children on cardiovascular fitness, body composition, and body system. The subject for the study consisted of 20 children 17 female and 3 male age 8 to 12 one group (No = 12) consisted of overweight children one group (No = 8). Cardiovascular endurance was misused in Sec. with a 2-mile walk and jog in the school halls. The self-concept was measured with the Piers-Harris Children self-concept scale. Body esteem was measured with Mendelson and White is body esteem Scale A 2x2 ANOVA was employed to determine the significance of the effect. Overweight and average weight children were the independent variables. Self-esteem, body esteem, and cardiovascular endurance male were the dependent variables. Body composition (triceps skin-fold measures) was used to distinguish the 2 groups and determine weight loss due to the program. The ANOVA indicated no statistically significant improvement in cardiovascular endurance, self-esteem, and body esteem in overweight children in body comparison with average weight children after 10 weeks aerobic movement programmed.

Baldwin (1991), evaluates physical fitness of 34 subjects who were experienced in aerobic dancing from North East High School of Pennsylvania. The experimental group (aerobic) met 5 days a week, 50 minutes per session for a total of 16 weeks. 24 experimental subjects were dropped because they exceeded 3 absences which the study defined as a limit. The control group was not permitted to take physical education course during the research period. The control subject was selected randomly across the 5-grade level (8-12 g) pre and post-test data were collected.

Fitness parameters are cardiovascular endurance, flexibility, muscular endurance, muscular strength and body composition. The following test was utilized. 45 min. A strand rhyming step test, a sit and reach test, one min modified sit up, a hand grip dynamometer test and skin-fold caliper. The result indicated only significant improvement in muscular Strength as a result of participation in the aerobic program however no significant changes were demonstrated in cardiovascular endurance, flexibility, muscular endurance or body composition.

Chaudri et al. (2002) studied the comparative physical fitness between students of residential and non-residential schools aged 12-14 years and had tested physical fitness index (PFI), BMI and anthropometry measures of 50m residential school children and 40 non-residential school children of Bijapur Karnataka. They reported that non-residential school children had poor physical anthropometry and showed a less PFI score, as compared to residential school children.

Pauline (1966) Conducted a study on 9th-grade students (N=270) with a purpose to compare overall physical fitness achievement who received instruction in three varied callisthenic viz. time and flexibility. Three tests sit-ups, standing broad jump and push up test seemed pretest and post-test instructions. Difference between initial and final achievement gain in the physical fitness was compared by F-test. The value of the F-test was found to be significant for calisthenics program. When pretest score was subtracted from the post-test score in standing broad jump, the difference was in favor of the group of students who received timed calisthenics.

Rajaguru (1990) conducted a survey of physical fitness on school boy's age between eleven and sixteen years in Thanjavur and Pudukottai districts and the influence of selected weight training exercises on them. This study was designed to survey the physical fitness of high school boy's age ranging from eleven to sixteen years in Thanjavur and Pudukottai districts and the influence of selected weight training exercises on them. To achieve this purpose, four thousand, six hundred and eighteen boys from the above said districts were selected at random. For this study physical fitness variables were selected as a variable. To test the physical fitness of the boys the researcher used six test items namely Pull – ups for shoulder strength, Sit – ups for Abdominal muscular strength and Endurance, Shuttle run for agility, Standing broad Jump for power, 50 yard dash for speed and 600 yards run for cardio respiratory endurance. After collecting the data from the subjects re-analyzed by using “t” ratio statistical technique. On the basis of interpretations of data the following conclusions were drawn.

1. The selected weight training exercises had significantly improved the physical fitness level of below average subjects in all six items.
2. The selected weight training exercises two hands press high pull up, press behind the neck, triceps press, bench jump, jumping squat and step upon bench had improved the performance in all the physical fitness components namely speed, strength, agility, endurance Abdominal muscular strength and Endurance and cardio respiratory endurance.

Suresh (1993) conducted a study on the survey of health related physical fitness and cultural aspects of school boys of the age group between fourteen to sixteen years of Karnataka State. For the purpose of this study he has selected 1028 boys from Karnataka State at random. For this study following variables were selected.

Test 1 - Sit and reach for Flexibility

Test 2 - Sit ups for abdominal muscular endurance

Test 3 - Bent arm hang for shoulder muscular endurance

Test 4 - Shuttle run for running speed and agility

Test 5 - Harvard step test for cardio respiratory endurance

Test 6 - Body composition (skin fold measurement) sum of Biceps, Triceps, Sub scapular and Supra for body composition. To find out the cultural aspects, relation to the family, rural and urban background, interest of family and friends sports and games. T- test and analysis of variance was used. No significant differences exist among rural and urban group in sit and reach for flexibility. There was no significant difference exists among rural and urban in sit – ups for abdominal muscular endurance. Significance between rural and urban group bent arm hang for shoulder muscular endurance. Harvard step test for cardio respiratory endurance. No significant differences are found in shuttle run for running speed and agility.

Brown sees the effect of supplemental 10 minutes circuit training program on the physical fitness. For this purpose, he tested two classes on the AAHPER youth fitness test before and after 8 weeks of regular Physical education class the experimental class was chosen by chance, had given 9 to 10 minutes supplement circuit training program. Both the classes showed significant gains in all tests except the modified pull-ups and 50-yard dash but the experimental class made greater gains except the shuttle run. The supplemental circuit training produced generally better, but not significant results than the regular program.

P.Sivaraman & et.al studied the effect of resistance training program on performance-related fitness variable among cricket players. Forty male students studying in various classes were randomly selected as subjects from the department of physical education and Sports Sciences, Annamalai University. The age of the subjects ranged from 18 to 25 years. The subjects were further classified at random into two equal groups of 20 subjects each namely, experimental group and control group. Experimental group underwent resistance training for three days per week for twelve weeks whereas control group followed their regular activities. The selected criterion variables namely, speed; shoulder strength, muscular endurance, cardio-respiratory endurance and explosive strength were assessed before and after the training period. The collected data statistically analyzed by using analysis of covariance. From the result of the data , it was found that there was a significant improvement on speed, shoulder strength, muscular endurance, and explosive strength and no change in cardio-respiratory endurance among the experimental group when compared with the control group.

Selvey Omery conducted a test with a view to find out the effect of isotonic, isometric and sports program on physical fitness. For this purpose 127, college men selected. The age of the subjects ranged from 18 to 25 years. The AAHPER Youth fitness test was administered before and after the 8 weeks program. The result of the study concluded that there is a significant improvement in physical fitness due to isotonic, isometric and sports program.

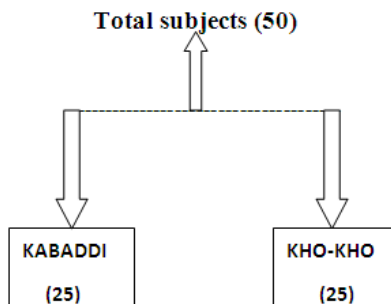
METHODOLOGY AND SCOPE OF THE STUDY: -

Methodology is the description of procedure or technique adopted in the research study. The machinery of methodology occupies a very important place in any kind of research. The vehicle of research cannot perform its functions without it since it is methodology which lays out the way of the research variables and procedure.

As every research demands a systematic method and procedure likewise this chapter adopts the following procedures including information regarding research design, sources of data, sampling method, selection of subjects, the collection of data, criterion Measures etc. A research becomes successful accompanied and supported by some reliable and authentic data. The statistical analysis of the gathered data provides a well-knit picture of a complete and successful hypothesis as pre-selected by the researcher. The chapter has been divided into the following headings:

SOURCES OF DATA

The data pertaining to the study was collected from the Kabaddi and Kho-Kho players of Government College of physical education, Ganderbal. There were 50 subjects (25 Kabaddi players and 25 Kho-Kho players) taken from Government college of physical education, Ganderbal in Jammu And Kashmir State.



CRITERION MEASURES

- i) Cardiovascular endurance
- ii) Speed
- iii) Strength
- iv) Co-ordination ability
- v) Muscular strength
- vi) Power.

American Alliance for health, physical education and recreation youth physical fitness test (AAHPER,1976) will be used to measure and compare the fitness level of Kabaddi and Kho-Kho players. The test item chosen for the test are:

- a) 600-yard run or walk
- b) 50-yard dash
- c) Shuttle run
- d) Standing broad jump
- e) Bent knee steps
- f) Pull-ups(flexed arm hang for girls).

SAMPLING PROCEDURE:

After due consideration of all the points, simple random sample technique was employed and the sample size was targeted to 25 Kabaddi players and 25 Kho-Kho players of Government college of physical education Ganderbal.

TOOLS TO BE USED:

AAHPER youth fitness test was used to measure the level of fitness of Kabaddi players and Kho-Kho players of Government College of physical education Ganderbal.

COLLECTION OF DATA:

The data for the study was collected from the Kabaddi and Kho-Kho players of Government College of physical education Ganderbal. The data collected though was analyzed statistically using T-test.

ADMINISTRATION OF THE TESTS

Physical fitness test

Cardiovascular endurance

600 yard run or walk

Purpose: To measure the cardiovascular endurance of subjects.

Equipment: track or marked area and stopwatch.

Procedure: The subjects will be asked to take a standing start at the starting line. At the signal "Ready", "GO", the subject starts running the 600 yards distance. The test is usually performed on 6-8 subjects together by pairing off before the start of the event. Walking is permitted but the performance is to cover the distance in the shortest period of time.

Scoring: The time taken to cover 600 yards recorded in minutes and seconds is the score of this test item.

SPEED

50 Yard Dash

Purpose: this test item is used to measure the speed of subjects.

Equipment: Stopwatch, with split-second time.

Procedure: Two lines are marked on the floor 50 yards (45 meters). one line act as starting line and other as the finish line. On the signal "GO", the subject starts running at their best to reach the finish line at their earliest. The signal GO is accompanied with the downward sweep of the starter's arm to give the visual signal to the timer who stand at the finish line.

Score: The interval between the starting signal and the instant subject crosses the finish line is the score of the test. The time is recorded correctly up to the tenth of a second.

Coordinative ability

Shuttle run

Purpose: This test item is used to measure the speed and coordinative ability.

Equipment: Two blocks of wood (2"x2"x4") stopwatch and marking powder.

Procedure: Two parallel lines will be marked on the floor 10 yards. The subject will be asked to start from behind one line. On the signal "GO" the stopwatch will be started. The subject will be asked to run towards the blocks and asked to pick up one of the blocks and come back to the starting line and places the block behind the starting line, runs back and pick up the second block to be carried back across the starting line. As soon as the subjects cross the starting line the timer will stop the stopwatch and record the time.

Scoring: Two trials will be given to each subject. The time of the better of two trials is recorded to the nearest tenth of a second.

Strength

Pull-ups

Purpose: This test is used to measure the muscular strength of shoulders.

Equipment: A wooden or metal bar approximately 1.5 inches in diameter.

Procedure: The height of the bar should be such that when the subject hangs from it with fully extended arms, his feet do not touch the ground. The subject will be asked to use an overhand grasp with the palms facing away from the body. From the vertical hanging position, the subject raises the body by the arms until the point that the chin can be set over the bar and after that lower, the body to a full expansion hang and refreshes the draw ups whatever number circumstances as could be allowed.

Scoring: The maximum number of completed pull-ups will be the score of the subject.

Muscular strength**Bent knee steps**

Purpose: This test is used to measure the muscular strength.

Equipment: mat and stopwatch.

Procedure: The subject is asked to lie on the back with the knee bent feet on the floor and heels not more than 12" from the buttocks. The angle at the knee should be less than 90 degrees. The subject has to put the hands on the back of the neck with fingers clasped and has to place the elbows squarely on the mat. The subject's feet are to be held by a partner to keep them in touch with the surface. The subject is asked to tighten the abdominal muscles and bring the head and elbows forwards as he or she sits up finally to touch the elbows to the knees. The entire above process constitutes one sit-up. the subject is asked to return to the starting position and to sit-up again.

Scoring: The maximum number of completed sit-ups in 60 seconds will be the score of the subject.

Power**Standing broad jump**

Purpose: This test measures the power of legs.

Equipment: floor, mat or long jump pit, measuring tape.

Procedure:-The subject will stand behind the starting line with feet parallel to each other. The subject will be asked to jump as farthest as possible by bending knees and swinging arms to take off for the broad jump in the forward direction. Three will be given to each subject.

Scoring:-The distance between the starting line and nearest point of landing. The best trial will be used as final scores.

'T' TEST ON THE BASIS OF KABADDI AND KHO-KHO VARIABLES

| | Group | N | Mean | Std. Deviation | Std. Error Mean |
|-------------------------------|---------|----|---------|----------------|-----------------|
| Pullups | Kho-kho | 25 | 8.7200 | 2.57423 | .51485 |
| | Kabaddi | 25 | 7.2000 | 2.82843 | .56569 |
| Bend Knee steps | Kho-kho | 25 | 26.1200 | 4.88467 | .97693 |
| | Kabaddi | 25 | 23.5600 | 5.51574 | 1.10315 |
| Shuttle Run | Kho-kho | 25 | 10.2720 | .63518 | .12704 |
| | Kabaddi | 25 | 9.8984 | 2.16622 | .43324 |
| Standing broad jump | Kho-kho | 25 | 7.0696 | .91281 | .18256 |
| | Kabaddi | 25 | 7.1168 | .73861 | .14772 |
| Fifty yard dash | Kho-kho | 25 | 6.5280 | 1.45760 | .29152 |
| | Kabaddi | 25 | 6.7920 | .53524 | .10705 |
| Six hundred yard run and walk | Kho-kho | 25 | 1.6888 | .47791 | .09558 |
| | Kabaddi | 25 | 1.7876 | .60890 | .12178 |

Independent samples test

| Variables | T | DF | Sig. (2-tailed) | Mean Difference | Standard error Difference |
|-------------------|-------|----|-----------------|-----------------|---------------------------|
| Pull ups | 1.987 | 48 | .053 | 1.52000 | .76490 |
| Bent knee sit ups | 1.737 | 48 | .089 | 2.56000 | 1.47354 |
| Shuttle run | .827 | 48 | .412 | .37360 | .45148 |

| | | | | | |
|-----------------------|-------|----|------|---------|--------|
| Standing broad jump | -.201 | 48 | .842 | -.04720 | .23484 |
| Fifty yard dash | -.850 | 48 | .399 | -.26400 | .31055 |
| 600 yard run and walk | -.638 | 48 | .526 | -.09880 | .15481 |

Table No. 1
Comparison of Kho-Kho and Kabaddi players on the variable strength

| S.NO. | Game | No. of students | Mean | Standard deviation | 'T' value |
|-------|---------|-----------------|--------|--------------------|-----------|
| 01 | Kho-Kho | 25 | 8.7200 | 2.57423 | 1.987 |
| 02 | Kabaddi | 25 | 7.2000 | 2.82843 | |

*significant at 0.05 level (df=48), table value is 2.04

From the above table, it was observed that the obtained 't' value of pull-ups or variable strength is 1.987 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each other i.e. the Kho-Kho and Kabaddi players have approximately the same strength. The two means were given graphically in the figure below:

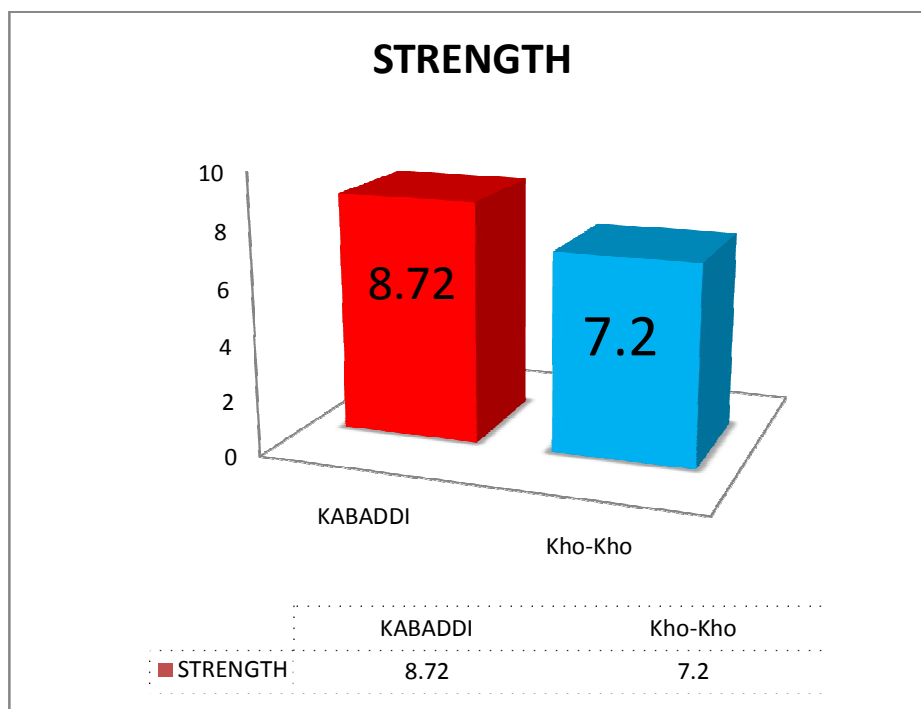


Fig. 1 comparison of strength between Kabaddi and Kho-Kho players.

Table No. 2
Comparison of Kho-Kho and Kabaddi players on the variable muscular strength

| S.No. | Game | No. of students | Mean | Standard deviation | 'T' value |
|-------|---------|-----------------|---------|--------------------|--------------|
| 01 | Kho-Kho | 25 | 26.1200 | 4.88467 | 1.737 |
| 02 | Kabaddi | 25 | 23.5600 | 5.51574 | |

***significant at 0.05 level (df=48), table value is 2.04**

From the above table, it was observed that the obtained 'T' value of Bent knee sit ups or variable muscular strength is 1.737 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each other i.e. the Kho-Kho and Kabaddi players have approximately the same muscular strength. The two means were given graphically in the figure below:

Fig.2 Comparison of muscular strength between Kabaddi and Kho-Kho players.

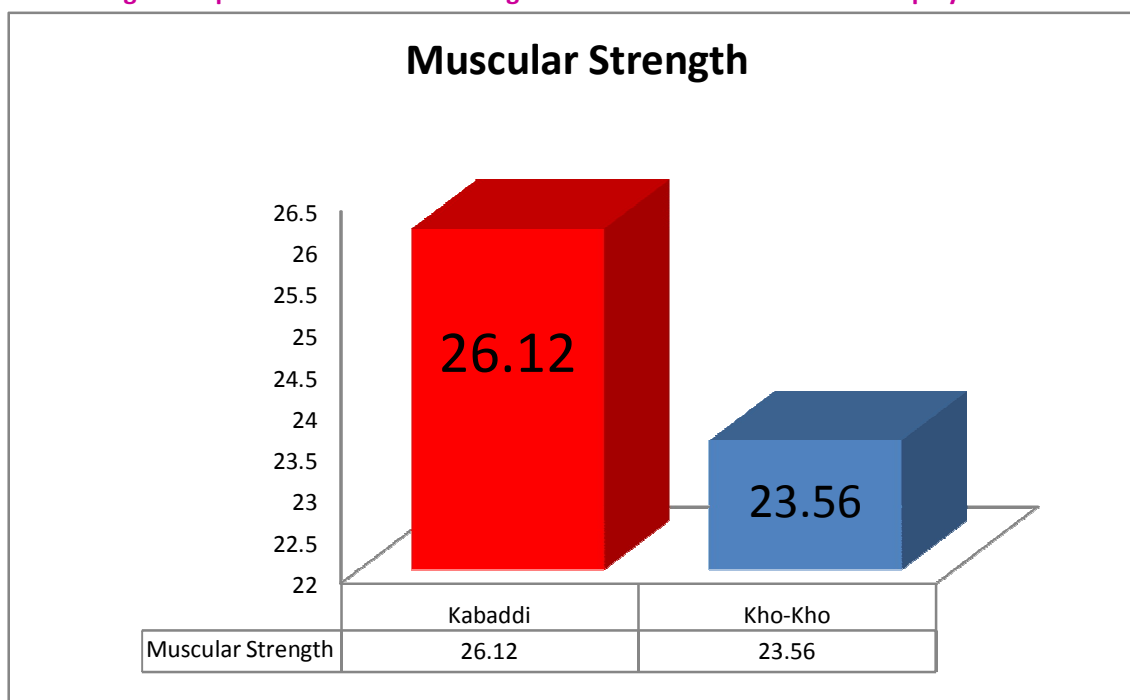


Table No. 3
Comparison of Kho-Kho and Kabaddi players on the variable Coordination Ability.

| S.No. | Game | No. of students | Mean | Standard deviation | 't' value |
|-------|---------|-----------------|---------|--------------------|--------------|
| 01 | Kho-Kho | 25 | 10.2720 | .63518 | 0.827 |
| 02 | Kabaddi | 25 | 9.8984 | 2.16622 | |

***significant at 0.05 level (df=48), table value is 2.04**

From the above table, it was observed that the obtained, 't' value of shuttle run or variable coordination ability is .827 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each

other i.e. the Kho-Kho and Kabaddi players have approximately the same coordination ability. The two means were given graphically in the figure below:

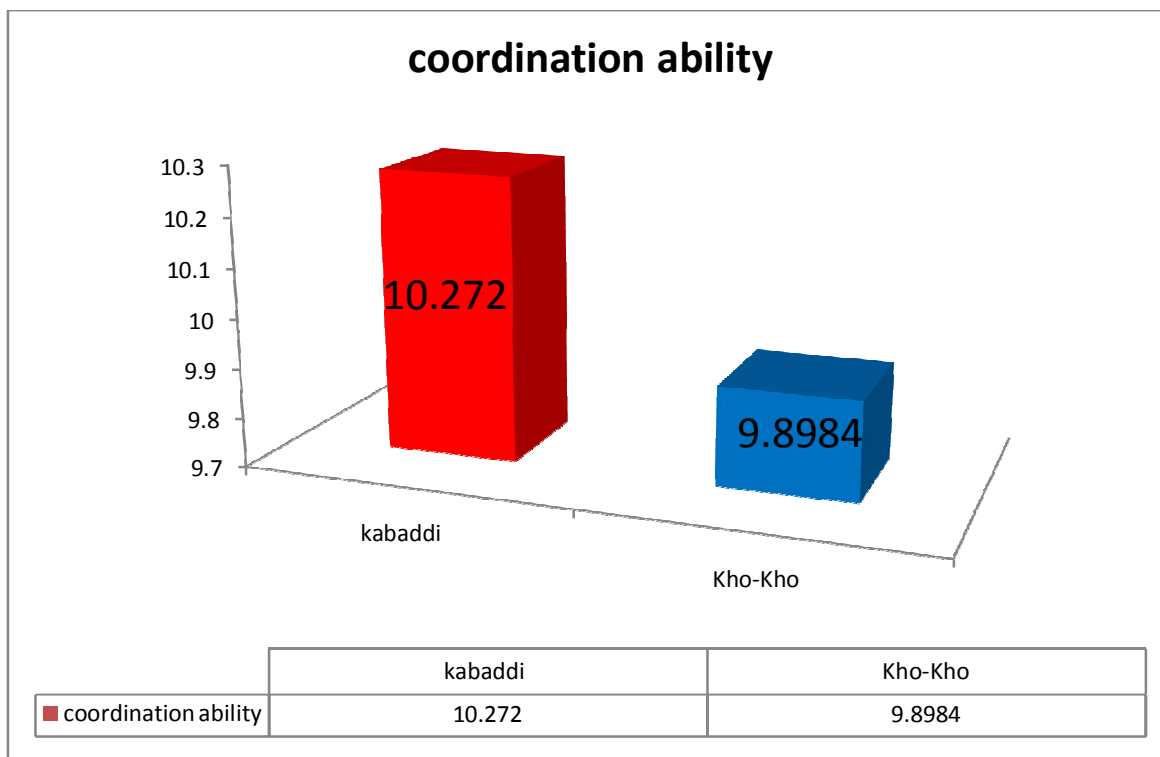


Fig.No.3, Comparison of Coordination ability between Kabaddi and Kho-Kho players.

Table No. 4
Comparison of Kho-Kho and Kabaddi players on the variable Power.

| S.No. | Game | No. of students | Mean | Standard deviation | 't' value |
|-------|---------|-----------------|--------|--------------------|---------------|
| 01 | Kho-Kho | 25 | 7.0696 | .91281 | -0.201 |
| 02 | Kabaddi | 25 | 7.1168 | .73861 | |

***significant at 0.05 level (df=48), table value is 2.04**

From the above table, it was observed that the obtained, 't' value of Standing broad jump or variable Power is -0.201 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each other i.e. the Kho-Kho and Kabaddi players have approximately the same Power. The two means were given graphically in the figure below:

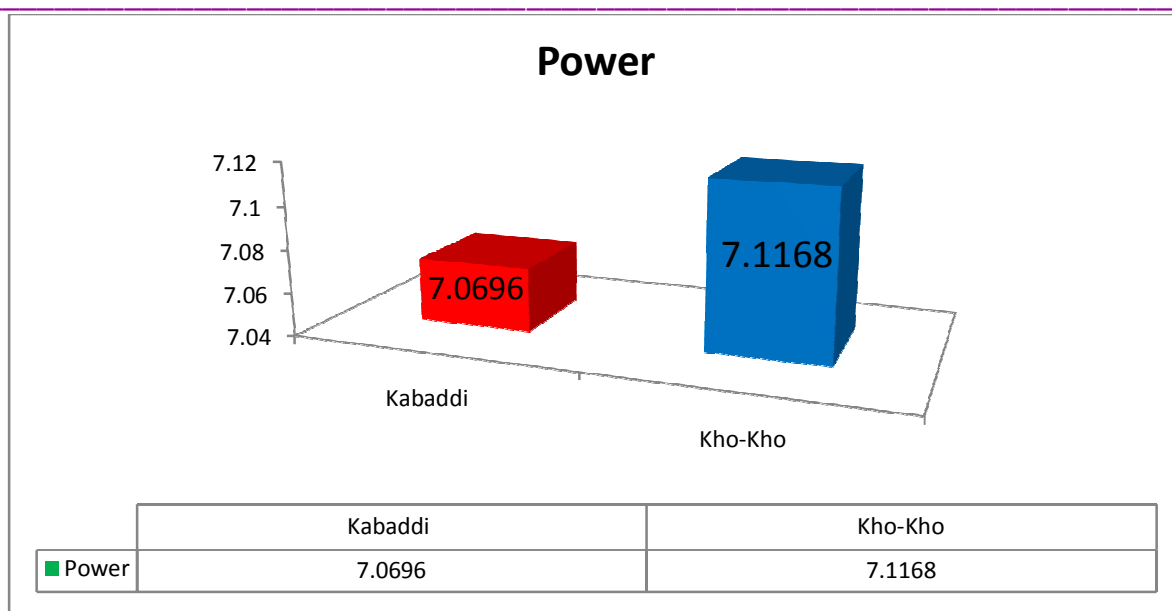


Fig No. 4, Comparison of Power between Kabaddi and Kho-Kho players.

Table No. 5
Comparison of Kho-Kho and Kabaddi players on the variable Speed.

| S.No. | Game | No. of students | Mean | Standard deviation | 't' value |
|-------|---------|-----------------|--------|--------------------|---------------|
| 01 | Kho-Kho | 25 | 6.5280 | 1.45760 | -0.850 |
| 02 | Kabaddi | 25 | 6.7920 | .53524 | |

***significant at 0.05 level (df=48), table value is 2.04**

From the above table, it was observed that the obtained, 't' value of 50-yard dash or of variable speed is -0.850 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each other i.e. the Kho-Kho and Kabaddi players have approximately the same speed. The two means were given graphically in the figure below:

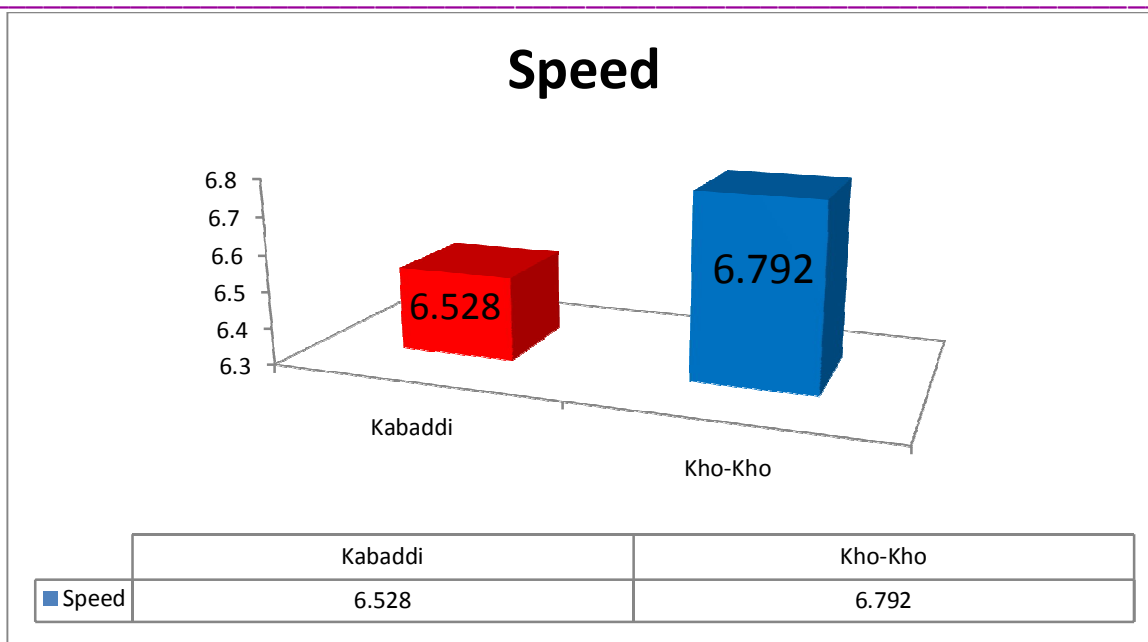


Fig No. 5, Comparison of Speed between Kabaddi and Kho-Kho players.

Table No. 6
Comparison of Kho-Kho and Kabaddi players on the variable Cardiovascular Endurance.

| S.No. | Game | No. of students | Mean | Standard deviation | 't' value |
|-------|---------|-----------------|--------|--------------------|---------------|
| 01 | Kho-Kho | 25 | 1.6888 | .47791 | -0.638 |
| 02 | Kabaddi | 25 | 1.7876 | .60890 | |

***significant at 0.05 level (df=48), table value is 2.04**

From the above table, it was observed that the obtained, 't' value of 6-0 yard run and walk or of variable cardiovascular endurance is -0.638 at 0.05 level of significance which is less than the tabulated value 't' 2.04. Hence it was concluded that the two means of Kabaddi and Kho-Kho players do not significantly differ from each other i.e. the Kho-Kho and Kabaddi players have approximately the same cardiovascular endurance. The two means were given graphically in the figure below:

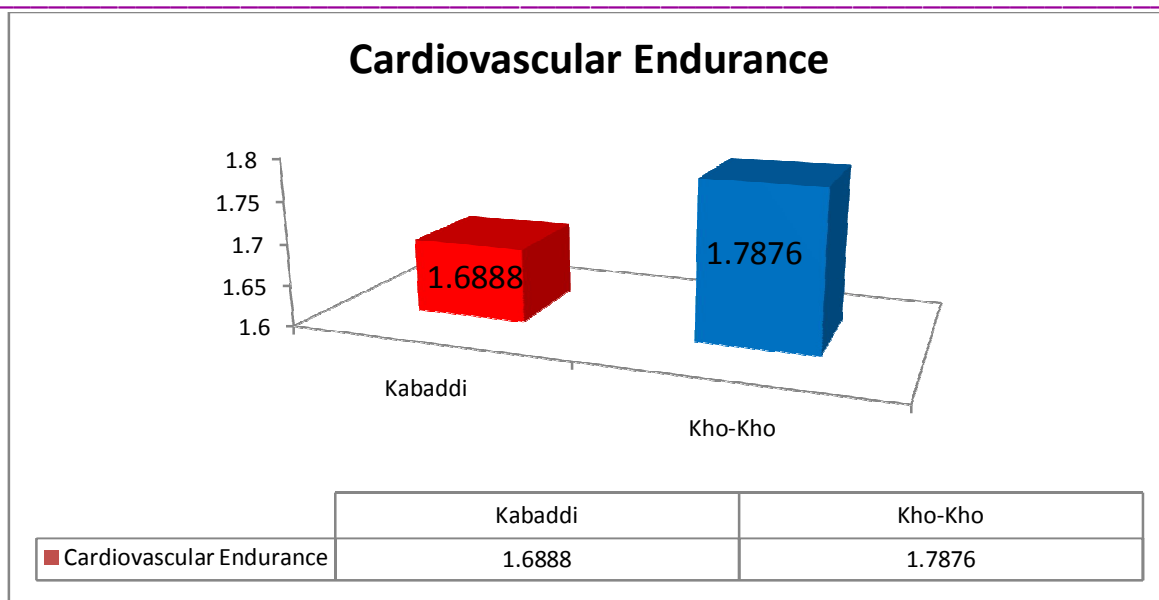


Fig No. 6, Comparison of Cardiovascular Endurance between Kabaddi and Kho-Kho players.

FINDINGS AND CONCLUSIONS: -

Within the limitations of the present study, the following were drawn:

1. There was no significant difference between the strength of Kabaddi and Kho-Kho players in pull-ups.
2. There was no significant difference between the muscular strength of Kabaddi and Kho-Kho players in bent-knee sit-ups.
3. There was no significant difference between the coordination ability of Kabaddi and Kho-Kho players in the shuttle run.
4. There was no significant difference between the power of Kabaddi and Kho-Kho players in standing broad jump.
5. There was no significant difference between the speed of Kabaddi and Kho-Kho players in the 50-yard dash.
6. There was no significant difference between the cardiovascular endurance of Kabaddi and Kho-Kho players in 600-yard run and walk.

SUGGESTIONS FOR FURTHER STUDIES: - On the basis of findings and conclusions, the following recommendations were made:

1. The present study may be repeated with respect to psychological variables on the same subjects.
2. The present study may be taken on female subjects.
3. The present study may be conducted on the large sample in order to make the study more valid and detailed.
4. The similar study may be undertaken with other fitness battery tests with different age groups.

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