

A Pilot Study Examining the Physical Fitness of Kabaddi and Kho-Kho Players

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Abstract: The purpose of this study is to determine the physical fitness of Kabaddi and Kho-Kho players. Total 30 Kabaddi and 30 Kho-Kho players who are participating inter collegiate selected for the present study the result of the study shows that there was significant difference were found in physical fitness with respect to Flexibility, Muscular strength, and Body Composition between Kabaddi and Kho-Kho players. However, no significant difference was found in muscular endurance and cardiovascular fitness between Kabaddi and Kho-Kho players.

Keywords: Fitness, Flexibility BMI, Cardiovascular Fitness, Muscular Strength, Muscular Endurance.

I. INTRODUCTION

The expert committee of the world health organization (1981) described the physical fitness as “the ability to undertake muscular work satisfactorily”. Physical fitness is the capacity to early out, reasonably well, various forms of physical activities, without being unduly tired and includes qualities important to the individuals health and wellbeing every person has a different level of physical fitness which may change with time, place of work, situation, and there is also an interaction between the daily activities, and the fitness of an individual, the point if where to put the level of optimum fitness. Kabaddi and Kho- Kho are the popular games in the india, both games required physical fitness for performance. Over the past four decades, there has been an increase in provenances of overweight and physical fitness deterioration in adult across all genders, ages and racial/ groups (ichinohe et. al. 2004). The negative effects of degraded physical fitness in both the individuals and society are serous and multidimensional. It can cause many risk factors to health including coronary heart diseases, certain forms of cancer, diabetes, hypertension stroke, gallbladder diseases, respiratory problems, and gout and is associated with increased in all case morality (catalado 1999). In adults, relationship among physical activity, health related fitness, and health are fairly well established (botched, shepherd 1994). Low level of physical activity and cardio respiratory fitness are both associated with higher risk of all cause and diseases specific mortality (Thune et. al. 1998). Physical fitness is the ability to perform daily activities willingly and actively. Physical fitness includes not only components of sports but those of health as well regular physical activity prevents or limits weight gain, and weight in BMI, (Kyle et. al. 2001).

II. METHODS

Total 30 Kabaddi and 30 Kho-Kho players selected for the present study and compare with physical , fitness who were participating in intercollegiate tournament in Gadchiroli (Maharashtra). This study will involve a descriptive study of physical characteristics non-experimental, descriptive survey design.

Assessment of Physical Fitness Tests

Flexibility

Administration of tests: The following tests were taken for measuring health related physical fitness of selected collegiate students from experimental group.

Cardio – Vascular Endurance: Cardio – Vascular Endurance or Cardio – Respiratory Endurance was measure by using 12 minute Run & Walk Test. The 12-minute run test requires the person being tested to run or walk as far as possible in a 12 minute period. The objective of the test is to measure the maximum distance covered by the individual during the 12 minute period and is usually carried out on a running track by placing cones at various distances to enable measuring of the distance. A stopwatch is required for ensuring that the individual runs for the correct amount of time. When time is over, at that time investigator gives signal to stop. Subject will stand right there where he stops. Then investigator measures the crossed distance by the subject.

Muscular Endurance: Muscular Endurance was evaluated by using 1-minute Bent Knee Sit Up test. Abdominal muscular endurance was measured by performing the 1-minute bent knee sit-up test. Subject Lied on his back with knees bent at a 90-degree angle. His feet were flat on the floor. Subject interlocked his fingers behind his head, and then slowly rises to sitting position and touched his elbows to knees. Now subject let down his body back to the starting position, and repeated the process as many times as possible for the subject within one minute.

Muscular strength: Muscular strength was measured by Kraus Webber Strength Test.

Kraus Webber Strength Test: This test is made up by combining six physical activities or tests. These are as follows:

Test No. 1: The subject lied flat on back with his hands behind the neck, assistance held his feet on the ground, and performed one sit-up.

Test No. 2: The subject lied down with his knees were bent, with his ankles close to the buttocks and performed one sit-up.

Test No. 3: The subject lied flat on back with hands behind neck. Legs straightly lifted 10 inches off the floor. Subject holds his position for 10 seconds.

Test No. 4: The subject lied on stomach with a pillow under his lower abdomen and groin. Assistant holds his feet down. Subject lifted head, shoulders, and chest off the floor and holds for 10 seconds.

Test No. 5: The subject's position was the same, but the assistant holds the chest down. With straight knees, lift legs off floor and hold for 10 seconds.

Test No. 6: The subject stands erect. Subject keeps knees straight. Bend over slowly and touch the floor with the fingertips. Hold this position for 3 seconds.

Flexibility

Flexibility was measured by using Sit & Reach Test.

Sit & reach Test: For conducting the test a stable wooden box 40 Cm's. high on one side is requires. Procedure: Subject sits bare foot with the box with both feet together with toes in line with the edge of the box. From this position he bends forward and while keeping his knees straight. He extends his hands along the scale as forward as possible. Both the hands should be parallel. At a maximum reach he holds the position for about 2 seconds. Scoring: The result is read from the scale. Two attempts are given at recovery rest of 30 seconds. In case a subject is not able to extend his hands even to the level of the box then the distance from the 0 Cm's. Mark to the tip of middle finger should be measured with a scale and recorded as negative score.

Mass Index (BMI): Body Mass Index is calculated from body mass (M) and height (H). $BMI = M / (H \times H)$, where M = body mass in kilograms and H = height in meters. The higher score of the Body Mass Index usually indicates higher levels of body fat. **Scoring:** Use the BMI table to determine BMI rating. The rating scale is the same for males and females. You can also use the reverse lookup BMI table for determining your ideal weight based on height.

Data processing: The data was checked for accuracy and completeness and was coded and entered into the Statistical Package for Social Sciences (SPSS). T-ratio and a p-value of <0.05 consider statistically significant throughout the study.

INTERPRETATION OF DATA AND RESULTS OF THE STUDY

The results have been presented in concise and comprehensive manner that is easy to comprehend starting with parameter.

Table – 1: TRAINING RELATED INFORMATION OF KABADDI AND KHO-KHO PLAYERS

Sr.No.	Components	Kabaddi		Kho-Kho	
		Mean	SDS	Mean	SDS
1)	Training days (Week)	1.06	0.89	3.56	0.98
2)	Training duration (Hours)	2.17	0.62	2.67	0.81
3)	Competition in one year	8.00	1.14	6.00	1.06

Table -1 illustrates the morphological characteristics of Kabaddi , Kho-Kho players. The mean score (S.Ds.) Training days (Week) of Kabaddi players were 1.06 (0.89) cm., mean score (S.Ds.) Training duration (Hours) of Kabaddi players were 2.17 (0.62) cm., mean score (S.Ds.) Training duration (Hours) of Kabaddi players were 2.17 (0.62) cm., mean score (S.Ds.) Competition in one year of Kabaddi players were 8.00 (1.14) cm., In addition, the mean values (S.Ds.) Training days (Week) of Kho-Kho players were 3.56 (0.98) cm.,mean values (S.Ds.) Training duration (Hours) of Kho-

Kho players were 2.17 (0.62) cm., mean values (S.Ds.) Training duration (Hours) of Kho-Kho players were 2.67 (0.81) cm.,mean values (S.Ds.) Competition in one year of Kho-Kho players were 6.00 (1.06) cm.,

TABLE -2: MEAN SCORES AND STANDARD DEVIATION OF PHYSICAL FITNESS BETWEEN KABADDI AND KHO-KHO PLAYERS

COMPONENTS	PLAYERS	Sample Size	Mean scores	S.DS	T-Ratios
Flexibility	Kabaddi players	30	16.67	2.31	5.67*
	Kho-Kho players	30	19.78	2.16	
Sit and Reach Flexibility	Kabaddi players	30	15.44	2.31	3.87*
	Kho-Kho players	30	17.90	2.23	
Muscular Endurance	Kabaddi players	30	55.76	5.67	1.23NS
	Kho-Kho players	30	53.21	5.34	
Cardio-Vascular Endurance	Kabaddi players	30	2098.57	212.98	1.90NS
	Kho-Kho players	30	2132.67	225.90	
Body Composition	Kabaddi players	30	21.25	4.11	4.87*
	Kho-Kho players	30	18.90	1.06	
Muscular Strength	Kabaddi players	30	20.80	2.40	3.97*
	Kho-Kho players	30	18.30	2.13	

Table-2 illustrates the Mean scores and standard deviation of Physical fitness among Kabaddi players Kho-Kho players.

III. DISCUSSION

The purpose of this study is to determine the physical fitness of Kabaddi and Kho-Kho players. With regards to mean score Bend & reach Flexibility Kabaddi players was obtained 16.67, mean score of Bend & reach Flexibility of Kho-Kho players was 19.78 respectively. However, the standard deviation of Bend & reach Flexibility of Kabaddi players was obtained 2.31, standard deviation of Bend & reach Flexibility of Kho-Kho Players was obtained 2.16 respectively. The findings of the study show that there was significant difference of flexibility found between Kabaddi and Kho-Kho players. Kho-Kho players was better flexibility as compare to Kabaddi players with regards to mean score of Flexibility (Sit and Reach) of Kabaddi players was obtained 15.44, mean score of Bend & reach Flexibility of Kho-Kho players was 17.90 respectively. However, the standard deviation of Flexibility (Sit and Reach) of Kabaddi players was obtained 2.31, Flexibility (Sit and Reach) of Kho-Kho Players was obtained 2.23 respectively. The findings of the study show that there was significant difference of flexibility found between Kabaddi and Kho-Kho players. Kho-Kho players was better flexibility (Sit and Reach) as compare to Kabaddi players. With regards to mean score of Muscular Endurance of Kabaddi players was obtained 55.76, The mean score of Muscular Endurance of Kho-Kho players was 53.21 respectively.

However, the standard deviation of Muscular Endurance of Kabaddi players was obtained 5.67, Muscular Endurance of Kho-Kho Players was obtained respectively. The findings of the study shows that there was no significant difference of Muscular Endurance found between Kabaddi and Kho-Kho players. With regards to mean score of Cardio-Vascular Endurance of Kabaddi players was obtained 2098.57, The mean score of Cardio-Vascular Endurance of Kho-Kho players was 2132.67 respectively. However, the standard deviation of Cardio-Vascular Endurance of Kabaddi players was obtained 212.98, Cardio-Vascular Endurance of Kho-Kho Players was obtained 225.90 respectively. The findings of the study show that there was no significant difference of Cardio-Vascular Endurance found between Kabaddi and Kho-Kho players. With regards to mean score of Body Composition of Kabaddi players was obtained 21.25, The mean score of Body Composition of Kho-Kho players was 18.90 respectively. However, the standard deviation of Body Composition of Kabaddi players was 4.11, Body Composition of Kho-Kho Players was obtained 1.06 respectively, the findings of the study shows that there was no significant difference of BMI found between Kabaddi and Kho-Kho players. With regards to mean score of Kraus Weber Muscular Strength of Kabaddi players was obtained 20.80, The mean score of Kraus Weber Muscular Strength of Kho-Kho players was 19. respectively.

However, the standard deviation of Kraus Weber Muscular Strength of Kabaddi players was 2.40, Kraus Weber Muscular Strength of Kho-Kho Players was obtained 2.13 and respectively, the findings of the study shows that there was significant difference of Muscular Strength found between Kabaddi and Kho-Kho players. Kabaddi players was better Muscular Strength

REFERENCES

- [1]. Angilley H., Haggas S. (2009) "Physical fitness in children with movement difficulties." *Physiotherapy*, 95: 144.
- [2]. Armstrong J J (1991) "A brief overview of diabetes mellitus and exercise". *Diabetes*
- [3]. Clausen J, Trap Jensen J & Lassen N(1970.) "The effect of training on the heart rate during arm & leg exercise." *Scand J Clin Invest.* 26:295-301
- [4]. Clausen J P (1977) "Effects of physical training on cardio vascular adjustments to exercise in man." *Physiol Rev.* 57(4):779-815
- [5]. Dubbert PM (2002) "Physical activity and exercise: recent advances and current challenges. *Journal of Consulting and clinical psychology.*" 70:526-536. Dio: 10.1037/0022-0066X.70.3.526.
- [6]. Fox, E., Bowers R & Foss M. (1988) "The Physiological Basis for Exercise & Sport, WBC Brown and Benchmark Publish Dubuque", 324-326
- [7]. Fringer M N and Stull G A (1974) "Changes in cardio respiratory parameter during periods of training and detraining in young adult females". *Med. Sci. Sports.* 6(1): 20-25.
- [8]. Huang YC, Malina RM (2007) "BMI and health- related physical fitness in Taiwanese youth 9-18 years." *Med Sci sports Exerc*, 39(4):701-708.
- [9]. Hayshi F, et. Al. (2006): "Perceived body size and desire for thinness of young Japanese women: a population – based survey." *Br Nutr*, 96(6):1154-1162.
- [10]. Horton ES (1988) "Exercise and diabetes mellitus." *Med Clin North Am.*; 72: 1301-1321.
- [11]. Inokuchi M, et. al. (2007): "Prevalence and trends of underweight and BMI distribution changes in Japanese teenagers based on 2001 national survey data". *Ann Hum Biol*, 34(3): 354-361.
- [12]. J Bharti (2010) "Effects of endurance training on school boys." Unpublished M.P.Ed. Dissertation, Swami Ramanand Teerth Marathwada University Nanded.
- [13]. Jackson J, Sharkey B, and Johnston L (1979) "Cardio respiratory adaptations to training at specified frequencies." *Res. Q.* 39:295-300.
- [14]. Kwok Kei Mak et. al., (2010) "Health related physical fitness & Weight status in Hong Kong adolescents BMC public health", 10:88.
- [15]. Lamb KL, Brodie DA, Roberts K (1988) "Physical fitness and health-related fitness as indicators of a positive health state." *Health Promot Int* 3:171–182.
- [16]. Malina RM (2007): "Physical Fitness of children and adolescents in the United States: Status and secular change". *Med sports sci.*, 50:67-90.
- [17]. Maynard T (1991) Exercise "Part I Physiological response to exercise in diabetes mellitus *Diabetes*" *Educ.*:17:196-206.
- [18]. Milesis C, Pollock M L, Bah M.D. Ayres J J, Ward A and Linnerud AC (1976) : "Effects of Different durations of physical training on cardio respiratory function body composition and serum lipids" *Res. Q.* 47(4) : 716-725,.
- [19]. Noreau L, Shephard RJ (1995) "Spinal cord injury, exercise and quality of life." *Sports Med* 20:226–250
- [20]. Ogden CL, et. al. (2000): "Prevalence and trends in overweight among children and adolescents." *JAMA* 2002, 288(14):1728-1732.
- [21]. Orjan E, Kristjan O, Bjorn E (2005): "Physical performance & body mass index in Swedish children & adolescents" *Scand J Nutr*,49(4):172-179.
- [22]. Ortega FB, Artero EG, Ruiz JR, et. al. (2008): "Reliability of health- related physical fitness tests in European adolescents. The HELENA study." *Int J Obes*, 32(Suppl. 5): S49-57.
- [23]. Stewart AL, et. al. (1994) "Long-term functioning and well-being outcomes associated with physical activity and exercise in patients with chronic conditions in the Medical Outcomes Study". *J Clin Epidemiol* 47:719–730.
- [24]. Salmon J, Owen N, Crawford D, Bauman A, Sallis JF. 2003 "Physical activity and sedentary behaviour: a population-based study of barriers, enjoyment and performance." *Health Psychology.* :22: 178-188. dio. 10.1037/0278-6133.22.2.178.