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Mrityunjay Biswas

Assistant Professor of Physical Education, J.R.SET College of education (D.el.ed), Uttar Panchpota, Chakdaha, Nadia, W.B. India.

Sangita Halder

M.P.ED Student, State Institute of Physical Education for Women Hasting House, Alipore, Kolkata, India.

A Comparative Study on Selected Anthropometric Variables and Motor Abilities between Women Kho-Kho and Kabaddi Players

Mrityunjay Biswas, Sangita Halder

Abstract

The purpose of this study was to compare the anthropometric characteristics and selected fitness variables between women Kho-Kho and Kabaddi players. A total of fifty (N=50) subjects were randomly chosen for this study. Out of 50 players, 25 players were from Kho-Kho and 25 from Kabaddi. The age of the players ranged from 18 to 28 years. The variable undertake for the study are : selected anthropometric variables namely height, weight, arm length, leg length and motor ability test namely abdominal muscle strength endurance (AMSE), leg explosive strength (LES), speed and agility were considered as criterion for the study. All the fitness variables were measured by AAHPER Youth Fitness Test. Mean and standard deviation of each variable were calculated and t-test was computed to analyze the significance of difference between the means. All statistical calculations were done by standard statistical procedure. To determine the differences, if any, between the two groups of players, the independent t-test was calculated. Statistical significance was tested at 0.05 level of confidence. It is concluded from the result that no significant difference was observed between the women Kho-Kho and Kabaddi players.

Keywords: Anthropometric, Motor abilities, Fitness Variables, Women, Kho-Kho, Kabaddi

1. Introduction

Anthropometry refers to the measurement of the human individual. An early tool of physical anthropology, it has been used for identification, for the purposes of understanding human physical variation, in pale anthropology and in various attempts to correlate physical with racial and psychological traits. Anthropometry involves the systematic measurement of the physical properties of the human body, primarily dimensional descriptors of body size and shape. Anthropometry refers to the measurement of the size and proportion of human body and its different parts. It is the comparative study of the dimensions of the human body. It involves making precise, highly standardized measurements so that size and shape can be described objectively. Anthropometry precisely is the systematic quantitative representation of the human body. Anthropometric techniques are used to measure the absolute and relative variability in size and shape of the human body.

Physical fitness is one of the most important aspects in the field of physical education. But physical fitness is not synonymous with health, it plays an essential role in all aspects of health because they are very much related. Good health provides a solid foundation on which fitness rests and at the same time fitness provides one of the important keys to health and living one's life to the fullest. Fitness is not a state for the young; it is reality for all ages. Fitness is a product of exercise and training has been shown through research to possess important implication in the general health of people. Proper nutrition, adequate rest relaxation, health appraisal and good habits are all factors of implementation. The physical fitness is a concept which has both an absolute and a relative meaning. In absolute term the man can run faster, jump high, lift and handle the heaviest burdens and attain the highest output during a working day, must be most fit the person for the particular activity. On the other hand when considered fitness in a relative term, a person of small size may not be able to complete in weight lifting with a bigger man and his maximum work out put may be much less. But still he may be physiologically most fit. Various researchers suggested that different body size, shape and proportions are beneficial in different physical activities ((Malhotra et al., 1972; Kansal et al., 1986; Sidhu et al., 1996) [6, 5, 8]. Several studies on the anthropometric characteristics of

Correspondence:

Mrityunjay Biswas

Assistant Professor of Physical Education, J.R.SET College of education (D.el.ed), Uttar Panchpota, Chakdaha, Nadia, W.B. India.

basketball players have been reported in literature (Fleck *et al.*, 1985; Hakkinen, 1993; Hosler *et al.*, 1978; Spence *et al.*, 1980)^[1, 3, 4, 9]. Physical fitness is the capability of the heart, blood vessels, lung and muscles to function an optimal efficiency. (Getchell 1979)^[2], supported this view that the successful participation in any game is directly related to physical fitness.

2. Methods & Materials

2.1 Subject A total of fifty (N=50) subjects were randomly chosen for this project. Out of 50 players, 25 players were from Kho-Kho and 25 from kabaddi. The age of the players ranged from 18 to 28 years. All these subjects played the game of kho-kho and Kabaddi for a number of years and were trained by the qualified coaches. They will be all State & national level players from different district.

2.2 Criterion Measure

Criterion measure in the present study were height, weight, Arm length, length, cardio-respiratory endurance, abdominal muscle strength endurance, Agility, leg explosive strength, speed, All motor fitness components were measured by AAHPER Youth Physical Fitness Test.

2.3 Statistical Calculations

The basic statistical parameters were calculated for all the data: the mean, standard deviation. To determine the differences, if any, between two groups of players, the independent t-test was calculated. The data was processed by means of the MS Excel Data Analysis tool pack. Statistical significance was tested at 0.05 level of confidence.

3. Results and Discussion

Table 1: Representing Mean, SD, mean diff and t-value in height, weight, Arm length, length and sit ups, shuttle run, SBJ, speed between kho-kho players and kabaddi players

Motor variables	Kabaddi Players	Kho-Kho Players	Mean Difference	Std. Error	t-value
	Mean±SD	Mean±SD			
Height(cm.)	156.12±3.90	156.32±3.90	0.20	3.98	0.85
Weight (kg.)	51.64±5.87	51±4.10	0.64	5.99	0.65
Arm length	71.24±4.10	71.88±4.58	0.64	4.60	0.60
Leg length	90.92±6.56	91.72±6.71	0.80	6.14	0.67
Sit ups (no)	32.48±6.08	32.4±5.51	0.08	5.98	0.96
SBJ (m)	2.03±0.21	2.06±0.23	0.02	0.22	0.66
50 (yrd)	8.63±0.54	7.96±0.52	0.66	0.53	5.45
St. Run (sec)	9.67 ±0.45	9.35±0.60	0.31	0.44	0.04

From the above Table-1 show mean ± SD of height of kabaddi and kho-kho players were respectively 156.12±3.90 and 156.32±3.90 and the calculated t value 0.85. The mean ± SD of weight of kabaddi and kho-kho players were respectively 51.64±5.87 and 51±4.10 and the calculated t value 0.65. The mean ± SD of Arm length for kabaddi players were 71.24±4.10 and kho-kho players were 71.88±4.58, respective mean difference 0.64, standard error 4.60; leg length of the mean ± SD of kabaddi players were 90.92±6.56 and kho-kho players were 91.72±6.71, mean difference 0.80, standard error 6.14; The mean ± SD of AMSE(sit ups) for kabaddi players were 32.48±6.08 and kho-kho players were 32.40±5.51, respective mean difference 0.08, standard error 5.98 and the calculated t value 0.96; LES(SBJ) of the mean ± SD of kabaddi players were 2.03±0.21 and kho-kho players were 2.06±0.23, mean difference 0.02, standard error 0.22 and the calculated t value 0.66; Speed (50 yrd) of the mean ± SD of kabaddi players 8.63±0.54 and kho-kho were 7.96 ± 0.52, mean difference 0.66, standard error 0.53 and the calculated t value 0.545; The mean ± SD of Agility (St.Run) of kabaddi players and kho-kho players were respectively 9.67±0.45 and 9.35±0.60 and the calculated t value 0.04.

In the above table the t value shows that in anthropometric variables namely height, weight, arm length and leg length there is no significant difference between kho-kho and kabaddi players but average height, arm length and leg length shows that the kho-kho players are greater than the kabaddi players. The performances of different motor abilities of two groups have no significant difference was observed between the fitness variables of kabaddi and kho-kho players. When compared to the mean values of both the groups, finally it has been found that kho-kho players have considerably better than kabaddi players in speed, agility, on the other hand the kabaddi players are slight better than the kho-kho players in sit ups. Kumar (2014) conducted a study among kho-kho and kabaddi players and found that speed, agility and endurance the kho-

kho players was better but strength kabaddi players are better than kho-kho players.

Thus comparing the findings of the present study with the results of the other research it is somehow clear that the findings of the present study are in close proximity with the findings of the leading researchers.

4. Conclusion

Based on the results of the present study, we highlight anthropometric and fitness variables of kho-kho and kabaddi players. The following Recommendations are made on the basis of the results from the study which may be useful for the future research work. The study may be repeated to other physiological and Physical fitness variables on the same subjects. The same study may be repeated on the other class of the society for different age groups. In this study five variables was taken, but this can be done on more or less variables. The study can be carried on the basis of different regions. This study provided us with data from athletes who played in the West Bengal state level women KHO-KHO and Kabaddi team and allows to establishing reference values regarding physical characteristics of the selected athletes.

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