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A comparative analysis on physical and physiological parameters of inter-collegiate kabaddi and kho-kho players

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Abstract

A Kabaddi and Kho-Kho game requires the specific fitness with reference to vital capacity, strength, speed, flexibility and co-ordination. Fitness training equips the sports person to face the physical and physiological challenges that come his way in his competitive sports career. Specific physiological and physical fitness characteristics enable the player to perform the unusual movements required by the concerned sport. Physiological and physical fitness characteristics measurement plays an important role on the successful Kabaddi and Kho-Kho performances. These parameters further help to predict talents and finance on the potentially of best athletes for each sport.

The main purpose of this study is to compare selected physical and physiological variables of inter-collegiate Kabaddi and Kho-Kho players. The sample consisted of fifty male inter-collegiate Kabaddi and Kho-Kho players from Bangalore University by simple random sampling method. The selected physical fitness variables are agility, strength and flexibility and physiological variables are systolic and diastolic pressure, hemoglobin (Hb %) and resting pulse rate. The results of t-ratio of it showed significant difference in some physical fitness and physiological parameters of inter-collegiate Kabaddi and Kho-Kho players. In physiological parameters diastolic pressure showed significant difference between Kabaddi and Kho-Kho players. The diastolic pressure of inter-collegiate Kho-Kho players are more than Kabaddi inter-collegiate players, which may be due to nature of game and movement which demand more blood volume with greater diastolic pressure but systolic pressure, hemoglobin (Hb%) and resting pulse rate expressed insignificant difference between inter-collegiate Kabaddi and Kho-Kho players. The research finding of some physical fitness parameters indicated significant difference between inter-collegiate Kabaddi and Kho-Kho players. The agility and explosive strength expressed significant difference. The agility of inter-collegiate Kabaddi players more than Kho-Kho players, which due to quick and speedy movement in catching and raid. The explosive strength of inter-collegiate Kho-Kho players is higher than Kabaddi players but Flexibility showed insignificant difference between Kabaddi and Kho-Kho players.

Keywords: Physical, physiological parameters, inter-collegiate kabaddi, kho-kho players

Introduction

Sports has emerged as a discipline not merely to discuss performance, techniques or records but also to study it as a means by which greater societal forces may be analyzed and through which various problems may be remedied.

A Kabaddi and Kho-Kho game requires the specific fitness with reference to vital capacity, strength, speed, flexibility and co-ordination. Fitness training equips the sports person to face the physical and physiological challenges that come his way in his competitive sports career. Specific physiological and physical fitness characteristics enable the player to perform the unusual movements required by the concerned sport. Physiological and physical fitness characteristics measurement plays an important role on the successful Kabaddi and Kho-Kho performances. These parameters further help to predict talents and finance on the potentially of best athletes for each sport.

Application of science and technology has greatly influenced modern sports. Sports performances are reaching to newer heights and success in sports performance today is not only a chance. Based on the knowledge of modern sports sciences, scientific principles of training and coaching and application of sophisticated modern testing and measuring

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techniques, it has now become possible to predict performance of the athletes at different levels of competitions. Games and sports have been part of human life almost since the time immemorial. Be it a necessity for his survival i.e. hunting for food, shelter and safety from wild animal or other enemies, or as a pursuit of pleasure. The games and sports have been indispensable to mankind, and have become part of the culture. The games and sports are a great unifying force and have tremendous effect on the national and international integration. Through the origin of sports is lost in antiquity, it is quite certain that physical activity has been a part of the life of even primitive men. For him it might have been a basic necessity of life, more than fun and diversion, for his survival depended on it. Hunting, fishing, hurling missiles were activities on which his survival depended. Gradually along with the process of evolution, such activities became more of play and became part of the culture of the tribes. People use sports and games as a mode of transmitting the cultural heritage of their tribes. Games sports and physical activities persisted despite the rise and fall of ancient civilizations and became strongly embedded in the history of civilization as a culture heritage, which was passed on from one generation to another. Today, games and sports have emerged as universal cultural phenomena.

Sports and games propagate the feelings of nationalism and help in creating a new generation of individuals with the feelings that the difference based on caste, community and religion have no meaning and faith in love and peace, in purity, in the feeling of goodwill and brotherhood serves to a greater extent towards humanity. Sports and games provide a common platform where sportsperson for different regions, professing different religions and faiths, speaking different languages, having different customs and traditions interact with each other in a harmonious and congenial atmosphere where they forget all their differences and emerge as a homogenous group. Such type of thinking, insight and mental approach can play positive role in nation integration. Sports and games help in creating such understanding and can play a very decisive and pivotal role in bringing about national integration.

The main purpose of this study will be to compare selected physical and physiological variables of inter-collegiate Kabaddi and Kho-Kho Players.

On the basis of available literature and the researcher's own knowledge, about the problem, it is hypothesized that there will be significant difference in physical and physiological variables of inter-collegiate Kabaddi and Kho-Kho players.

Materials and Methods

Subjects:

The sample consisted of fifty male inter-collegiate Kabaddi and Kho-Kho players of each game were selected randomly from Bangalore University and their aged ranged between 18 to 28 years. All subjects had participated in Bangalore University inter-collegiate Kabaddi and Kho-Kho tournaments, session 2018-19. The players were informed about the essence of the studies planned, and they as well as their College Physical Education Directors/coaches consented to voluntary testing.

The selected physical fitness variables are agility, strength and flexibility and physiological variables are systolic and diastolic pressure, hemoglobin (Hb %) and resting Pulse Rate

Selection of Tests

The selected motor fitness, physiological and psychological parameters and their respective tests will be administered and are presented in Table 1.

Table 1: List of Variables and their respective Test

S. N.	Variables	Test
Physical Fitness Tests		
1.	Agility	SEMO test
2.	Explosive Strength	Vertical Jump test
3.	Flexibility	Sit and Reach test
Physiological Tests		
1.	Resting Heart Rate	Ulna and Radius and Carotid test
2.	Hemoglobin	Blood test
3.	Systolic Pressure	B.P Test
4.	Diastolic Pressure	B.P Test

Statistical Analysis

The statistical analysis of the data gathered for the comparison of physical fitness and physiological parameters of inter-collegiate Kabaddi and Kho-Kho players analyzed by using statistical independent 't' test. To testing the hypothesis the level of significance at 0.05 level of confidence was considered adequate for the purpose of this study.

Results

Results were presented in tables, graph and interpreted as follows:

Table 2: Mean, Standard deviations and t-value of Agility scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	11.02	0.68	5.13*
2	Kho-Kho	50	10.16	0.57	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 2 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on agility respectively. The mean values of Kabaddi (11.02) and Kho-Kho (10.16) indicates that there is difference in agility of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value 5.13 which was higher than tabulated value at 0.05 level. Therefore it reveals that there is significant difference in agility of inter-collegiate Kabaddi and Kho-Kho players.

Table 3: Mean, Standard deviations and t-value of Explosive strength scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	36.02	5.04	10.28*
2	Kho-Kho	50	43.28	5.64	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 3 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on explosive strength respectively. The mean values of Kabaddi (36.02) and Kho-Kho (43.28) indicates that there is difference in explosive strength of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value 10.28 which was higher than tabulated value at 0.05 level. Therefore it reveals that there is significant difference in explosive strength of inter-collegiate Kabaddi and Kho-Kho players.

Table 4: Mean, Standard deviations and t-value of Flexibility scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	5.08	0.52	4.68*
2	Kho-Kho	50	7.42	0.64	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 4 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on flexibility respectively. The mean values of Kabaddi (5.08) and Kho-Kho (7.42) indicates that there is difference in explosive strength of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value 4.68 which was higher than tabulated value at 0.05 level. Therefore it reveals that there is significant difference in flexibility of inter-collegiate Kabaddi and Kho-Kho players.

Table 5: Mean, Standard deviations and t-value of Systolic pressure scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S. D	t-value
1	Kabaddi	50	101.45	10.12	.311
2	Kho-Kho	50	103.29	9.41	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 5 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on systolic pressure respectively. The mean values of Kabaddi (101.45) and Kho-Kho (103.29) indicates that there is difference in systolic pressure of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value. 311 which was lower than tabulated value at 0.05 level. Therefore it reveals that there is no significant difference in systolic pressure of inter-collegiate Kabaddi and Kho-Kho players.

Table 6: Mean, Standard deviations and t-value of Diastolic pressure scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	62.14	10.23	.378
2	Kho-Kho	50	63.28	9.11	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 6 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on diastolic pressure respectively. The mean values of Kabaddi (62.14) and Kho-Kho (63.28) indicates that there is difference in diastolic pressure of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value.378 which was lower than tabulated value at 0.05 level. Therefore it reveals that there is no significant difference in diastolic pressure of inter-collegiate Kabaddi and Kho-Kho players.

Table 7: Mean, Standard deviations and t-value of Hemoglobin scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	12.65	1.24	.865
2	Kho-Kho	50	13.02	1.26	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 7 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on hemoglobin respectively. The mean values of Kabaddi (12.65) and Kho-Kho (13.02) indicates that there is difference in hemoglobin

of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value.865 which was lower than tabulated value at 0.05 level. Therefore it reveals that there is no significant difference in hemoglobin level of inter-collegiate Kabaddi and Kho-Kho players.

Table 8: Mean, Standard deviations and t-value of resting pulse rate scores of Inter-collegiate Kabaddi and Kho-Kho players

S. N	Groups	N	Mean	S.D	t-value
1	Kabaddi	50	66.24	5.06	3.64
2	Kho-Kho	50	64.18	4.24	

Significance at 0.05 level of confidence. Tabulated t-value 3.24

Table 8 showing the mean, standard deviation and t-values of inter-collegiate Kabaddi and Kho-Kho players on resting pulse rate respectively. The mean values of Kabaddi (66.24) and Kho-Kho (64.18) indicates that there is difference in resting pulse rate of inter-collegiate Kabaddi and Kho-Kho players. When these scores were subjected to 't' test gives out calculated value 3.64 which was lower than tabulated value at 0.05 level. Therefore it reveals that there is no significant difference in resting pulse rate of inter-collegiate Kabaddi and Kho-Kho players.

Discussions

The results of t-ratio of it showed significant difference in some physical fitness and physiological parameters of Kabaddi and Kho-Kho inter-collegiate players. In physiological parameters diastolic pressure showed significant difference between Kabaddi and Kho-Kho players. The diastolic pressure of Kho-Kho inter-collegiate players more than Kabaddi inter-collegiate players, which may be due to nature of game and movement which demand more blood volume with greater diastolic pressure but systolic pressure, hemoglobin (Hb%) and resting pulse rate expressed insignificant difference between Kabaddi and Kho-Kho inter-collegiate players.

The research finding of some physical fitness parameters indicated significant difference between Kabaddi and Kho-Kho inter-collegiate players. The agility and explosive strength expressed significant difference. The agility of Kabaddi inter-collegiate players more than Kho-Kho players, which due to quick and speedy movement in catching and raid. The explosive strength of Kho-Kho players higher than Kabaddi inter-collegiate players but Flexibility showed insignificant difference between Kabaddi and Kho-Kho players.

On the basis of result, it is hypothesized that there were significant difference in agility, explosive strength and diastolic pressure variables of Kabaddi and Kho-Kho inter-collegiate players.

It is also hypothesized that there were insignificant difference in others physical and physiological variables of Kabaddi and Kho-Kho inter-collegiate players.

Conclusions

1. It was seen that there is significant difference in agility and explosive strength of Kabaddi and Kho-Kho inter-collegiate players.
2. It was seen that there is significant difference in flexibility of Kabaddi and Kho-Kho inter-collegiate players.
3. There is no significant difference in systolic pressure of Kabaddi and Kho-Kho inter-collegiate players.
4. There is no significant difference in diastolic pressure of

Kabaddi and Kho-Kho inter-collegiate players.

5. It was found seen that there is no significant difference in hemoglobin percentage of Kabaddi and Kho-Kho inter-collegiate players.
6. It was revealed that there is no significant difference in resting pulse rate of Kabaddi and Kho-Kho inter-collegiate players.

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