

Comparison of Cardio-Vascular Endurance level between the Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh

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Abstract- The purpose of this study was to compare the cardio-vascular endurance level between the Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh. A total one hundred nine (N=109) circle style male kabaddi players of eight teams of both universities were selected. In this study, 600 meters run test were used to measure the Cardio-Vascular Endurance level of the players. The study had been analyzed with the help of mean, SD, SE_D and the comparison between groups was done with the help of 't' ratio. For Statistical Description the Statistical Package for Social Sciences (SPSS), version 21.0 was used. The study revealed that on the basis of the finding the players of Punjabi University Patiala and Panjab University Chandigarh were possessing same degree of Cardio-Vascular Endurance level.

Key words- Cardio-Vascular Endurance, Test, Circle Style Kabaddi.

Introduction-

“Each sports activity demands different types and levels of different motor abilities and when a sportsman possesses that he is said to have a specific physical fitness. It is the specific fitness which makes it possible for a player to perform unusual and extraordinary movements and to do so at a very high standard of efficiency. It is also termed as performance fitness”. (Singh, 1984).

Circle Style Kabaddi

The “circle kabaddi” or Punjab style, for which the World Cup was organized, is quite different from the “national style”. As the name suggests, it is played in a circular ground instead of the rectangular one as is the case in the “national style”. After a raider and a defender tag, it is the display of strength and skill of the two players from the opposite sides. (The Hindu, 2012)

“This game is becoming a popular game in many parts of the world and there is an increasing demand with regard to fitness skill and related capabilities of the circle style kabaddi players. The promotion and evaluation of the level of physical fitness is considered essential in Circle Style Kabaddi”. (Singh T. 2018)

So many studies has been completed on physical fitness or comparative study of physical fitness components between the players of many games. Singh, T. (2019) conducted a comparative study of Speed and Muscular Power between the male raiders and stoppers of circle style kabaddi, Singh, Singh, T. (2019). conducted a comparative study of balance ability and flexibility among the male raiders and stoppers of circle style kabaddi; T. (2018). Constructed and standardized a specific physical fitness test battery for circle style kabaddi players, Suman Rani (2018) conducted a comparative study of flexibility between kabaddi and kho-kho games players, Singh, T. (2018) conducted a comparative study of cardio-vascular endurance, agility and flexibility level between the circle style male kabaddi players of PU Chandigarh and KU Kurukshetra, Singh, S. Dr. (2017) conducted a comparative study of selected motor fitness components between inter-university and inter-college male Kabaddi players, Guta .(2017) conducted a comparative study on Physical Fitness Components between physical and non-physical education male students in Nekemte College of Teacher Education, Mandrekar (2017) conducted a comparative study on selected physical fitness variables of inter collegiate cricket and football players of Goa, Rani, D. and Dr. Kumar, V. (2016) conducted a comparative study of physical fitness components between kabaddi and kho-kho girls players of Haryana; Shahid Bashir and Rajkumar P. Malipatil (2013), conducted a comparative study of Cardiovascular Fitness between Sportsperson and Non Sportsperson.

Cardio vascular endurance - cardio-vascular endurance are also play a very important role for the players of circle style kabaddi. For continue efforts in the match, the players of circle style kabaddi are required a good level of cadio-vascular endorance. The team whose players have a good level of cardiovascular endurance can convert the defeat into the victory in the last few minutes of the match.

“Cardio-respiratory (vascular) endurance is the ability of the circulatory and respiratory system to adjust to the vigorous exercise and to recover from the effect of exercise”. (Phillip and Hornak, 1979).

“Cardiovascular function is important in supplying the muscles with fuel and oxygen, the more efficient the cardiovascular function, the longer a person will be able to sustain work. It represents the ability of circulatory, respiratory, and other system of the body to put forth and extended and persistent effort. Cardio vascular function is regarded”. (Shahid B. and Rajkumar P. M., 2013).

Objective of the study: To assess the significance difference in Cardio-Vascular Endurance level between the Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh.

Method and procedure:

Sample- one hundred nine (N=109) i.e. Punjabi University Patiala (N=53).and Panjab University Chandigarh (N=56) subjects for this study were selected with the purposive sampling technique from eight teams which were qualified for the league stage of the inter college tournament of selected universities.

Hypothesis- Null hypothesis for the test.

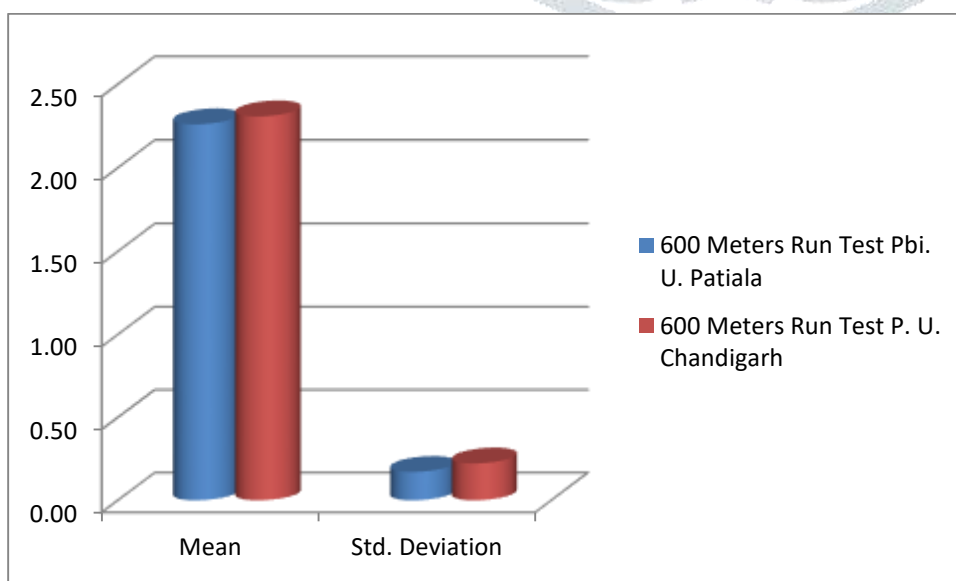
Method -All participant were informed of the procedure and purpose the experiment and were required to sign and important consent to participate in the study. Keeping in view the research criteria of availability, reliability and validity the following tools were used to collect the data. The selected physical fitness component- Cardio-Vascular Endurance level was measured by 600 meters Run Test. The test was selected from the short specific physical fitness test battery for circle style kabaddi players (Singh T. 2018). For Statistical Description the Statistical Package for Social Sciences (SPSS), version 21.0 was used.

Analysis of data- In the present study analysis and interpretation of the data and result obtained through the application of statistics. This part is devoted to the comparative result of selected physical fitness components of Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh. The results had been discussed in two sections. Section-I deal with the statistical description of means and Std. Deviation of the scores of the players of both Universities and comparative result of the players of both Universities of muscular power of upper body and speed have been discussed with the help of t-ratio in section II.

Section:- I**Statistical Description of Mean and Std. Deviation of the tests of Circle Style Male Kabbadi Players of Punjabi University Patiala and Panjab University Chandigarh****Table:-1**

Group Statistics					
Cardio-Vascular Endurance		N	Mean	Std. Deviation	Std. Error Mean
600 Meters Run Test	Pbi. U. Patiala	53	2.26	0.17	0.02
	P. U. Chandigarh	56	2.31	0.22	0.03

For Cardio-Vascular Endurance level (600 meters Run Test) the mean of the performance of Punjabi University Patiala was 2.26 minutes and the mean of the performance of the Players of Panjab University Chandigarh was 2.31 minutes and the mean of the performance of Punjabi University Patiala was 2.65 minutes. So simple difference between means of the players of both universities was 0.05 minutes. Std. Deviation of the score of the Players of Punjabi University Patiala was 0.17 and the Std. Deviation of the score of Panjab University Chandigarh was 0.27.

Graphical presentation of Mean and SD of the tests of the Circle Style Male Kabbadi Players of Punjabi University Patiala and Panjab University Chandigarh**Section:- 2**

This section presents the comparison of the Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh on the selected physical fitness component. The comparisons with the significance of difference between means score of the players of both universities on selected variable is presented in Table No. 2.

Statistical Description- Significance of difference between means score with ‘t’ value of the Circle Style Male Kabaddi Players of Punjabi University Patiala and Panjab University Chandigarh:-

Table -2

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
600 Meters Run Test	Equal variances assumed	.307	.581	-1.242	107	.217	-0.05	0.04	-0.12	0.03
	Equal variances not assumed			-1.251	103	.214	-0.05	0.04	-0.12	0.03

The sig. of “Levene’s Test for Equality of Variances was less than 0.05 for the 600 Meters Run Test. So the second row (Equal variances not assumed) was selected for the test.

Interpretation of the t-test results- t-test was employed to find out the significance difference between the means. The significance level was set at 0.05 levels. The t value for the 600 Meters Run Test was -1.251. The p-value for 600 Meters Run Test was 0.214. The p-value given by SPSS is 2-tailed, but according to hypothesis there was a need to divide it in half for a 1-tailed test. According to the table-2 the 1-tailed p-value for 600 Meters Run Test is also 0. .214/2=0.107.

Findings:

1. As per the results depicted in Table-2 shows that the p-value for 600 Meters Run Test was more than 0.05. So, there was not a statistical significance difference between the male players of circle style kabaddi of Punjabi University Patiala and Panjab University Chandigarh in Cardio-Vascular Endurance level.
2. The hypothesis for the test of Cardio-Vascular Endurance level was accepted.

Conclusion: The findings of the study can be concluded as under: On the basis of t -test applied the finding of the study concluded that there was not a statistical significance difference on 600 Meters Run Test with p-value 0.107. So the players of Punjabi University Patiala and Panjab University Chandigarh have the same level in Cardio-Vascular Endurance.

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Raw data of the players of Punjabi University Patiala and Panjab University Chandigarh
600 Meters Run Test

Punjabi University Patiala

Panjab University Chandigarh

	Name	Time	in sec.	in minutes		Name	Time	in sec.	in minutes
1	Sukhdeep Singh	02:16.2	136.2	2.27	1	Sapinder Singh	02:12.6	132.6	2.21
2	Avtar Singh	02:23.4	143.4	2.39	2	Manjinder Singh	02:10.8	130.8	2.18
3	Sandeep Singh	02:14.4	134.4	2.24	3	Vizen Kumar	02:13.8	133.8	2.23
4	Parminder Singh	02:01.2	121.2	2.02	4	Amritpal Singh	02:16.2	136.2	2.27
5	Gurpreet Singh	02:03.6	123.6	2.06	5	Punjab Singh	02:01.2	121.2	2.02
6	Rajakaranveer Singh	02:40.8	160.8	2.68	6	Kamalpreet Singh	02:18.6	138.6	2.31
7	Satnam Singh	02:07.8	127.8	2.13	7	Parminder Singh	02:09.0	129	2.15
8	Asif Mohammad	02:22.8	142.8	2.38	8	Gurdeep Singh	02:21.6	141.6	2.36
9	Harmanpreet Singh	02:22.2	142.2	2.37	9	Sheetal Singh	02:58.2	178.2	2.97
10	Pardeep Singh	02:17.4	137.4	2.29	10	Ramandeep Singh	02:10.8	130.8	2.18
11	Balkarn Singh	02:21.6	141.6	2.36	11	Gurwinder Singh	02:20.4	140.4	2.34
12	Jaskirat Singh	02:20.4	140.4	2.34	12	Kulwinder Singh	02:16.8	136.8	2.28
13	Mandeep Singh	02:05.4	125.4	2.09	13	Devinder Singh	02:12.6	132.6	2.21
14	Gagandeep Singh	02:11.4	131.4	2.19	14	Kulwinder Singh	02:21.6	141.6	2.36
15	Karanbarinder Singh	02:13.2	133.2	2.22	15	Rajwant Singh	02:06.0	126	2.1
16	Gagandeep Singh	02:09.0	129	2.15	16	Kulwinder Singh	02:03.6	123.6	2.06
17	Gursimran Singh	02:11.4	131.4	2.19	17	Rajwinder Singh	02:07.8	127.8	2.13
18	Gursewak Singh	02:24.6	144.6	2.41	18	Hardavinder Singh	02:17.4	137.4	2.29
19	Rajwinder Singh	02:10.8	130.8	2.18	19	Sukhjeet Singh	02:19.8	139.8	2.33
20	Sandeep Singh	02:13.8	133.8	2.23	20	Mandeep Singh	02:16.8	136.8	2.28
21	Jaspinder Singh	02:11.4	131.4	2.19	21	Chand Singh	02:17.4	137.4	2.29
22	Vatandeep Singh	02:03.0	123	2.05	22	Harman Singh	02:11.4	131.4	2.19
23	Harmanjit Singh	02:12.6	132.6	2.21	23	Lakhveer Singh	02:18.6	138.6	2.31
24	Hardeep Singh	02:08.4	128.4	2.14	24	Sukhveer Singh	02:14.4	134.4	2.24
25	Jasmeet Singh	02:24.6	144.6	2.41	25	Gurik Singh	02:22.2	142.2	2.37
26	Ramanpreet Singh	02:22.8	142.8	2.38	26	Amarpreet Singh	02:20.4	140.4	2.34
27	Preetpal Singh	02:24.6	144.6	2.41	27	Harmandeep Singh	02:12.0	132	2.2
28	Manjot Singh	02:24.0	144	2.4	28	Jagpal Singh	02:54.6	174.6	2.91
29	Jaskirt Singh	02:18.6	138.6	2.31	29	Gurtej Singh	02:24.6	144.6	2.41
30	Darshan Singh	02:03.0	123	2.05	30	Inderjeet Singh	02:16.2	136.2	2.27
31	Baljit Sharma	02:10.2	130.2	2.17	31	Rupinder Singh	02:21.6	141.6	2.36
32	Harmeet Singh	02:06.6	126.6	2.11	32	Sukhpreet Singh	02:03.0	123	2.05
33	Karanpreet Singh	02:04.2	124.2	2.07	33	Amritpal Singh	02:04.8	124.8	2.08
34	Jagmeet Singh	02:11.4	131.4	2.19	34	Satnam Singh	02:13.8	133.8	2.23

35	Balwant Singh	02:22.8	142.8	2.38	35	Parminder Singh	02:16.8	136.8	2.28
36	Balwant Singh	02:17.4	137.4	2.29	36	Sukhchain Singh	02:15.0	135	2.25
37	Amtojran	02:24.6	144.6	2.41	37	Gurwinder Singh	02:19.8	139.8	2.33
38	Parminder Singh	02:22.8	142.8	2.38	38	Harjaspreet Singh	02:21.6	141.6	2.36
39	Satnam Singh	02:15.6	135.6	2.26	39	Sukhpreet Singh	02:06.6	126.6	2.11
40	Shyam Sunder	02:09.0	129	2.15	40	Randhir Singh	02:09.6	129.6	2.16
41	Sarabjit Singh	02:01.2	121.2	2.02	41	Amanjot Singh	02:16.2	136.2	2.27
42	Mandeep Singh	02:23.4	143.4	2.39	42	Pawanvir Singh	02:04.2	124.2	2.07
43	Karmjit Singh	02:06.6	126.6	2.11	43	Harjinder Singh	02:36.6	156.6	2.61
44	Tejinder Singh	02:18.0	138	2.3	44	Gurkarpal Singh	03:00.0	180	3
45	Major Singh	02:19.8	139.8	2.33	45	Bhupinder Singh	02:07.2	127.2	2.12
46	Amanpreet Singh	02:00.6	120.6	2.01	46	Gurmeet Singh	02:09.0	129	2.15
47	Rupinder Singh	02:58.8	178.8	2.98	47	Ramandeep Singh	02:09.0	129	2.15
48	Kuldeep Singh	02:21.0	141	2.35	48	Iqbal Singh	02:17.4	137.4	2.29
49	Sukhwant Singh	02:18.6	138.6	2.31	49	Manpreet Singh	02:16.8	136.8	2.28
50	Karanbir Singh	02:00.6	120.6	2.01	50	Jaspreet Singh	02:18.0	138	2.3
51	Arandeep Singh	02:15.0	135	2.25	51	Surinder Singh	02:20.4	140.4	2.34
52	Akashdeep Singh	02:21.0	141	2.35	52	Gurlamber Singh	02:16.8	136.8	2.28
53	Raman Kumar	02:15.0	135	2.25	53	Gurparkash Singh	02:15.6	135.6	2.26
					54	Jashandeep Singh	02:45.6	165.6	2.76
					55	Amandeep Singh	02:24.0	144	2.4
					56	Jaspreet Singh	02:58.2	178.2	2.97

