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Comparison of muscular power and muscular strength endurance level between the circle style male kabaddi players of Panjab University Chandigarh and Guru Nanak Dev University Amritsar

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Abstract

The purpose of this study was to compare the muscular power and muscular strength endurance level between the Circle Style Male Kabaddi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar. A total one hundred twelve (N=112) circle style male kabaddi players of eight teams of both universities were selected. In this study the Medicine Ball Throw Test and Dips Test were used to measure the muscular power and muscular strength 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 both the teams were possessing same degree of Muscular Power. But players of Guru Nank Dev University Amritsar were better in Muscular Strength Endurance than the players of Panjab University Chandigarh.

Keywords: muscular power, muscular strength endurance, circle style kabaddi

Introduction

A fit person can do the more work without any fatigue and the quality of the work will also be better. Today's games and sports demand best specific physical fitness for the best performance. For a specific game or event, the player must possess all of the body parts to be fit essential to the best performance and must have the proper body size and shape for the activity.

Circle Style Kabaddi 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)

Full team of 10 players may be maintained throughout the duration of the match and every player can become raider or stopper. There is not a requirement for the raider to saying "Kabaddi, Kabaddi" throughout the raid. Whenever the stopper, stops the raider from going back to his starting point, the stopper's team gets one point and whenever the raider touch one of the stoppers and returns to his side through the gateway in the time, his team gets one point. At one time only one raider can go for the raid and only one defender (stopper) can try to stop the raider during a raid whose touch to the raider will be the first. If other defender will also touch or stop to the raider, the point will go to the team of raider. If the stopper is pushed out by the raider or vice-versa, then the team whose member is still in the field gets a point. But both teams do not get a point If raider and defender go out of the field; the point will be common. Any player does not go out of the court, but stays inside, and only one point is awarded to the team that raider or defender is successful.

So many studies has been completed on physical fitness or comparative study of physical fitness components between the players of many games. Singh, T. Dr. (2021) ^[9]. conducted a Comparative Study of Muscular Power and Speed between the Circle Style Male Kabaddi

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Players of Punjabi University Patiala and Panjab University Chandigarh, Singh, T. Dr. (2020) [8] conducted a Comparative analysis of Cardio-vascular endurance between the male raiders and stoppers of circle style kabaddi, Singh, T. (2019) [6, 7], conducted a Comparative analysis of speed and muscular power between the male raiders and stoppers of circle style kabaddi, Singh T. (2019) [6, 7] conducted a Comparative Analysis of Agility and Reaction Ability between the male Raiders and Stoppers of Circle Style Kabaddi, Singh, T. (2018) [4, 5]. Constructed and standardized a specific physical fitness test battery for circle style kabaddi players, Rani, S. (2018) [2] conducted a comparative study of flexibility between kabaddi and kho-kho games players, Singh, T. (2018) [4, 5] conducted a comparative study of cardio-vascular endurance, agility and flexibility level between the circle kabaddi players of Panjab University Chandigarh and kurukshetra University kurukshetra, Kumar K, Himanshu H, Kumari H (2018) [3] conducted a comparative study of sports achievement motivation of national level circle style kabaddi players, Singh, S. Dr. (2017) [10] conducted a comparative study of selected motor fitness components between interuniversity and inter-college male Kabaddi players. Muscular power and muscular strength endurance are also play a very important role for the players of circle style kabaddi. Fast pushing and continue pushing are common actions in this game. So in this study only these abilities are focused.

Muscular Power: Power may be identified as the ability to release maximum force in the fastest possible time. (Johnson and Nelson, 1982) [1].

The players of Circle style Kabaddi should have the higher rate of upper body muscular power so that they can throw quick to anti with upper body during the struggle that is required for the better performance (Singh T., 2021). The selected physical fitness test item is Medicine Ball Throw that measure the upper body power.

Muscular Strength Endurance

Muscular Strength endurance is the player's tolerance level against fatigue in strength performance during a long time activity.

The muscular strength endurance component also play very important role for better performance in Circle Style Kabaddi. The players of Circle Style Kabaddi should have higher rate of Strength Endurance of arms so that they can do continue efforts with arms strength in the competition that is required for better performance. The selected physical fitness test item is Dips Test that measure the muscular strength and endurance of the arms.

Objective of the study: To assess the significance difference in muscular power and muscular strength endurance level between the Circle Style Male Kabaddi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar.

Method and Procedure

Sample: One hundred twelve (112) 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 i.e. Panjab University Chandigarh (N=56) and Guru Nank Dev

University Amritsar (N=56).

Hypothesis: Null hypothesis for both tests.

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 components- muscular power of upper body and muscular strength endurance of arms were measured by different means and methods. Muscular power was measured by medicine ball throw test and Muscular Strength Endurance was measured by dips test. The tests were selected from the 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 muscular strength endurance of arms have been discussed with the help of t-ratio in section II.

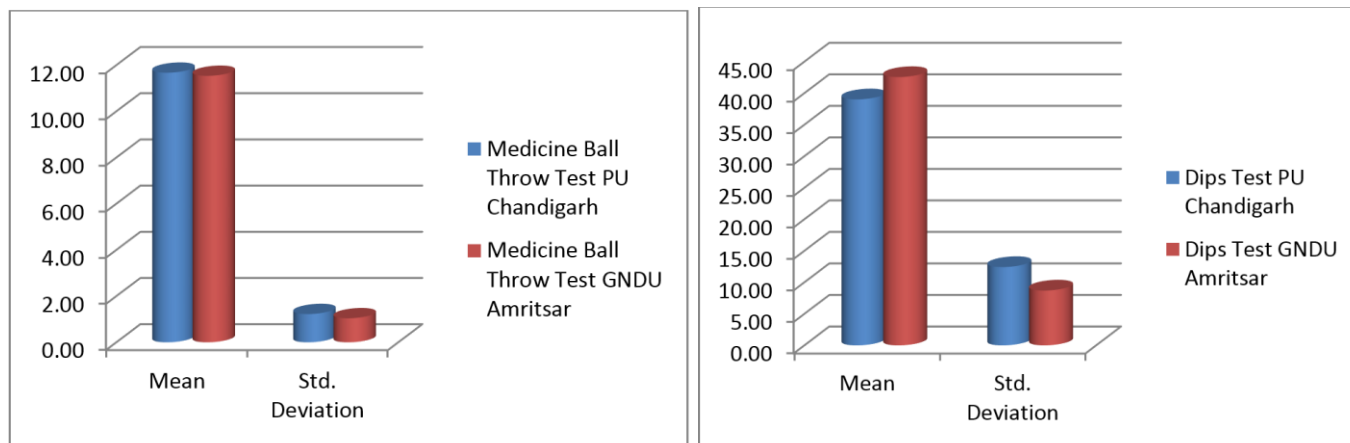
Section:- I

Table 1: Statistical Description of Mean and Std. Deviation of the tests of Circle Style Male Kabbadi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar

Group Statistics					
		N	Mean	Std. Deviation	Std. Error Mean
Medicine Ball Throw Test	PU Chandigarh	56	11.67	1.22	0.16
	GNDU Amritsar	56	11.54	1.04	0.14
Dips Test	PU Chandigarh	56	39.02	12.42	1.66
	GNDU Amritsar	56	42.55	8.70	1.16

For Muscular Power (Medicine Ball Throw Test) the mean of the performance of the Players of Panjab University Chandigarh was 11.67 meters and the mean of the performance of Guru Nank Dev University Amritsar was 11.54 meters. So simple difference between means of the players of both universities was 0.13 meters. Std. Deviation of the score of the Players of Panjab University Chandigarh was 1.22 and the Std. Deviation of the score of Guru Nank Dev University Amritsar was 1.04.

For Muscular Strength Endurance (Dips Test) the mean of the performance of the Players of Panjab University Chandigarh was 39.02 and the mean of the performance of Guru Nank Dev University Amritsar was 42.55. So simple difference between means of the players of both universities was 3.53. Std. Deviation of the score of the Players of Panjab University Chandigarh was 12.42 and the Std. Deviation of the score of Guru Nank Dev University Amritsar was 8.70.



Graphical presentation of Mean and SD of the tests of the Circle Style Male Kabaddi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar

Section:- 2

This section presents the comparison of the Circle Style Male Kabaddi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar on the selected physical fitness

components. The comparisons with the significance of difference between means score of the players of both universities on selected variables are presented in Table No. 2.

Table 2: Statistical Description- Significance of difference between means score with 't' value of the Circle Style Male Kabaddi Players of Panjab University Chandigarh and Guru Nank Dev University Amritsar

		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	
Medicine Ball Throw Test	Equal variances assumed	5.875	.017	.631	110	.529	.13554	.21486	Lower	Upper
	Equal variances not assumed			.631	107.24	.530	0.14	0.21	-0.29	0.56
Dips Test	Equal variances assumed	16.089	.000	-1.745	110	.084	-3.54	2.03	-7.55	0.48
	Equal variances not assumed			-1.745	98.48	.084	-3.54	2.03	-7.56	0.48

The sig. of "Levene's Test for Equality of Variances was less than 0.05 for the Medicine Ball Throw Test and Dips Test. So the first rows (Equal variances assumed) were selected for the both tests.

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 Medicine Ball Throw Test was 0.631 and for the Dips Test was 1.745. The p-value for the Medicine Ball Throw Test was 0.53 and for the Dips Test was 0.084. 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 Medicine Ball Throw Test is $0.53/2=0.265$ and for Dips Test is $0.084/2=0.042$.

Findings

- As per the results depicted in Table-2 shows that the p-value for Medicine Ball Throw Test was more than 0.05. So, there was not a statistical significance difference between the male players of circle style kabaddi of Panjab University Chandigarh and Guru Nank Dev University Amritsar in Agility level.
- The hypothesis for Muscular Power level was accepted.
- As per the results depicted in Table-2 shows that the p-value for Dips Test was less than 0.05. So, there was a

statistical significance difference between the players of circle style kabaddi of Panjab University Chandigarh and Guru Nank Dev University Amritsar in Muscular Strength Endurance level.

- The hypothesis for Muscular Strength Endurance level was rejected.

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 Medicine Ball Throw Test with p-value 0.265. So the players of Panjab University Chandigarh and Guru Nank Dev University Amritsar have the same Muscular Power level. But there was a statistical significance difference in Dips Test with with p-value 0.042. So the players of Panjab University Chandigarh and Guru Nank Dev University Amritsar have not the same Muscular Strength Endurance level. The male players of Circle Style Kabaddi Guru Nank Dev University Amritsar were better in Muscular Strength Endurance than the players of Panjab University Chandigarh.

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