Comparative analysis of Cardio-vascular endurance between the male raiders and stoppers of circle style kabaddi

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Abstract

The purpose of this study was to compare Cardio-Vascular endurance between the male raiders and stoppers of circle style kabaddi. With the purposive sampling technique a total two hundred sixteen (103 raiders and 113 stoppers) of circle style kabaddi were taken as subjects. The results were obtained through the SPSS version 21.0. In this study the 600 Meters Run Test was used to measure the Cardio-Vascular endurance of the players. The study had been analyzed with the help of mean, SD, Levene's test for equality of variances and the comparison between groups was done with the help of t-test. The study revealed that on the basis of the finding male raiders and stoppers were not possessing same degree of Cardio-Vascular endurance and raiders have more ability of Cardio-Vascular endurance than stoppers.

Keywords: Cardio-vascular endurance, raider, stopper, circle style kabaddi

Introduction

Williams (1962) [7] cleared about physical fitness that physical fitness is essential not only in terms of general health, but also for the special physical requirements for competitive sports and certain highly specialized and demanding occupations. There are different requirements of physical fitness for different games. A gymnast has different degree of Cardio-vascular endurance than a basketball or football player. Different degrees of different physical fitness components are required for different games or events. A player who has physical fitness according to his game can do better training of the game. The greater degree of physical fitness is required for the high level performance in the sports and games. The player can be injured during the training or competition if he has not high level physical fitness. Circle style kabaddi requires a high level physical fitness. This game is a combative game and during the completion the body parts of the players take high level stressing. Due to the high level stressing the players are often injured in this game. For avoiding the injuries the player should be proper physically fit.

Physical fitness gives the good feeling to the players and it increases the self-confidence of the players. Self-confidence plays a very important role for the better performance in the games. Physical fitness is a ability to tolerate the more stress of physical load. A fit player can continue the training or play under difficult circumstances whereas unfit player would quit under difficult circumstances.

Circle Style Kabaddi is an indigenous game of the Punjab region. People were playing Kabaddi with some variations in different areas of Punjab and had entertained but now all types of Kabaddi which were played in ancient Punjab have merged into the Circle Style Kabaddi. Circle Style Kabaddi is different from the National Style Kabaddi. This game is played in a circular type playfield instead the rectangular playfield of National Style Kabaddi. When a stopper touches the raider or raider touches any stopper, the other stopper can’t touch or stop to the raider. The struggle will be only in two apposite sides’ players. 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) [5, 6]. Comparative analysis of speed and muscular power between the male raiders and stoppers of circle style kabaddi.
in kabaddi, Singh, T. (2018) [3, 4]. Constructed and standardized a specific physical fitness test battery for circle style kabaddi players, Suman Rani (2018) [1] conducted a comparative study of flexibility between kabaddi and kho-kho games players, Singh, T. (2018) [3, 4] conducted a comparative study of cardio-vascular endurance, agility and flexibility level between the circle style male kabaddi players of Panjab University Chandigarh and kurukshetra University kurukshetra, Singh, S. Dr. (2017) [2] conducted a comparative study of selected motor fitness components between inter-university and inter-college male Kabaddi players. Cardio-Vascular endurance is also play a very important role for the players of circle style kabaddi. Circle style kabaddi players should have the higher rate of Cardio-Vascular Endurance so that they can do continue efforts during the 30 seconds raid again and again in the match. Many players do struggle continue in every raid or in many raids to win the match. The players who have not required Cardio-vascular Endurance’s level, they can’t maintain their performance level in the whole match.

Method and procedure
Sample: Total two hundred sixteen (103 raiders and 113 stoppers) subjects of this study were selected with the purposive sampling technique from eight teams which were qualified for the league stage of the inter college Kabaddi Circle Style tournament of selected universities i.e. Panjab University Chandigarh, Punjabi University Patiala, Guru Nanak Dev University Amritsar and Kurukshetra University Kurukshetra.

Selection of Variables: Cardio-Vascular endurance level considered as a variable for this study. 600 meters run test was selected for measuring cardio-vascular endurance level of male raiders and stoppers of circle style kabaddi. This tool was taken from the specific physical fitness test battery for circle style kabaddi players, standardized by Mr. Tejinder Singh (2018) [3, 4].

Hypothesis: It was hypothesized that there would be significant difference between male raiders and stoppers of Circle Style kabaddi on Cardio-Vascular endurance level.

Procedure of tests: All participant were informed of the procedure and purpose the experiment and were required to sign and important consent to participate in the study. Cardio-Vascular endurance was measured by 600 meters run test. Score for 600 meters run test was taken in seconds.

Statistical Procedure: In order to compare the cardio-vascular endurance level of male raiders and stoppers of circle style kabaddi, the independent t-test was employed. The level of significance chosen to test the hypothesis was 0.05, P < 0.05. 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 results obtained through the application of statistics. This part is devoted to the comparative result of the male raiders and stoppers of Circle Style Kabaddi of selected Cardio-Vascular endurance component. The results had been discussed in two sections. Section-I deals with the statistical description of means and Std. Deviation of the scores of raiders & stoppers. Section II deals with the comparative result of Cardio-Vascular Endurance of the raiders & stoppers. This section have been discussed with the help of t-ratio.

Section: I

Table 1: Shows the mean & Std. Deviation of the test of the raiders and stoppers in group statistics.

|                | Group Statistics | Group     | N  | Unit | Mean   | Std. Deviation | Std. Error | Mean   | Std. Deviation |
|----------------|------------------|-----------|----|------|--------|----------------|------------|--------|----------------|
|                |                  | Run       | 113| Seconds | 46.29  | 17.82         | 1.68       | 141.74 | 16.14         |
|                |                  | Raiders   | 103| Seconds | 41.74  | 16.14         | 1.59       | 146.29 | 17.82         |

Statistical Description of Mean and SD of the test of male raiders and stoppers of Circle Style kabaddi

Table-1 shows the mean & Std. Deviation of the test of the raiders and stoppers in group statistics. The output shows that the mean & Std. Deviation of score for 600 Meters Run Test of raiders were 141.74 & 16.14 versus 146.29 & 17.82 for stoppers.

Section 2: This section presents the comparison of Cardio-Vascular endurance between the male raiders and stoppers of Circle Style kabaddi. The comparison with the significance of difference between means score of the raiders and stoppers on selected variable is presented in Table No. 2.

Statistical Description- Significance of difference between means score with t-test of male raiders and stoppers of Circle Style kabaddi

Table 2: This section presents the comparison of Cardio-Vascular endurance between the male raiders and stoppers of Circle Style kabaddi.

|                              | 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 |
| 600 Meters Run               |                          | 3.117      | .079  | -1.962 | 214 | .051          | -4.55            | 2.32               |

Graph 1: Graphical presentation of Mean and SD of the test of male raiders and stoppers of Circle Style kabaddi
The sig. of Levene’s test for equality of variances is more than 0.05 for 600 Meters Run Test. So, the first rows (Equal variances assumed) was selected for the test.

**Interpretation of the t-test results**: t-test was employed to find out the significance difference between means. The significance level was set at .05 levels. 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 0.051/2=0.025.

**Findings**: As per the result depicted in Table-2 shows that the p-values for 600 Meters Run Test was less than 0.05. So, there was a statistical significance difference between the male raiders and stoppers of Circle Style kabaddi in the Cardio-Vascular endurance.

**Raw data of Raiders and Stoppers**

| Raiders       | 600 M R in Seconds | Stoppers       | 600 M R in Seconds |
|---------------|--------------------|----------------|--------------------|
| Sukhdeep Singh| 136.2              | Avtar Singh    | 143.4              |
| Sandeep singh | 134.4              | Parminder Singh| 121.2              |
| Gurpreet Singh| 123.6              | Asif Mohmmad   | 142.8              |
| Rajakaranveer Singh | 160.8 | Balkarn Singh | 141.6              |
| Satnam Singh  | 127.8              | Pardeep Singh  | 137.4              |
| Harmanpreet Singh | 142.2 | Jaskirat singh| 140.4              |
| Mandep Singh  | 125.4              | Rajwinder Singh| 130.8              |
| Gagandeep Singh | 131.4          | Sandeep Singh  | 133.8              |
| Karanbirinder Singh | 133.2 | Gursewak Singh | 144.6              |
| Gagandeep Singh | 129              | Harmanjit Singh| 132.6              |
| Gursinran Singh | 131.4          | Hardeep Singh  | 128.4              |
| Jaspreet Singh | 131.4             | Ramanpreet Singh| 142.8              |
| Vatandeep Singh | 123              | Jaskirt Singh  | 138.6              |
| Jasmeet Singh  | 144.6              | Darshan Singh  | 123                |
| Praetpal Singh | 144.6             | Harmee Singh   | 126.6              |
| Manjot Singh   | 144                | Karanpreet Singh| 124.2              |
| Baljit Sharma  | 130.2              | Balwant singh  | 137.4              |
| Jugmeet Singh  | 131.4              | Amtojsran      | 144.6              |
| Balwant Singh  | 142.8              | Shyam Sunder    | 129                |
| Parminder Singh| 142.8              | Karmjit Singh  | 126.6              |
| Satnam Singh   | 135.6              | Major Singh    | 139.8              |
| Sarabjit Singh | 121.2              | Kuldeep Singh  | 141                |
| Mandep Singh   | 143.4              | Sukhwant Singh | 138.6              |
| Tejinder Singh | 138                | Karanbir Singh | 120.6              |
| Amanpreet Singh| 120.6              | Aranddeep Singh| 135                |
| Rupinder Singh | 178.8              | Akashdeeph Singh| 141               |
| Raman Kumar    | 135                | Sukhwinder Singh| 141               |
| Saranpreet Singh| 131.4           | Hardeep Singh  | 147                |
| Ravandeep Singh| 154.8              | Pargat Singh   | 128.4              |
| Manjobanject Singh | 130.8           | Gurwinder Singh| 136.8              |
| Pawandeep Singh | 141.6           | Amritpal Singh | 174.6              |
| Jaspal Singh   | 144.6              | Angrej Singh   | 153.6              |
| Amansing Singh | 133.8              | Mandep Singh   | 157.8              |
| Honey Deol     | 138.6              | Amrutveer Singh| 174.6              |
| Karanpreet Singh| 147.6            | Sulinder Singh | 130.2              |
| Manjinder Singh | 140.4            | Harmanpreet Singh| 143.4             |
| Ravinderpal Singh | 143.4        | Gurpreet Singh | 144                |
| Mandeep Singh  | 165                | Gurpinderjtit Singh| 179.4         |
| Manpreet Singh | 137.4              | Satpal singh   | 139.8              |
| Mandeep Singh  | 173.4              | Jaskiranjit Singh| 172.2             |
| Arabdeep Singh | 182.4              | Sarbijit Singh | 138.6              |
| Nirmal Singh   | 160.8              | Karamjit Singh | 167.4              |
| Dilsher Singh  | 175.8              | Balraj Singh   | 140.4              |
| Gurial Singh   | 172.8              | Jaspal Singh   | 165.6              |
| Jugraj Singh   | 169.8              | Gurpreet Singh | 182.4              |
| Jimal Singh    | 175.8              | Lovepreet Singh| 180.6              |
| Paramjit Singh | 173.4              | Maninder Singh | 168                |
| Malkit Singh   | 131.4              | Gursajjan Singh| 177                |
| Gurdas Singh   | 163.8              | Amritpal Singh | 171.6              |
| Arjun Singh    | 125.4              | Jasbir Singh   | 179.4              |
| Sandeep Singh  | 182.4              | Manpreet Singh | 181.2              |
| Lovejinder Singh | 153             | Kulwinder Singh| 161.4              |
| Manpreet Singh | 176.4              | Kawaljit Singh | 168.6              |
| Manjinder Singh | 130.8             | Jugraj Singh   | 163.2              |
| Parminder Singh | 129               | Robinpreet Singh| 165.6            |
| Gurdeep Singh  | 141.6              | khusdeep Singh | 181.2              |
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 a statistical significance difference on 600 Meters Run Test and the hypothesis was accepted. So, raiders and stoppers have not the same Cardio-Vascular endurance. The raiders have more ability of Cardio-Vascular endurance than stoppers.

References
1. Rani S. A comparative study of flexibility between kabaddi and kho-kho games players, International Journal of Yoga, Physiotherapy and Physical Education 2018, 3(2).
2. Singh S. Dr. A comparative study of selected motor fitness components between inter-university and inter-college male Kabaddi players, International Journal of Yoga, Physiotherapy and Physical Education 2017;2(6):65-67.
3. Singh T. A Comparative Study of Cardio-Vascular Endurance, Agility and Flexibility Level between the
Circle Style Male Kabaddi Players of PU Chandigarh and KU Kurukshetra, Online International Interdisciplinary Research Journal, [Bi-Monthly], ISSN 2249-9598, Volume-08, Sept 2018 Special Issue (02).

4. Singh T. Construction and Standardization of Specific Physical Fitness Test Battery for Circle Style Kabaddi Players, International Journal of Physical Education and Sports Sciences 2018, 13(07). ISSN 2231-3745.

5. Singh T. Comparative analysis of speed and muscular power between the male raiders and stoppers of circle style kabaddi, International Journal of Physical Education, Sports and Health 2019;6(4):148-153.

6. Singh T. Comparative Analysis of Agility and Reaction Ability between the male Raiders and Stoppers of Circle Style Kabaddi, ICPSHF 2019, organized by Physical Education Department of Punjabi University Patiala 2019.

7. Williams JCP. Sports medicine, London: Edward Arnold Ltd 1962, 1.