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Comparative study of linear kinematical variables during running hand touch skill among different level kabaddi players

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Abstract

The objective of the study was to compare linear kinematical variables during running hand touch skill execution between Inter-University and Inter-College level Kabaddi players of LPU. The total sample were comprised of six (three Inter-University + three Inter-College level) subjects. Six male Kabaddi players were selected from Lovely Professional University, Phagwara (Punjab). The age of the subjects ranged between 18 to 25 years. With regard to purpose of the study, Independent t-test statistical technique was applied for selected kinematic variables between Inter-University and Inter-College level Kabaddi players. The level of significance was set at 0.05 level. The results showed that there was no significant difference of center of gravity and distance between both feet during running hand touch skill execution between Inter-University and Inter-College level Kabaddi players. The study concludes that-Linear Kinematic variable: Center of Gravity did not significantly vary during running hand touch skill execution between Inter-University and Inter-College level LPU Kabaddi players. Linear Kinematic variable: Distance between both feet did not significantly vary during running hand touch skill execution between Inter-University and Inter-College level LPU Kabaddi players.

Keywords: Kabaddi, linear kinematic variables, center of gravity

Introduction

Skill is the ability to execute any movement without any fault. It is the basic requirement to do any task and Analysis is a separation of whole activity into its component parts. In analysis, skill is analyzed that how it was occurred and what can be done to improve it. It is the secret of development.

Kabaddi is an Indigenous game which is played between two teams in a rectangle shaped ground. There are so many skills exists which are used by Kabaddi players during the match to win the match and to take a maximum advantage by exerting minimum energy and those skills can be classified as Offensive skills like Running Hand Touch, Toe Touch etc. and Defensive Skills like Ankle Hold, Thigh Hold etc. Running Hand Touch Skill is an Offensive skill which is performed by every Raider. Hence, the purpose of the study was to analyze the Running hand touch skill execution pattern of Inter-University and Inter-College level Kabaddi players.

Methodology

Selection of Subjects: For the purpose of the study total six samples, three Inter-University and Inter-College level Kabaddi player were selected from Lovely Professional University, Phagwara (Punjab). The age of the subjects ranged between 18 to 25 years.

Selection of Variables: The following selected Linear Kinematic Variables were selected for this study.

Kinematic Variables:

- i) **Center of Gravity:** Center of Gravity was measured in centimeters by using Motion Analyzer Software- 'Kinovea' (Version-0.8.25) after obtaining the data with Two digital cameras Sony 80D (23.98 fps) and 60D (25 fps)
- ii) **Distance Between both feet:** Distance between both feet was measured in centimeters by

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using Motion Analyzer Software- 'Kinovea' (Version-0.8.25) after obtaining the data with Two digital cameras Sony 80D (23.98 fps) and 60D (25 fps)

Statistical Technique

Independent t-test technique was employed by the SPSS version 20. Level of significance was set at 0.05.

Results and Findings

Different types of descriptive statistic such as mean and standard deviation was computed to describe each variable statistically. Its results have been depicted in the following tables.

Table 1: The difference between Center of Gravity angle during running hand touch skill between Inter-University and Inter-College level Kabaddi players.

Group	N	Mean	SD	t-value
Inter-University Kabaddi Players	3	74.67	7.77	2.55
Inter-College Kabaddi Players	3	49.33	15.37	

Tabulated value at DF 4 = 2.78 *significant at 0.05 level

Table 1 shows the mean and standard deviation values with regard to Inter-University Kabaddi players is 74.67 ± 7.77 whereas in the case of Inter-College level Kabaddi players is 49.33 ± 15.37 respectively. The calculated value of 't' (2.55) which is less than the tabulated value of 't' (2.78) at .05 level. So, it demonstrates that there is an insignificant difference for center of gravity between Inter-University and Inter-College level Kabaddi players during the execution of running hand touch skill.

Table 2: The difference between Distance in both Feet in running hand touch skill between Inter-University and Inter-College level Kabaddi players.

Group	N	Mean	SD	t-value
Inter-University Kabaddi Players	3	124.7	27.99	1.88
Inter-College Kabaddi Players	3	86.27	21.71	

Tabulated value at DF 4 = 2.78 *significant at 0.05 level

Table 2 shows the mean and standard deviation values with regard to Inter-University Kabaddi players is 124.7 ± 27.99 whereas in the case of Inter-College level Kabaddi players is 86.27 ± 21.71 respectively. The calculated value of 't' (1.88) which is less than the tabulated value of 't' (2.78) at .05 level. So, it demonstrates that there is an insignificant difference for distance in both feet between Inter-University and Inter-College level Kabaddi players during the execution of running hand touch skill.

Discussion

The execution phase of Running hand touch skill had only analyzed in this study. There was no significant difference found in center of gravity and distance between both feet between Inter-University and Inter-College level Kabaddi players. It may be probably due to the reason that, any skill's competitive execution depends upon many of the other related factors. In this study the skill was performed in isolation (shadow technique: demonstration) which does not highlight other related factors.

Another reason may be that the skill performance may depend upon game specific situation of athlete which comprises of mental, technical and tactical composer, which were again missing due to execution of skill in isolation for elite and non-elite Kabaddi players.

Shen *et al.* (2010) also conducted a study on "Throwing Kinematics in Youth Pitchers and Field Players" and had revealed that, there was no significant differences in shoulder abduction angle at foot strike, maximum elbow flexion angle, shoulder abduction angle at ball release, trunk side-bending at ball release, and maximum velocity of shoulder horizontal adduction, shoulder internal rotation, upper and lower torso rotation, and elbow extension between the youth pitchers and field players. There were also no significant differences in body weight and height between the two groups. Running hand touch skill linear kinematic variables observed in this study were similar between youth pitchers and field players.

Conclusion

It was observed that there were insignificant differences between Inter-University and Inter-College level Kabaddi Players for their selected Linear Kinematical Variables i.e. Center of Gravity, Distance between both feet.

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