INTER RATER RELIABILITY OF FOOT WORK TEST AMONG AMATUER KABADDI PLAYERS

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ABSTRACT : Background: Kabaddi is a popular sport in Indian subcontinent. The game being a contact sport, demands good footwork skills of player which plays an important role during raiding as it is conducted by a single player. Footwork is measured by footwork test constructed for kabaddi. **Objective** To study inter rater reliability of footwork test among amateur kabaddi players. **Method** A total of 30 amateur kabaddi players were included in this study. Each participant's recorded performance of the footwork was scored independently by two raters. Performance was measured using footwork test for kabaddi. **Result** Cronbach's alpha coefficient for inter rater reliability was analysed. Intraclass correlation coefficient was calculated to determine inter rater reliability of footwork test. Inter rater reliability was good (0.88). **Conclusion** This research demonstrated that footwork test for kabaddi predominantly shows good inter rater reliability.

Key Words: Kabaddi, Footwork Test, Inter-Rater Reliability, Sports

I. INTRODUCTION

Kabaddi is a team contact sport which has originated in India.[1] Prerequisites for this game, are enormous agility, lung capacity, physical stamina, quick reflexes, neuro muscular co-ordination, individual proficiency, intelligence and requires equanimity of both attackers and defenders.[2]

During this game, players on the defensive side are called "Antis" while the player of the offense are called the "Raider".[3] The key feature of the game is raiding on the opponent's court, alternatively by both the team members. The uniqueness of this game is that, the defence is done with team work, whereas attack is made by only single player against a team. This attack is known as a raid. Offence is a sum total of raiding techniques and tactics, where footwork plays a major role. Since raid is a means to score more points, the offence part of the game is given prime importance in Kabaddi.[4]

A good raider should have the skill, tactics, counter-action ability to release himself from difficult situations, and most important, good footwork to score points.[3] Footwork in kabaddi is the movements made by the raider with his feet, during raiding. Factors affecting footwork are stance of the raider, body position, movement, speed, agility ,etc. A raider has to move quickly from one spot to the other during raid, complete his task and reach home safe. For this, he depends largely on footwork.[5]

Additionally, good footwork enables a raider to assess the situation quickly, plan his next move, escape injuries and will have the confidence to carry out the attack successfully. Also with good footwork, the raider can create a tough situation for defenders which will put them in confusion. Footwork differs depending upon the technique that can be utilized and from player to player.[6]

To evaluate footwork of kabaddi players, Footwork test has been designed by a study that constructed skill test for kabaddi which included following variables/test items i.e. Toe touch, Hand touch, Right grip strength, Left grip strength, Leg strength, Back strength, Foot work and Drag and Leg thrust. [7]

Another study constructed norms for kabaddi skill test which measured nine different skills namely foot work, reaction ability, raiding footwork, forward medicine ball throws, push ups, grip strength left, grip strength right, leg thrust, defensive foot work and breath holding capacity. The playing ability performance (overall performance) scores of the players were interpreted by using a grading scale on the basis of 7-sigma scale as based on the Hull Scale Norm, which was developed for all the 9 test items. Footwork is measured in seconds.[8]

Reliability of footwork test according to a study is 0.98.[9] But no previous studies have shown inter-rater reliability of footwork test. Thus, the present study aims at studying inter-rater reliability of footwork test among amateur kabaddi players.

Null hypothesis: Inter- rater reliability of foot work test is less among amateur kabaddi players

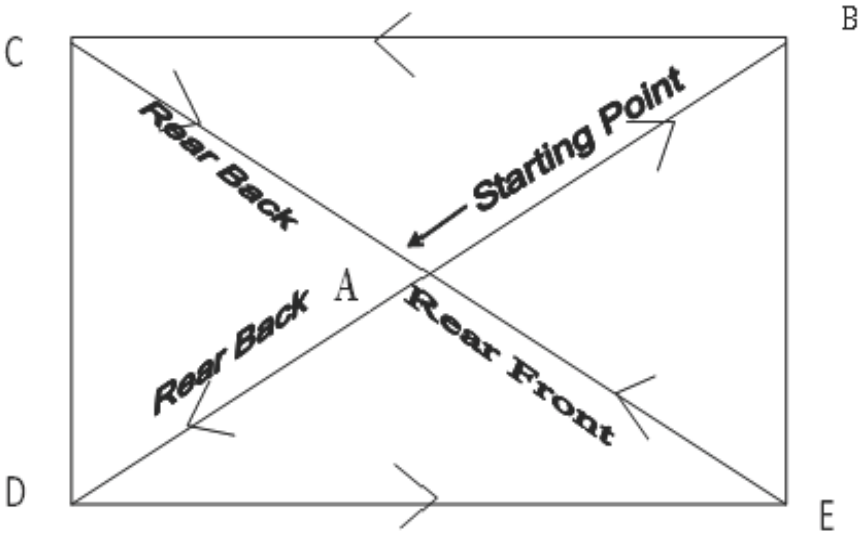
Alternative hypothesis: Inter- rater reliability of foot work test is high among amateur kabaddi players

II. MATERIALS AND METHOD

For the present study, a total number of 30 (both male and female) amateur kabaddi players with age group between 18-28 years from Parul University, India were included. Players willing to participate, playing kabaddi since 2 years were considered in inclusion criteria. Players having ankle injury/sprain, lower limb soft tissue injuries and fracture in last 6-12 months were excluded. Before conducting study, a written consent was taken from subjects and the entire research procedure follows principles given by Declaration of Helsinki.

III. PROCEDURE

Players were familiarized with testing procedure by physical demonstration. In this test, the player has to perform raid in prescribed path and the time taken while performing the test is noted in seconds. Test was performed on kabaddi court and in following manner.



Subject begins test from starting point (A) on command, moves towards point B in Rear Front, (Rear foot followed front foot).
From point B moves towards point C in sideward action from point C moves towards point A by using rear back action from point A moves towards point D by using Rear back action from point D moves towards to point E by using side ward action from point E moves towards point A by using Rear front action.[7] The subject should be given one trial practise. The subject should start with forward roll on the command of the tester, move towards each station. He should cover the circuit as early as possible in the shortest time. The watch is stopped when the subject finishes the circuit or reaches the starting point.[10]

Instructions: The subject has to take a standing start and follow the proper path to cover the entire distance. If a foul is committed, the subject has to repeat the entire exercise.[10]
Score: Time taken by the subject to complete the move was the final score and recorded in seconds.[7] Scoring of the test is given as per the following norms.

Grading scale for the Interpretation of Foot Work test Scores[8]

Grade	Evaluation	Alphabetical Grade
Excellent	Below 19.478	A
Good	19.479 to 22.572	B
Above Average	22.573 to 25.666	C
Average	25.667 to 31.854	D
Below Average	31.855 to 34.948	E
Poor	34.949 to 38.042	F
Very Poor	Above 38.043	G

Two raters participated in this study. The study was done on two consecutive days. On first and second day both rater 1 and rater 2 respectively recorded footwork performance of each participant and scored the performance independently.

IV. RESULTS

Statistical analysis was done using two-way random reliability test in SPSS(version 20.0).

As per Cronbach's alpha calculated for footwork test is 0.88 with mean of 22.87 and SD ± 1.54 and 22.67 with SD ± 1.78 . Inter rater reliability for this test is good as per following Cronbach's alpha. Cronbach's alpha $\alpha \geq 0.9$ is considered as excellent, $\alpha \geq 0.8$ is good, $\alpha \geq 0.7$ is questionable, $\alpha \geq 0.6$ is poor, $\alpha \geq 0.5$ is unacceptable.[11]

V. DISCUSSION

The result indicates that footwork test has good inter rater reliability. Foot work in kabaddi plays vital role during raiding and defensive activities. On account of which, footwork test was constructed. Also the use of this test is of interest not only for research purpose but also in educational and sport centers. The precision and reliability of foot work performance was studied in high school boys.[9]

To our knowledge, inter rater reliability of footwork test for kabaddi has not been previously studied. Hence, from scientific point of view it is of interest to know inter rater reliability of this test.

We studied mean difference measured by the two raters. The findings observed in this study indicate differences in mean time scored between the two raters were statistically significant. However, the differences were 0.2 second for footwork test.

A good reliability was observed between the two raters. In a prior study that carried out reliability and validity test for kabaddi offensive skills which also included footwork, which observed a good test-retest agreement for the same.[9] These findings together with those observed in this study suggest that Footwork test constructed for kabaddi has a good inter rater reliability.

Limitations: Study sample was small. Test was performed with only two raters.
Future recommendations: Study can be performed with a large sample size, with multiple raters and on elite kabaddi players.

VI. CONCLUSION

This research demonstrated that the foot work test shows good inter rater reliability. These findings indicate that footwork test could be used to assess the footwork performance of kabaddi players.

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