Analytic approach to video analysis on skill performance of Pro Kabaddi matches

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Abstract
Kabaddi is aptly known as the “Game of the Masses” due to its popularity, simple, easy to comprehend rules, and public appeal. The game calls for no sophisticated equipment what so ever, which makes it a very popular sport in the developing countries. The Pro Kabaddi League was first held in 2014; its founder, Charu Sharma, in prop Kabaddi India and foreign player are played together in a team and 25 players and featured in a squad. Since its inception in 2014, the Pro Kabaddi League has essayed its role as a feeder for Indian Kabaddi and has laid out a platform for some of the best talent all across the country to showcase their talent and even carve out a career for them “Video Analysis on Skill Performance of Selected National Pro Kabaddi Matches”. One forty four National level Pro Kabaddi male players were selected as subject for this study the subjects were selected from U Mumba, Jaipur Pink Panthers, Bangluru Bulls, Purni Paltan, Dabang Delhi, Telugu Titans, Bengal Warriors, Patna Pirates, Haryana Steelers, U.P. Yodha, Tamil Thalaivas and Gujarat Fortune giants teams. The captured video was uploaded in a desktop computer to measure the selected variables. The desktop computer with Windows 8 OS, i5 processor, 2 GB RAM and 500 GB hard disk was used to analyze the data. The Kinovea software version 0.8.15 was installed and the captured videos were analyzed by frame using tools available in the software. Kabaddi offensive and Defensive skills variables namely Hand Touch, Toe Touch, Squat thrust, Dubki, Lain Jump, Side Kick, Rolling, Back Kick and Bonus (offensive skills) and Defensive skills are Tackle, Block, Chain Tackle, Waist Hold, Ankkle Hold, and Thigh hold, Diving Ankkle Hold and Dash was calculated through the you tub and internet for each Skills. The final data were used to predict the Pro Kabaddi season wise matches Performance. Subjective rating of each team player is performance involves a panel of two expert Coaches and Research Scholar in the game of Kabaddi. The two expert Coaches and Research Scholar evaluated the player’s Kabaddi skills ability. Scores. The average of the two expert Coaches and Research Scholar rating was taken as a score.

Keywords: Pro Kabaddi matches, game of the masses, Charu Sharma

Introduction
Kabaddi is basically an Indian game, which requires both skill and power, and combines the characteristics of wrestling and rugby. Kabaddi is aptly known as the “Game of the Masses” due to its popularity, simple, easy to comprehend rules, and public appeal. The game calls for no sophisticated equipment what so ever, which makes it a very popular sport in the developing countries. Though it is basically an outdoor sport played on clay court, of late the game is being played on synthetic surface indoors with great success. The duration of the game is 45 minutes for men & junior boys with a 5 minute break in between for the teams to change sides. In the case of women & sub junior boys, the duration is 35 minutes with a 5 minute break in between. The Pro Kabaddi League was first held in 2014; its founder, Charu Sharma, was influenced by the popularity of the Kabaddi tournament at the 2006 Asian Games, which utilized an indoor version of the game played on a court. Sharma cited the Indian Premier League as an influence on the overall formatting of the competition, noting that "mere sport works well [in India], but if you package it better, it works better." The PKL uses a franchise-based model; the league began with eight teams, each of which having paid fees of up to US$250,000 to join. There were doubts over whether the PKL would be successful, noting that there were many leagues attempting to emulate the IPL's business model and success, and that unlike cricket, there were relatively fewer well-known players in Kabaddi.
However, it was also noted that Kabaddi was widely played in grassroots community settings, and could thus attract a wide variety of rural and metropolitan viewers for advertisers to target if the league gained significant traction. The inaugural season was seen by a total of 435 million viewers, placing it just behind the total-season viewership of the 2014 Indian Premier League season, while the inaugural championship was seen by 86.4 million viewers. Star Sports, the PKL’s broadcaster, subsequently announced in 2015 that it would acquire a 74% stake in the league’s parent company Marshal Sports. For the 2017 season, the PKL added four new teams, and changed its format to split the teams into two divisions known as “zones.”

Statement of the Problem
The purpose of the study was to find out the “Video Analysis on Skill Performance of Selected Pro Kabaddi Matches”.

Objectives of the Study
1. The study was aimed to Video Analysis among the Pro Kabaddi National Players of various teams of India.
2. The study was aimed to Video Analysis Variables among the offensive and Defensive Skills Performance of various Pro Kabaddi teams of India.

Hypothesis
1. It was hypothesis that there is significant difference in the Video analysis of skill Performance of Selected Pro Kabaddi Matches.
2. It was hypothesis that there is significant difference in the offensive and defensive Skills Performance among Pro Kabaddi players of various teams.

Limitation of the Study
Certain factors like daily routine, life style, diet, socio-economic status, initial fitness level and the training age of the subjects, which might have influenced their Video Analysis on skill Performance of Selected Pro Kabaddi Matches were considered as one of the limitation of this study.

Delimitations of the study
1. The Study was delimited to a total of 144 male players in the game Pro Kabaddi from different teams.
2. The study was further delimited to the players of U Mumba, Jaipur Pink Panthers, Bengaluru Bulls, Puneri Paltan, Dabang Delhi, Telugu Titans, Bengal Warriors, Patna Pirates, Haryana Steelers, U.P. Yodha, Tamil Thalaivas and Gujarat Fortune giants teams.

Review of related literature
Andrew Hutcheon (2021) an analysis of the impact of technology-enhanced video feedback and peer evaluation on gymnastic performance in a MYP IB Physical Education class. A 5-step inquiry action research framework was employed;
Vandana Arak (2020) Game Kabaddi is played with seven players inside the court. Player, who is called as a raider is supposed to enterin opposite team’s area to tag them and get the point, and at the same time, opposite team players try to stop or hold the player within their boundary to get the point. Changes in the rules of the kabaddi game in Pro Kabaddi League had increased the popularity of the game also;
F. Potdevina, O. Vorsb, A. Huchez, M. Lamoura, K. Davids d and C. Schnitzler (2018) much of the existing research concerning the use of video feedback (VFB) to enhance motor learning has been undertaken under strictly controlled experimental conditions.
Dr. C. Durai (2016) the purpose of the study was to find out the effect of visual feedback on volleyball skills among physical education students. To achieve the purpose of the study, fifteen (n=15) men volleyball players from various department of Manonmaniam Sundarar Nathan, Tirunelveli, Tamil Nadu, Carlos Merino Campos, Héctor Del Castillo Fernández (2016) this article sets out to conduct a systematic review of the current literature on active video games as potential educational tools for physical education or physical activity. To begin with, research on active video games for educational and physical purposes has been examined with the purpose of verifying improvement of attitudes, intellectual skills, knowledge, motor skills and physical properties associated with physical activity and physical education.

Methodology
Selection of subjects
The purpose of the study was to find out the “Video Analysis on Skill Performance of Selected National Pro Kabaddi Matches”. One forty four National level Pro Kabaddi male players were selected as subject for this study the subjects were selected from U Mumba, Jaipur Pink Panthers, Bengaluru Bulls, Puneri Paltan, Dabang Delhi, Telugu Titans, Bengal Warriors, Patna Pirates, Haryana Steelers, U.P. Yodha, Tamil Thalaivas and Gujarat Fortune giantsteam The age level of the subjects ranged from 20 to 40 years.

Selection of variables
The research scholar went through the scientific literature pertaining to the Video analysis of skill Performance of Selected National Pro Kabaddi Matches different sources and also consulted the experts in these areas. Along with the said literature and expert opinion, the administrative feasibility in terms of availability of instruments and expertise measuring and recording of data was also given due consideration while selecting Kabaddi offensive and Defensive Skills and season wise matches Performance, Hence, the following variables were selected for this study:

Independent Variables
Offensive Skills
Hand Touch, Toe Touch, Squat thrust, Dubki. Lain Jump, Side Kick, Rolling. Back Kick and Bonus (offensive skills) and

Defensive skills
Are Tackle, Block, Chain Tackle, Waist Hold, Ankle Hold, and Thigh hold, Diving Ankles Hold and Dash.

Dependent Variable
Pro Kabaddi season wise Selected Matches Skill Performance.

Seasons one to Sixth Seasons Selected teams
U Mumba, Jaipur Pink Panthers, Bangluru Bulls, PuneriPaltan, Dabang Delhi, Telugu Titans, Bengal Warriors, Patna Pirates, Haryana Steelers, U.P.Yodha, Tamil Thalaivas and Gujarat Fortune giants.

Collection of data
The captured video was uploaded in a desktop computer to
measure the selected variables. The desktop computer with Windows 8 OS, i5 processor, 2 GB RAM and 500 GB hard disk was used to analyze the data. The KINOVEA software version 0.8.15 was installed and the captured videos were analyzed by frame using tools available in the software.

Administration Procedure

Subjective rating of each team player is performance involves a panel of two expert Coaches and Research Scholar in the game of Kabaddi. Evaluated the player’s ability for whole match Scores. The average of the two expert Coaches and Research Scholar rating was taken as a score. The number of total score from each team and each selected matches Kabaddi Offensive and Defensive Skills Uses total scores was measured.

Statistical Technique

To Analysis the data of selected Video Analysis on Skill Performance of Selected National Pro Kabaddi Matches among National Pro Kabaddi Players, Descriptive statistics to find out the mean and standard deviation, Frequency and Percentages was applied. The Statistical Package for Social Sciences (SPSS, Version 16.0. for Windows XP) was used to analyze the data. An alpha level of 0.05 was used to determine statistical significance.

| Table 1: Shows in offensive skills and defensive skills |
|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Offensive Skills | M1 | M2 | M3 | M4 | M5 | M6 | M7 | M8 | M9 | M10 | Mean Score | Total Score | Standard Deviation |
| Hand Touch       | 13 | 15 | 13 | 12 | 10 | 9 | 9 | 12 | 10 | 10 | 11.3 | 113 | 2.00 |
| Toe Touch        | 11 | 9 | 7 | 9 | 8 | 7 | 10 | 10 | 7 | 8 | 8.6 | 86 | 1.42 |
| Squat thrust     | 10 | 10 | 9 | 11 | 11 | 9 | 9 | 9 | 6 | 10 | 9.4 | 94 | 1.42 |
| Dubki            | 2 | 1 | 3 | 2 | 2 | 2 | 2 | 3 | 3 | 2.2 | 22 | 0.63 |
| Lain Jump        | 1 | 2 | 1 | 2 | 3 | 2 | 1 | 2 | 1 | 2 | 1.7 | 17 | 0.67 |
| side Kick        | 5 | 8 | 10 | 7 | 11 | 5 | 5 | 7 | 4 | 8 | 7 | 70 | 2.30 |
| Roll Kick        | 8 | 7 | 8 | 6 | 8 | 6 | 6 | 8 | 9 | 8 | 7.4 | 74 | 1.07 |
| Back Kick        | 5 | 4 | 4 | 6 | 7 | 7 | 6 | 5 | 4 | 6 | 5.4 | 54 | 1.17 |
| Bonus            | 11 | 9 | 10 | 8 | 10 | 11 | 9 | 9 | 8 | 11 | 9.6 | 96 | 1.17 |
| Defensive Skills |         |         |         |         |         |         |         |         |         |         |         |         |         |
| Hold             | 10 | 9 | 10 | 9 | 11 | 10 | 8 | 8 | 9 | 9.5 | 95 | 1.08 |
| Block            | 9 | 7 | 7 | 7 | 9 | 9 | 8 | 6 | 8 | 7.9 | 79 | 1.10 |
| Chain Hold       | 11 | 14 | 11 | 13 | 11 | 8 | 7 | 8 | 10 | 8 | 10.1 | 101 | 2.33 |
| Waist Hold       | 6 | 6 | 6 | 6 | 8 | 6 | 5 | 5 | 7 | 6.2 | 62 | 0.91 |
| Ankle Hold       | 14 | 13 | 9 | 13 | 12 | 11 | 9 | 10 | 8 | 10 | 10.9 | 109 | 2.02 |
| Thigh hold       | 8 | 6 | 5 | 7 | 5 | 6 | 7 | 6 | 10 | 4 | 6.4 | 64 | 1.71 |
| Diving Ankle Hold | 2 | 4 | 1 | 2 | 3 | 2 | 2 | 1 | 3 | 1 | 2.1 | 21 | 0.99 |
| Dash             | 9 | 14 | 10 | 12 | 9 | 9 | 8 | 9 | 7 | 7 | 9.4 | 94 | 2.17 |

<table>
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Fig 1: Offensive skills

Fig 2: Defensive skills
Conclusions
Kabaddi offensive and Defensive skills variables namely Hand Touch, Toe Touch, Squat thrust, Dubki. Lain Jump, Side Kick, Rolling. Back Kick and Bonus (offensive skills) and Defensive skills are Tackling, Block, Chain Tackle, Waist Hold, Ankle Hold, and Thigh hold, Diving Ankle Hold and Dash Pro Kabaddi season wise matches Skills Performance. Offensive skills performances are more uses in all Season matches in comparison with Defensive Skills Performances.

References