

INTRODUCTION

Quad Rugby is a sport developed by and for athletes with a combination of upper and lower extremity impairment. The game is played in wheelchairs on a basketball court (4 x 8 min). Teams are made up of four players which have roles based upon their classification (.5 least mobile to 3.5 most mobile). The main goal of the game is to carry, pass or bat volleyball on the court in order to score by carrying the ball over the goal line. A ball carrier must pass or bounce the ball every ten seconds and chair to chair contact is encouraged, with or away from the ball. Lower point players need to set up the play by screening or picking so that higher point players have more room to carry the ball. Even though Quad Rugby has been played over two decades and it is a paralympic sport no studies have been reported in which the actual actions of the game have been described. Furthermore, it has been suggested that objective analysis of the game actions should serve as the basis for future planning in any coaching process [1]. Therefore the purpose of this study was to analyze five Quad Rugby matches, played in ASTRA TECH-tournament in Sweden, in order to give an objective and more detailed description of the game.

METHODS

A total of five elite Quad Rugby matches of an international tournament were videotaped and analyzed with SAGE Game Manager for Soccer analysis software. The core elements of any analysis system; player, position and action were coded and the time of every action was updated [1].

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Figure 1. "Murder ball" game situation.

The means and SDs were calculated for total and effective playing time, distance covered, goals scored, total number and successful percentages of blocks, offensive actions (passes, receives and dribbles), defensive actions (interceptions and steals) and restarts. For a more detailed description of the game players were classified into four categories according to their functional abilities: class 1 (0.5 points), 2 (1-1.5 points), 3 (2-2.5 points) and 4 (3-3.5 points).

RESULTS

The total duration of one match was on the average 67.48 ± 5.10 min including intervals (7 min) between quarters. The average length of one quarter (time-outs excluded) was 13.42 ± 1.46 min from which 63.4% was effective. The analysis revealed that 73 ± 18 goals were scored and 1006 ± 93 other actions were coded in one match. The relative distance covered by the ball was 1417 ± 258 m. The most common with-the-ball events were related to dribbling (27%), receiving (24%), passing (14%) and restarting play (10%). Offensive and defensive blocks constituted 22% of all actions and defensive actions 3%. The corresponding successful percentages were highest in dribbling (97.2%) and lowest in attempts to steal the ball (48.1%) from the opponent (figures 2,3).

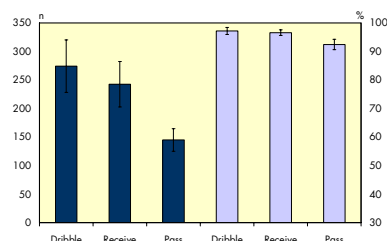


Figure 2. The total number of selected actions and corresponding successful percentages.

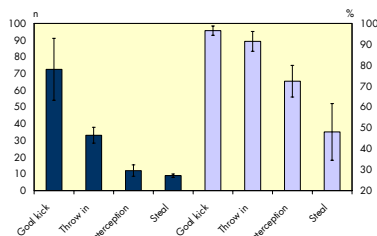


Figure 3. The total number of selected actions and corresponding successful percentages.

A total of 55 players were divided into 4 classes as presented in table 1.

Table 1. The means and SDs of selected actions in different categories in one match.

Class	Players n	Assist passes	Goals	Total
1	6	.4 (.5)	.2 (.4)	12.1 (6.1)
2	17	2.6 (3.5)	2.6 (3.8)	41.3 (36.8)
3	19	6.3 (4.5)	7.2 (5.3)	87.6 (49.4)
4	13	7.2 (5.2)	6.6 (5.7)	82.3 (53.4)

A significant difference between the classes was found in the average number of assist passes ($F = 5.96$, $p < .01$) goals scored ($F = 5.39$, $p < .01$) and total actions ($F = 6.78$, $p < .01$) (table 1).

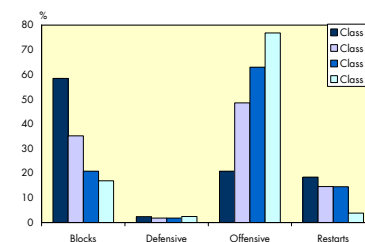


Figure 4. The percentages of selected actions in different classes.

Players' performance varied according to their functional resources (figure 4). Lower point players were less active mainly executing blocks whereas higher point players made most of the with-the-ball actions.

DISCUSSION

In Quad Rugby possession of the ball is usually gained from restarts after goals or regular passes and lost crucially after different types of technical faults (individual/team) or unsuccessful passes. Interceptions and steals have also an important role in the game usually ending up to scoring. Furthermore, the results indicate that the game performance of elite Quad Rugby players is class-dependent. Future studies should concentrate on examining the physical loading of the players in order to get a more complete picture of the game.

REFERENCES

[1]. Hughes, M. and Franks, I. (2004) *Notational Analysis of Sport*. London, Taylor & Francis Group.

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