

**CHARACTERISTICS OF WHEELCHAIR BASKETBALL FALLS DURING THE TOKYO
2020 PARALYMPICS BY SEX AND PHYSICAL IMPAIRMENT CLASSIFICATION
A VIDEO-BASED OBSERVATIONAL STUDY**

Department of Sports Rehabilitation D215575 Shogo Tsutsumi

Background: Wheelchair basketball is a para-sport in which players compete for the ball and try to score points, and it involves contact between wheelchairs. It has been shown that 11.9 falls involving contact occurred per game in wheelchair basketball, but no analysis has taken into account the type and level of disability. This study aimed to identify falls that occur during wheelchair basketball games by functional impairment and to help prevent injuries.

Methods: This was a video-based observational study. In total, 42 men' and 31 women's wheelchair basketball game videos were obtained from the official International Paralympic Committee. Functional impairment was divided into two groups based on the classifying score: 2.5 points or less as Low pointer and 3.0 or more as High pointer. The videos were analyzed to assess the number of falls, playing time of the fall, playing phase, contact, foul judgment, fall location/direction, and the body part that first impacted the floor.

Results: A total of 1,269 falls (men, n = 944; and women, n = 325) occurred. Comparisons between low and high pointer showed significant differences for men in rounds, playing phase, location of the fall, and body part first impacted. Women demonstrated significant differences in all categories except in rounds. Comparisons by functional impairment showed different trends for men and women.

Conclusion: The detailed observation of videos suggested that men are more likely to have dangerous falls. In addition, the fact that the characteristics of falls in wheelchair basketball differed according to the classifications made it clear that it is necessary to consider countermeasures against falls of wheelchair basketball athletes in each class for men and women, respectively.