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剣道競技における打突動作の左下肢技能特性

(Characteristics of left lower extremity skills of striking motions in kendo)

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Abstract

Background, Study purpose: Kendo competition (hereinafter, omitted kendo) is two players faces each other with shinai in the prescribed playing field. Moreover, kendo is a one-on-one competition that acquire [Yukoudatotsu “Ippon”] while repeat the offense and defense each other under the external environment that always changes where is a opponent. The base of the movement during the striking motion is the kicking-out action by the left lower limbs. The purpose of this study was clarify the characteristics of left lower limb movement skill in interpersonal striking motion.

Method:20 male kendo players participated in an experiment. 10 male kendo players are assigned advanced level group, while the other 10 male kendo players are intermediate level group. The study install a cooperator as a person of cover blow and let the cooperator exhibit a blow part. The cooperator acted 2 motion subject of Shou-men and Debana-men in study. The data was collected using 10 exclusive cameras of the motion capture system(360fps, prime17W, Opti Track puroduct made in company). The analysis of the movement is from the movement beginning of the participant to the moment when a Shinai contacted the blow part of the cooperator. The analysis items are total operating time, Blow time, Center of gravity movement time, the analysis items of center of gravity movement(Movement distance, Displacement to the vertical direction, Maximum velocity), Movement completion time of debana-men acquirement, Average appearance time of the movement beginning of the participant in debabna-men acquirement , Appearance opportunity of debana-men acquirement, Displacement of left knee angle and left ankle angle, Change aspect of center of gravity point and left lower limb joint angle. Significance level was set at .05 for the whole analysis.

Results: Debana-men showed the value that was smaller than Shoumen in Movement time, Movement distance, Maximum velocity, Knee angles displacement and Ankle angles displacement from the maximum flexure to the maximum extension. Moreover, Debana-men showed the value that was bigger than Shou-men in Ankle angles displacement from the movement beginning to the maximum flexure. About proficiency, upper grade group showed the value that was bigger than intermediate group in Movement time, Movement distance, Ankle angles displacement from the maximum flexure to the maximum extension. A difference was not seen in other analysis items. About appearance time for movement beginning of subjects and average of the movement completion time in debana-men, it was shown in the study of debana-men that upper grade group has begun to move earlier than a cooperator. Moreover, intermediate group has begun to move after a cooperator. Upper grade

group was shown to have a short movement completion time of debana-men than intermediate group when it was based on movement beginning of cooperator.