

Evaluation of the Isokinetic Strength of the Knee Joint of Vietnamese Elite Futsal Players

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Futsal players have a higher injury rate than football players. Knee injuries are one of the most serious injuries, greatly affecting sports performance and career life. The main aim of this study was to investigate knee isokinetic strength and H/Q ratio in elite Vietnamese futsal players. A cross-sectional research design was used to conduct the study. Eighteen Vietnamese elite male futsal players (20.79 ± 3.18) were isokinetically assessed to examine the strength of the knee on an isokinetic dynamometer (Biodex Medical Systems Inc., Shirley, NY, USA). The players were selected from the professional Futsal team Thai Son Bac (Vietnam), in the 2020 National Futsal Championship season. The testing protocol required players to perform concentric contractions of both quadriceps and hamstring muscles at angular velocities of 600.s⁻¹ and 2400.s⁻¹. Conventional hamstrings/quadriceps (H/Q) ratios were calculated. In the dominant leg, the knee extension movement had peak torque values at two speeds of 600.s⁻¹ and 2400.s⁻¹, respectively 214.39 ± 13.88 Nm and 117.07 ± 10.87 Nm. The ratio of hamstring/quadriceps to dominant leg strength is 44.93 ± 10.09 . The average values of peak torque and H/Q ratio of the athletes were lower than those recommended by the Biodex Multi-Joint System, Clinical Resource Manual (2009) criteria. Vietnam's elite futsal players have moderate and low isokinetic strength values. The hamstring/quadriceps ratio is lower than the published standard values, which increases the risk of injury.

Keywords: Risk of Injury, H/Q Ratio, Asymmetry