ABSTRACT

Background: Anterior cruciate ligament injury is higher in soccer athletes as compared to athletes of other sports. Risk factors for anterior cruciate ligament injury include low knee hamstring/quadriceps strength ratio and bilateral strength deficits.

Purpose: To investigate isokinetic thigh muscles strength, hamstring/quadriceps strength ratio, and bilateral strength comparisons in athletes who participate in professional soccer, futsal, and beach soccer.

Study Design: Cross-sectional study.

Methods: Brazilian professional soccer (n=70), futsal (n=30), and beach soccer (n=12) players were isokinetically assessed to examine strength of knee extensors and flexors at 60 degrees/second in concentric mode, to measure peak torque of dominant and non-dominant limbs.

Results: In the dominant limb, for extensors muscles, futsal players presented significantly lower peak torque values (223.9±33.4 Nm) than soccer (250.9±43.0 Nm; p=0.02) and beach soccer players (253.1±32.4 Nm; p=0.03). Peak torque for extensor muscles in the non-dominant limb was significantly lower in futsal (224.0±35.8 Nm) than in beach soccer players (256.8±39.8 Nm; p=0.03). Hamstring/quadriceps strength ratio for dominant limbs for futsal (57.6±10.1%), soccer (53.5±8.8%), and beach soccer (56.3±8.4%) players presented no significant differences between groups; however, the mean values were lower than recommended values found in the literature. There were no strength deficits for any of the evaluated groups when compared bilaterally.

Conclusions: Futsal athletes presented lower values for quadriceps strength than soccer and beach soccer athletes. Futsal, soccer, and beach soccer players presented no strength asymmetries, but they presented with strength imbalance in hamstring/quadriceps strength ratio.

Level of Evidence: 3

Key words: injury; isokinetic; muscle strength; performance; soccer