ABSTRACT

Background: Physiological capacities are continuously developed throughout childhood and adolescence enhancing physical performance, but the years of formal training also contribute to performance improvements seen in young athletes. Thus, identifying the variables that may predict performance in young athletes is important for monitoring and planning the season.

Purpose: This study aimed to identify the predictors of judo-specific performance tasks from neuromuscular tests in young judo athletes.

Study Design: Cross-sectional study

Methods: Ninety-four young judo athletes: 28 girls and 66 boys (aged 11–16 years) participated in the study. Athletes performed the following neuromuscular assessments: the standing long jump (SLJ), the seated medicine ball throw (MBT) and the measurement of handgrip strength (HGS). They also performed judo-specific tests including the Special Judo Fitness Test (SJFT) and Judogi Grip Strength Test (JGST). Pearson's linear correlation and a multiple linear regression were used with the level of significance at p<0.05.

Results: The main results showed correlations between all neuromuscular tests and the number of throws and index obtained in the SJFT for boys (r=0.35–0.54, p<0.05) and girls (r=0.41–0.47, p<0.05). Additionally, the JGST performance was correlated with HGS (r=0.48, p<0.01) and the MBT (r=0.38, p=0.013), but only in boys. The SLJ and HGS predicted close to 30% of the variance in the SJFT performance (p<0.001).

Conclusion: Strength and power in upper and lower limbs are related to judo-specific tasks in young judo athletes and can moderately predict the performance in SJFT performance.

Levels of Evidence: 2b

Keywords: adolescents, judo, physical performance, handgrip strength, muscle power.

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