ABSTRACT

Purpose/Background: Despite the availability of various field-tests for many competitive sports, a reliable and valid test specifically developed for use in men’s gymnastics has not yet been developed. The Men’s Gymnastics Functional Measurement Tool (MGFMT) was designed to assess sport-specific physical abilities in male competitive gymnasts. The purpose of this study was to develop the MGFMT by establishing a scoring system for individual test items and to initiate the process of establishing test-retest reliability and construct validity.

Methods: A total of 83 competitive male gymnasts ages 7-18 underwent testing using the MGFMT. Thirty of these subjects underwent re-testing one week later in order to assess test-retest reliability. Construct validity was assessed using a simple regression analysis between total MGFMT scores and the gymnasts’ USA-Gymnastics competitive level to calculate the coefficient of determination ($r^2$). Test-retest reliability was analyzed using Model 1 Intraclass correlation coefficients (ICC). Statistical significance was set at the $p<0.05$ level.

Results: The relationship between total MGFMT scores and subjects’ current USA-Gymnastics competitive level was found to be good ($r^2 = 0.63$). Reliability testing of the MGFMT composite test score showed excellent test-retest reliability over a one-week period (ICC = 0.97). Test-retest reliability of the individual component tests ranged from good to excellent (ICC = 0.75-0.97).

Conclusions: The results of this study provide initial support for the construct validity and test-retest reliability of the MGFMT.

Key Words: Functional measurement, gymnastics, physical abilities

Level of Evidence: Level 3