GNYACSM Abstract

Mobility and Strength Profile for Division I Men's Basketball Players with Prior Lower Extremity Injury

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ABSTRACT

Descriptive profiles provide a means to compare joint mobility and strength across athletic populations, often helping to identify areas of weakness in individuals following prior injury. However, research using these profiles to compare athletes with and without past lower extremity injuries (LEIs), such as in basketball, remains limited. **PURPOSE**: The purpose of this study was to analyze differences in the descriptive profiles among collegiate male basketball players who did (YLEI) or did not (NLEI) self-report lower extremity injuries within the past 12 months. **METHODS**: During pre-season testing, ten Division I male basketball players fell into the NLEI group (20.7 ± 1.6 y, 193.0 ± 11.7 cm, 204.4 ± 34.3 lbs) and four players were assigned to the YLEI group (19.8 ± 1.5 y, 189.2 ± 4.3 cm, 194.8 ± 11.3 lbs). Each group had respective profiles created for the following measures. Hip range of motion (ROM) was assessed through passive internal (IR) and external rotation (ER). Ankle dorsiflexion (DF) was measured in a half-kneeling position, guiding the front knee over the foot while maintaining heel contact. Both hip and tibial angles were measured using the clinometer instrument. Hip abduction (ABD) and adduction (ADD) strength were measured using a handheld dynamometer recorded in kg. Thoracic rotation (TR) was evaluated with a goniometer for both active and passive rotation. Non-countermovement vertical jump (VJ), Y-balance (YB), and the sit-and-reach (SR) tests followed standard protocols. Descriptive statistics were calculated as mean ± standard deviation, and the difference between YLEI and NLEI were examined using independent t-tests with an alpha significance level of $p < 0.05$. **RESULTS**: The NLEI group had significantly greater left hip IR (49.6 ± 9.7° vs 35.3 ± 9.1°, $p = 0.026$), significantly lower DF on the left ankle (29.1 ± 4.2° vs 34.8 ± 3.4°, $p=0.035$). **CONCLUSION**: The descriptive profiles analysis found that the NLEI group showed significantly greater left hip IR and the YLEI group showed significantly greater left ankle DF. Trends were observed in VJ, YB, and SR test performance showing higher values in the NLEI group, though not statistically significant. These trends may be worth further investigation. The small sample size may have contributed to the lack of statistical significance in some findings.