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TECHNICAL NOTE

Intrarater Test-Retest Reliability of Static and Dynamic Stability Indexes Measurement Using the Biodex Stability System During Unilateral Stance

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The measurements of postural balance often involve measurement error, which affects the analysis and interpretation of the outcomes. In most of the existing clinical rehabilitation research, the ability to produce reliable measures is a prerequisite for an accurate assessment of an intervention after a period of time. Although clinical balance assessment has been performed in previous study, none has determined the intrarater test-retest reliability of static and dynamic stability indexes during dominant single stance. In this study, one rater examined 20 healthy university students (female = 12, male = 8) in two sessions separated by 7 day intervals. Three stability indexes—the overall stability index (OSI), anterior/posterior stability index (APSI), and medial/lateral stability index (MLSI) in static and dynamic conditions—were measured during single dominant stance. Intraclass correlation coefficient (ICC), standard error measurement (SEM) and 95% confidence interval (95% CI) were calculated. Test-retest ICCs for OSI, APSI, and MLSI were 0.85, 0.78, and 0.84 during static condition and were 0.77, 0.77, and 0.65 during dynamic condition, respectively. We concluded that the postural stability assessment using Biodex stability system demonstrates good-to-excellent test-retest reliability over a 1 week time interval.

Keywords: posture, steadiness, unipedal, reproducibility, computed posturography

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