ABSTRACT

Background: There has been an increased emphasis placed on outcome measures in healthcare recently. This emphasis, coupled with a limited amount of clinically meaningful upper extremity closed-kinetic chain performance-based measures, has led to the development of the Upper Quarter Y-Balance Test (YBT-UQ). Current literature has reported the established reliability of the test-retest and inter-rater reliabilities of the YBT-UQ, but not the intra-rater and inter-rater reliability of limb length (LL) measurement and trial error assessment (assessing whether a subject committed an error during the trial thus negating the results of that trial). These components are important to the output of the measure and therefore need to be examined.

Purpose: To examine the intra-rater and inter-rater reliability of LL measurement and trial error assessment for the YBT-UQ.

Study Design: A test-retest design was utilized to evaluate reliability.

Methods: A convenience sample of healthy college students had their right upper extremity LL measured and performed the YBT-UQ in order to establish intra-rater and inter-rater reliability of LL measurement and YBT-UQ trial error assessment. LL was measured from the C7 spinous process to the distal end of the third digit of the right hand per protocol for the YBT-UQ. Two YBT-UQ practice trials were performed for each stance hand followed by three trials for each stance hand. The trial reach measurements were recorded by each rater. A video recording device was used to record each trial and the video was viewed by each rater for trial error assessment.

Results: The Intraclass Correlation Coefficient (ICC) values for intra-rater reliability for LL measurements were 0.986, 0.987, and 0.990 for each of the three raters respectively, indicating excellent reliability. The ICC value for inter-rater reliability for LL measurements was 0.990, also indicating excellent reliability. Trial error assessment intra-rater reliability Kappa values were 0.917, 0.869, and 0.951 for each of the three raters respectively, indicating very good agreement. The Kappa value for trial error assessment for all three raters, collectively, was 0.658 for the first assessment of trial errors and 0.643 for the second assessment of trial errors, indicating good agreement between raters for each assessment of trial errors.

Conclusion: The YBT-UQ demonstrates a high degree of reliability in measurement of LL and agreement regarding trial errors assessment on the population studied.

Levels of Evidence: 2b

Key Words: Movement System, outcome measure, upper extremity performance, upper quarter Y-Balance Test

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The authors of this study have no conflicts of interest to report.