THE EFFECT OF TRAINING ON NOVICE RATERS WHEN PERFORMING RADIOGRAPHIC MEASUREMENT OF HUMERAL RETROVERSION: A FOLLOW-UP STUDY.

RD Christensen, DM Grambo, EN Ingram, LM Menezes, CJ Cieminski

BACKGROUND AND PURPOSE: Humeral retroversion angle (HRVA) is the angle between the proximal humeral axis and the distal humeral axis. CT scans are recognized as the gold standard for measuring HRVA, although current literature is investigating the use of radiographs as a more cost-effective method. The purpose of this study was to determine if there was a training effect in the ability to measure HRVA on radiographs by physical therapy students.

METHODS AND MATERIALS: Four second-year Doctor of Physical Therapy students measured HRVA on 35 shoulder radiographs on two separate occasions at St. Catherine University using a randomized-control design. The trained group received from an experienced HRVA investigator written and verbal instructions at practice sessions. The untrained group was provided only written instructions. The experienced HRVA investigator served as the gold standard. A standard goniometer was used to measure the HRVA on radiographs. IRB approval was granted by the University of Minnesota in a previous study and subjects’ identifying information was not accessible to the researchers. No funding was utilized in this study.

ANALYSES: Interclass correlation coefficients (ICC) were utilized to determine inter-rater and intra-rater reliability.

RESULTS: There was minimal difference in the HRVA measurements between trained and untrained groups with both groups demonstrating excellent intra-rater reliability. In addition, the inter-rater reliability between the trained and untrained groups in comparison to the experienced clinician was also minimal.

CONCLUSION: Novice physical therapy students can accurately measure HRVA on radiographs with written instruction and no other formal training.

IMPLICATIONS: This study demonstrates the potential to further incorporate radiographic information into clinical practice. Since no other formal training is needed to measure the HRVA, these results lend support to the APTA’s Vision 2020 for physical therapists to become autonomous practitioners and expand the physical therapy scope of practice.