

# Test-Retest and Inter-rater Reliability of Commonly Used Outcome Measures in Individuals with Severe Chronic Hemiparesis: A Pilot Study

PHTH 653: Research Symposium

Sandy A. Ross, PT, DPT, MHS, PCS

Crystal Rippee, SPT

Tim Kim, SPT

Kerri Flaugh, SPT

Kelly Brooks, SPT

Faculty Advisor: Joni Barry PT, DPT, NCS

## Abstract

**Background and Purpose:** Given the increasing number of American citizens affected by stroke and the associated life long effects, it is essential to have reliable outcome measures to determine the effectiveness of rehabilitation techniques. However, there is no research on the test-retest reliability of severe, chronic hemiparesis in upper extremity function over a two-week time period without intervention, as measured by the Stroke Impact Scale (SIS), Baseline Hand-Held Dynamometer, Box and Block Test and the Action Research Arm Test (ARAT). Therefore, the primary aim of this study was to determine the test-retest reliability of the SIS, grip strength dynamometer, Box and Block Test and the ARAT in individuals with severe, chronic hemiparesis due to stroke. It was hypothesized that participants with severe, chronic hemiparesis would have strong correlations when the four outcome measures were retested two weeks later. The secondary aim was to establish the inter-rater reliability of the Box & Block Test and ARAT between an experienced clinician and a student of physical therapy. It was expected that the inter-rater reliability would also have a high correlation.

**Subjects:** Five participants took part in the research study that presented with severe, chronic hemiparesis involving the upper extremity due to stroke. Participants ranged in age from 44-72 ( $\mu = 59$  y/o).

**Methods:** A non-experimental, analysis of relationships and repeated-measures design was performed on a sample of convenience. The study examined test-retest reliability in individuals with severe, chronic hemiparesis due to stroke, over two weeks. Inter-rater reliability of the Box & Block Test and ARAT was established on day one of testing. The tests were administered and scored by an experienced clinician, while rated by a student of physical therapy. Raters were blinded to scores of the performance.

**Results:** *pending* ☺

**Conclusion and Discussion:** The results of this study will influence phase two of this investigation, an intervention study using the same inclusion/exclusion criteria and outcome measures. The purpose of the second phase will be to determine the rehabilitation potential of the SaeboFlex® orthosis when compared to a control group receiving traditional physical therapy treatment.