

Jumper J, Bird M, Cleveland J, Faber M, Johnston M, Roberts M. USING THE RECOGNISE LATERALITY APPLICATION TO PREDICT HOEHN AND YAHR STAGE ON THE UNIFIED PARKINSON'S DISEASE RATING SCALE. Hardin-Simmons University Department of Physical Therapy, Abilene, TX.

PURPOSE: (1) To utilize performance on the Recognise Laterality application to predict the stage of Parkinson's Disease (PD) on the Hoehn and Yahr scale of the Unified Parkinson's Disease Rating Scale (UPDRS); (2) To compare the degree of difficulty with left-right discrimination of patients with PD as compared to control subjects; and (3) Evaluate interrater reliability between an experienced researcher and a student researcher on the UPDRS. **METHODS:** Ten subjects were recruited from the Abilene Parkinson's Support group (n=10, mean age 67.2 ± 6.36) with eleven age matched adults (n=10, mean age 65.8 ± 7.61). One age matched adult's score and age were not calculated into our results to obtain a closer mean age between the groups. Subjects with PD completed the motor section of the UPDRS with a student researcher and then with an experienced researcher. Each patient with Parkinson's Disease was given a Hoehn and Yahr score by a student researcher and an experienced clinician. Each was blinded to the other's results. All subjects separately completed the mini mental state exam (MMSE) as well as shoulder, hand, and foot trials on the Recognise Laterality Application. The shoulder trial was used as a practice trial to learn the app. A linear regression determined if speed and accuracy, between the hand and foot trials respectively, could predict Hoehn and Yahr stages in patients with PD. An independent t-test compared the mean speed and accuracy scores between subjects with Parkinson's versus aged matched adults. An intraclass correlation coefficient was calculated to determine interrater reliability in the Hoehn and Yahr scores between the student researcher and the experienced researcher. **RESULTS:** A simple linear regression was calculated in order to predict Hoehn and Yahr stage based on left foot accuracy and was found to have a p value of .006, an R^2 value of .639, an F value of 14.142, and 1 degree of freedom. All other time and accuracy scores were not significant in predicting Hoehn and Yahr stage. Additionally, the independent t-test found the mean left foot accuracy score to be statistically significant between the two groups with a $p=0.004$. No other differences between groups were found. Lastly, an intraclass correlation coefficient between Hoehn and Yahr scores of the experienced researcher and student researcher was found to be .984 ($p<0.001$). **CONCLUSIONS:** Our findings suggest that left foot accuracy on the Recognise Laterality Application predicted 64% of the variance related to Hoehn and Yahr staging. However, we suggest interpreting these findings with caution as we would have expected other variables such as left-hand accuracy to have contributed to the variance. Further research is needed to determine the correlation between left-sided symptom involvement in those with PD and left foot accuracy scores on the Recognise Laterality Application. **CLINICAL RELEVANCE:** Individuals with PD have an onset of symptoms that are typically unilateral and can eventually progress to bilateral. As the symptoms progress, these individuals have a decreased ability to discriminate between left and right sides of the body. Further research is indicated to determine usefulness of the Recognise Laterality Application as a left-right discrimination tool for individuals with Parkinson's Disease.