SUPPLEMENTARY MATERIAL

Allocentric vs. Egocentric Neglect in Stroke Patients: A Pilot Study Investigating the Assessment of Neglect Subtypes and their Impacts on Functional Outcome using Eye Tracking

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Appendix I:

Preliminary Data Analysis:

To maximize use of data, cases that had data points missing on variables of interest were deleted pair-wise for correlational and regression analyses. Descriptive statistics for each variable (e.g., means, standard deviations, minimum and maximum values, skewness, and kurtosis) were calculated and examined. Data were screened for univariate outliers and data points that were beyond 3 times the interquartile range for a given variable were considered extreme values. Variables of interest were assessed for normality both by examining normal q-q plots for the presence of reasonably straight diagonal lines and by examining skewness and kurtosis values.

Data was also examined for multivariate outliers by determining whether Mahalanobis Distances (D2) exceeded a critical chi square value that is dependent on the sample size and the number of predictors used in the regression equations (Tabachnick & Fidell, 2007). In addition, cases that may have exhibited influence on regression coefficients were assessed by examining both global and specific measures of influence (i.e., Cook’s Di and DFBETAij respectively; Cook’s Di values >1 and DFBETAij values >1 were considered influential). Multicollinearity for variables considered for the regression analysis was examined by inspecting variables with correlations exceeding r =.70 and variance inflation factor (VIFj) values greater than 10.

Bivariate scatterplots of potential predictors against the dependent variable were plotted and assessed for linear relationships. To test the assumptions of Multiple Linear Regression, q-q plots and residual plots were examined. Specifically, scatterplots of standardized residuals plotted against the standardized predicted values were examined for cloud-like shape and a mean close to 0 for fulfilling the assumptions of: 1) linearity; 2) homogeneity of variance; and 3) independence of observations. The assumption of normality of errors was examined by plotting and inspecting normal q-q plots for approximately straight lines. The assumption of homogeneity of variance was further assessed through Levene’s test.

Test of Assumptions for Regression Analyses:

Evaluation of bivariate scatterplots of predictor variables to be entered into the regression model (cognitive composite, Apples Test neglect, and Eye-tracking neglect scores) against the MPAI-4 measure suggested sufficiently linear relationships. In addition, examination of q-q plots and plots of standardized residuals indicated that the assumptions necessary for an interpretable regression analysis were met. Examination of Mahalanobis Distances indicated no multivariate outliers, and Variance Inflation Factors indicated no multicollinearity among variables. Evaluation of measures of influence revealed no influential cases. Levene’s test for homogeneity of variance was non-significant.

Appendix II:

Correlational Analysis prior to Regression Analyses: To determine whether eye movements predicted functional outcome, over and above that of Apples Test performance, hierarchical multiple linear regression was used. Prior to conducting regression analysis, intercorrelations among independent variables (demographics, cognitive, stroke-related) and functional outcome (MPAI-4 total score) were assessed through Pearson and point biserial correlations. In the interest of preserving power, we chose to include only those variables that demonstrated significant correlations at the a priori criterion of *p* < .01 in our regression model. Only cognitive composite, Apples Test neglect, Eye tracking neglect, and MPAI-4 scores were significantly associated at *p* < .01 and therefore retained for analysis. Results of the correlational analysis are presented in Table I.

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| Table I  *Intercorrelations among Variables for Regression Analysis* | | | | | | | | | | |
| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1. Age | -- |  |  |  |  |  |  |  |  |  |
| 2. Gender | .03 | -- |  |  |  |  |  |  |  |  |
| 3. Education | -.05 | -.58\* | -- |  |  |  |  |  |  |  |
| 4. Stroke Time | .56\* | -.28 | -.18 | -- |  |  |  |  |  |  |
| 5. m-OCSP | .33 | .03 | .04 | -.11 | -- |  |  |  |  |  |
| 6. Stroke Type | -.38 | .26 | .12 | -.43 | .49 | -- |  |  |  |  |
| 7. Cognitive Composite | .47 | .09 | .01 | -.06 | .89\*\* | .61 | -- |  |  |  |
| 8. Apples Test Neglect | -.10 | -.18 | .21 | -.10 | -.29 | -.42 | -.72\* | -- |  |  |
| 9. Eye tracking Neglect | -.03 | -.38 | .25 | .05 | .00 | -.21 | -.42 | .82\*\* | -- |  |
| 10. MPAI-4 | -.30 | -.09 | .21 | -.13 | -.25 | -.17 | -.76\*\* | .78\*\* | .83\*\* | -- |
| Note: \**p*<.05, \*\**p*<.01. Education (years); Stroke Time = time from stroke to testing (days); m-OCSP Classification = modified - Oxfordshire Community Stroke Project Classification (i.e., anterior, posterior, lacunar); Stroke Type (i.e., ischemic vs. hemorrhagic); Apples Test Neglect (i.e., egocentric, allocentric, both, none); Eye tracking Neglect (i.e., egocentric, allocentric, both, none); MPAI-4 = Mayo-Portland Adaptability Inventory – 4 Total Score. | | | | | | | | | | |