

# NEUROBEHAVIORAL CHANGES IN PEOPLE WITH POST-STROKE APHASIA

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## INTRODUCTION

It has long been contended that premorbid personality style and post-stroke changes in these traits may influence the evolution and response to treatment of people with aphasia (PWA). However, research on this key issue has been scarce<sup>1</sup>. As a part of a clinical intervention trial (ClinicalTrials.gov identifier: NCT04134416) we devised a new scale to rate pre-morbid personality and behavior style and changes in these traits after stroke in PWA. We also examined the potential associations with cognitive, psychological and functional variables.

## METHODS

The new scale contains 20 items which evaluates opposite dimensions (e.g., Energetic-Apathetic) rated on a 7-point Likert scale. The scale was administered to carers of PWA and chronic stroke lesions in the left hemisphere (n = 14). The change score for each domain was calculated by subtracting the pre-stroke rating from the post-stroke rating. In each domain, we defined the patients with a mean change score of 1 point as having "personality change"<sup>2</sup>. An overall personality change score was also calculated. For statistical analysis the *Wilcoxon signed rank-test* was used. We also conducted an extensive neuropsychological and psychiatric evaluation on all patients (see table 1 for a sample of the results). The type and severity of aphasia was evaluated with the Western Aphasia Battery.

## RESULTS

- Differences in scores obtained prior to the stroke vs. afterwards were significant ( $Z=-3.925$ ,  $p<.001$ ). Mean overall change of pre-post ratings was 1.15 points, SD 0.81. Specific domains marked with an asterisk (see figure) also show significant pre-post differences.
- The psychiatric evaluation shows mild anxiety (HADS) and subthreshold depression scores (SADQ-10), as well reduced quality of life in the domains of psychosocial participation and energy.

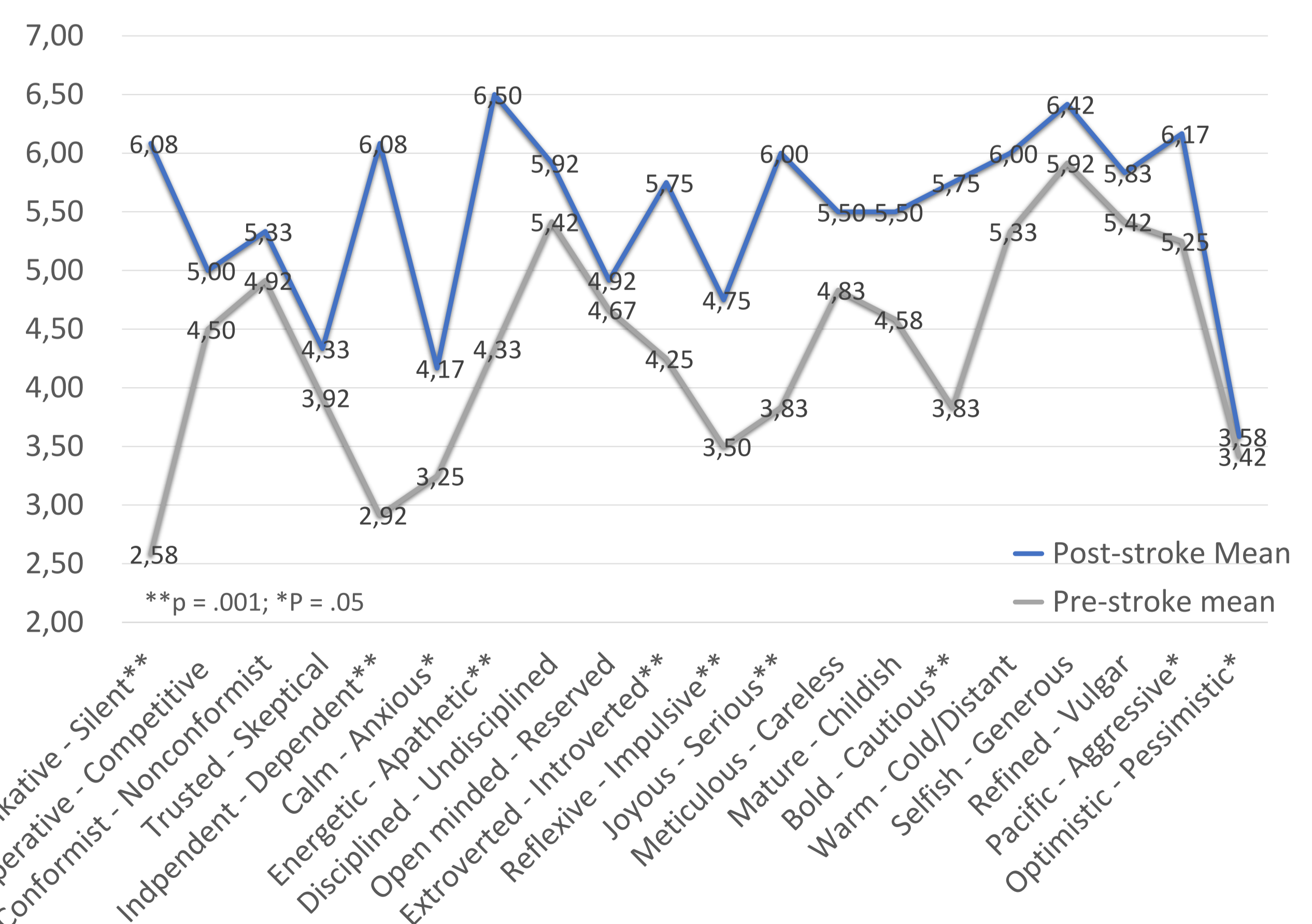
TABLE 1. Sample of baseline results of the psychological evaluation

	Mean	SD
<b>Cognitive Reserve Questionnaire</b>	12	4.07
<b>Hospital Anxiety and Depression Scale</b>		
Anxiety	8.98	4.96
Depression	5.84	4.24
<b>Stroke Aphasia Depression Questionnaire</b>	11.60	4.65
<b>Stroke Aphasia Quality of Life-39 (total)</b>	3.21	0.4
Physical	3.31	0.78
Communication	2.21	0.31
Psychosocial	3.6	0.43
Energy	2.78	0.82
<b>Barthel Index</b>	85	14.6
<b>IQCODE</b>	87	8.1

## CONCLUSIONS

Carers perceived multi-domain personality changes in our sample of PWA relative to their premorbid characteristics. Reported changes included reduced communication, extraversion, calmness and energy in addition to heightened anxiety, impulsivity and dependence.

Further psychological testing revealed anxiety, agitation apathy, and mild depression in over 80% of the sample. Despite the inherent difficulties of examining premorbid personality in PWA on the basis of scales rated by informants<sup>3</sup>, our data suggest that stroke lesions induce changes in personality among PWA and indicate that further studies are warranted.



## REFERENCES

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