



Faculty of Arts  
Department of Psychology

Summary of A Thesis of a Dissertation for Fulfillment of Ph.D. Degree in  
Clinical Neuropsychology titled:

**The Role of Language Disorders In Predicting Motor Behavior  
disorders Among Sample of Adults Survivors of Stroke and  
Healthy Individuals**

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# Summary

## Objectives of study.

The current study aimed to identify the magnitude and direction of the correlations between language disorders and motor behavior disorders and each other among a sample of stroke survivors and healthy people. And to determine the extent to which language disorders contribute to predicting motor behavior disorders among a sample of healthy, adult stroke survivors, in addition to identifying the differences between them and healthy people in these variables.

## Study Problem.

**The problem of the current study is represented by the main question and the sub-questions that emerge from it, which are:**

To what extent do language disorders contribute to predicting motor behavior among a sample of adult stroke survivors compared to healthy controls? The following set of sub-questions emerge from the basic problem:

- 1- Are there significant of varying type (positive / negative) and of varying significance (significant and non-significant) between (language disorders and motor behavior disorders) their sub-components among and each other with stroke survivors with versus normal ones?
- 2- To what extent do language disorders contribute to the prediction of each component of motor behavior disorders among the group stroke survivors and the healthy group, each of them?
- 3- Are there differences between the group stroke survivors and healthy controls in performance on each component of language disorders and motor behavior disorders, each of them?

## Hypotheses .

There are significant of varying type (positive / negative) and of varying significance (significant and non-significant) between (language disorders and motor behavior disorders) their sub-components among and each other with stroke survivors with versus normal ones.

2- The components of Language disorders contribute to predicting the performance of each component of motor behavior disorders in the group of stroke survivors and the healthy group, each of them.

3- There are differences between the group stroke survivors and the group of healthy controls in performance on each component of language disorders and motor behavior disorders, each of them.

## **Method and procedures**

### **First : Study Method and Design**

The current study used the correlational, comparative, descriptive method and depended on cross sectional case- comparative design as a type of non-experimental design.

### **Second: the study Sample**

The study sample consisted of (100) male participants, whose ages ranged from (18 to 48) years, distributed into two groups: the first - the group stroke survivors, which consisted of (50) cases, whose average age was (43,72). years, with a standard deviation of (4,22) years, all of them were diagnosed with stroke. The second group was healthy people, and it consisted of (50) participants, with an average age of (43,72) years, and a standard deviation of (4,22) years. who did not have any psychological or organic complaints as a comparison group equivalent to the group of patients in age , gender, years of education, level of intelligence,, and socioeconomic level.

### **Third : Study Tools.**

1- Elementary Interview . By: the researcher (2022), reviewed and modified by Prof. Dr. Muhammad Naguib Al-Sabwa.

2- A battery of language comprehension and production tests. By: the researcher (2022), and reviewed and modified by Prof. Dr. Muhammad Naguib Al-Sabwa.

3- Fugl motor Behavior disorders scale( 2019), Standardize by:the researcher(2022), reviewed and modified by Prof. Dr. Muhammad Naguib Al-Sabwa .

#### **Fourth : Statistical methods .**

- 1- Means, Standard Deviations and Skewness Coefficients ;To describe the characteristics of the sample .
- 2- Pearson's Simple Correlation Coefficient.
- 3- Sequential Multiple Regressions Analysis.
- 4- Roc curves to calculate sensitivity and specificity, and probability ratios.
- 5- The Independent T-Test for significance of differences between the sample.

#### **Fifth : Results**

1- The first hypothesis of the study was achieved, as the results of the study revealed substantial correlation of varying type (positive / negative) and of varying significance (0.05, 0.001) between some components of language disorders and some components of the motor behavior disorders , while others not associated with both the group stroke of survivors and healthy people.

2- The sequential multiple regression analysis for the second hypothesis revealed that some components of language disorders contribute to performance on some components of motor behavior disorders in a group stroke of survivors. For example, the judgment on sentence test , restricted association test and sentence fluency test the motor performance of the upper limbs explain (28,9%). Both the restricted association test and the sentence fluency test contributed together to explaining the change in the motor performance of the lower limbs explain (31%). The word fluency test was able to explain the variance in the assessment of joint range of motion and joint pain, and the judgement on sentences test was able to explain the change in the assessment of balance function explain (18,9%). As for the word arrangement test, it was able to the change in the assessment of sensory function explain (23,1%).

**For the healthy group** , all regression models of the equations of the sequential multiple regression lines was significant, which means that the components of the language and production tests were able to predict the components of motor behavior disorders statistically significant. For example, both the Judgement on Sentences Test

and the Sentence Structure Test together explained the motor performance of the lower limbs by (26,8%), the judgment on sentence test was able to predict the joint range of motion and joint pain explain (16,8%), the sentence formulation test contributed to explaining the change in the balance assessment explain (23,5%), the Judgement on Sentences test contributed to the change in the sensory function assessment explain (13,4%) , explain (21,5%) of the judgment on sentence test contributed to explaining the change in the total score of the Fugl motor Behavior disorders scale.

**3-** There are statistically significant differences between the group stroke of survivors and the healthy control group on each component of the language comprehension and production battery in the direction of the healthy sample. While there are statistically significant differences between the group stroke of survivors and the healthy control group on each component of the motor behavior disorders in the direction of the stroke of survivors .