



*Lorestan University of Medical Sciences
Faculty of Khorramabad Nursing & Midwifery*

A Thesis

Presented for the

Degree of Master of Sciences

In medical-surgical nursing

*Title: The effect of cognitive rehabilitation and non- invasive
brain stimulation on cognitive abilities and daily living
activities if patients after ischemic stroke*

By: Negin Kordestani

Supervisor: Dr.Parastou Kordestani moghadam

Advisor: Dr. Khadije Kazemi

Dr. Mehdi Birjandi

2022

Abstract

Introduction: One of the common complications after a stroke is cognitive disorders, and despite the high prevalence of these disorders, most rehabilitation treatments are focused on movement. Today, there are various methods to improve cognitive disorders, and the purpose of this research is to determine the effect of cognitive rehabilitation and non-invasive brain stimulation on cognitive abilities and activity daily living of patients after ischemic stroke.

Methods: This clinical trial was conducted on 30 patients with ischemic stroke. The samples were selected as available and were placed in two intervention and sham groups. This intervention, which was between 10-12 sessions of 45 minutes, was used for both groups using Rihakam cognitive rehabilitation software. Patients in the intervention group received non-invasive brain stimulation for 20 minutes in each session, and the sham group did not receive stimulation. Finally, on the data recorded by the software, the desired cognitive areas (attention and concentration, logical reasoning, reactive behavior and (working/visual) memory) were analyzed.

Results: The result of the Mann-Whitney test showed that all cognitive domains except working memory were significant in terms of changes in the level of progress ($P < 0.05$). In terms of activity daily living, according to Mann-Whitney's test, there was no significant difference between the two groups, but according to Wilcoxon's sign rank test, there was a significant improvement in both indicators of each group after the intervention compared to before.

Conclusion: The results of this study indicate that, in general, the simultaneous use of Rihakam rehabilitation software and non-invasive brain stimulation device accelerates the recovery process of cognitive disorders. Also, the use of Rihakam rehabilitation software has a positive role in performing activity daily living. However, due to the wide range of cognitive fields and the variety of assemblies of non-invasive brain stimulation devices, more studies are needed in this field.

Keywords: stroke, cognitive rehabilitation, rehabilitation software, non-invasive brain stimulation device, daily life activity