Research Paper

Stroke and the Positive Effect of Rehabilitation on the Patients Emotional Well-Being

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ABSTRACT: *This study aims to assess the emotional well-being of stroke survivors and the impact of rehabilitation. The "Emotional Well-Being" scale of the SF-36 questionnaire were employed. To examine the effect of rehabilitation and explanatory variables on the scale of interest, a Mixed-Effects ANOVA was performed, accounting for the effect of time. The findings indicated a significant difference in the emotional well-being between the treatment and control groups.*

KEYWORDS: *Stroke, Rehabilitation, SF-36, Emotional Well-Being*

I. INTRODUCTION

A stroke refers to an acute disruption of brain function caused by vascular problems, leading to nervous system impairment that lasts longer than 42 hours. This condition is usually localized due to a blocked blood vessel, though a ruptured vessel can cause widespread dysfunction through bleeding and increased pressure (Marino, 2009).

The World Health Organization (WHO, 2004) defines a stroke as a sudden onset of symptoms resulting from damage to the blood supply affecting brain tissue or the spinal cord. It combines various clinical signs associated with diseased cerebral vessels and a temporary interruption of blood flow to the brain (Mylonas & Logothetis, 1996).The present study aims to measure the Emotional Well-Being of stroke patients, investigating the impact of rehabilitation.

II. METHODS

The SF-36 scale is a tool that has been used for the last 20 years to measure the health status of a population (Hays 1993, Ware 1992). In particular, the SF-36 encodes the dimensions of the respondent's physical and mental health with a grid of 36 questions, which, with the help of the appropriate algorithm, are summarized in the following 8 dimensions: Physical Functioning, Emotional Well-Being, Role Limitations due to Physical Health, Role Limitations due to Emotional Health, Energy/Fatigue, Social Functioning, Pain, and General Health. The Greek translation and validation of the SF-36 has been successfully tested in repeated studies (Sarris et al. 2008, 2001) and has been applied in similar studies in the Greek health sector by other researchers (Pierrakos et al 2011, Yfantopoulos et al. 2001).

The answers to the questions were assigned to natural numbers starting with 0, which indicates the worst possible answer for the patients. The sample mean of the questions in each category was calculated and the measurement scale was transformed to 0-100, where 0 indicates that the person completed the worst possible answer to all questions in the category, while 100 the best.

The questionnaire was completed three times (within six months and one year from the initial completion) by 101 subjects, 61 of whom belonged to the rehabilitation (treatment) group, and 40 to the control group. To test the effect of rehabilitation and explanatory variables on the emotional well-being of stroke patients, a Mixed-Effects ANOVA was conducted, taking into account the effect of time.

III. RESULTS

Regarding the main effects, the results showed a statistically significant difference in patient mood between the two groups (F(1, 99) = 93.59, p < .001). This means that there is a statistically significant difference in emotional well-being between the rehabilitation group and the control group. Furthermore, the effect of time was statistically significant (F(1.78, 176.18) = 185.69, p < .001), as was the interaction between group and time (F(1.78, 176.18) = 45.99, p < .001). This shows that time affects the emotional well-being differently between the two groups. Descriptive statistics of the subgroups are shown in Table 1.

Table 1: Descriptive Statistics

Group	Initial		6 Months		1 Year	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Control	58.30	1.25	24.40	2.13	22.20	1.96
Treatment	59.54	1.01	40.39	1.72	51.67	1.59

Regarding the methodological assumptions, Box's test of equality of covariance matrices did not reject the original hypothesis of equality (F(6, 46693.4) = 1.22, p = 0.29). Mauchly's test of sphericity (W(2) = 0.88, p = .002) rejected the assumption of sphericity, so the Greenhouse-Geisser degrees of freedom correction was used to study effects. Levene's test of equality of variances between groups accepted equality for all three measures (F(1, 99) = 0.008, p = .93) and (F(1, 99) = 1.84, p = .67, F(1, 99) = 1.84, p = .67, 99) = 3.27, p = .07). The Shapiro-Wilk test marginally rejected normality of the residuals for two of the three measures (S(101) = 0.956, p = .002, S(101) = 0.981, p = .165, and S(101) = 0.948, p = .002). p = .001, respectively), which does not pose a problem in the analysis.

IV. DISCUSSION

The study revealed a difference between the treatment and control groups in the emotional well-being of stroke patients. These findings offer valuable insights for stroke health professionals and caregivers, enriching their comprehension of patients' mental health and supporting enhancements in care practices. This study is particularly important for the organization of rehabilitation services throughout all healthcare facilities in Greece. It aims to aid in the prevention, early diagnosis, and treatment of mental disorders in stroke patients, ultimately minimizing hospital stays and lowering healthcare costs for the country.

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