

Psychological Factors for the Effectiveness of Transdisciplinary Neuro-rehabilitation in Patients with Neurological Disorders

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Abstract

Neurorehabilitation success is variable and it does not only depend on the magnitude of the pathology process that leads to neuro-rehabilitation, but there are also psychological and social processes that would determine the success of it and this process generates a significant impact on the disabled people and their family.

Objective: The study aims to assess the psychosocial factors at the beginning and during the transdisciplinary neuro-rehabilitation that determine the effectiveness of it and facilitate the processes of social inclusion. **Methods:** Patients older than 18 years were included, with neurological disorders which are being treated with neuro-rehabilitation by transdisciplinary intervention in AlunCo International Foundation. It was assessed at the time of study entry. **Results:** 70 patients were included in the analysis and followed during the study. A significant association between depressive symptoms and quality of life ($p = 0.01$) was observed. **Conclusion:** Of the psychological factors, assessed depressive symptoms were associated with variables to the impact of neuro-rehabilitation such as quality of life

Keywords: psychological factors, neuro-rehabilitation, quality of life

Introduction

The success of neurorehabilitation is conditioned by the impact that it has in the daily life of the patient and therefore in their personal and social development (Bustos, 2016) (Hopman, 2003: 801-805). Although this concept has spread, it is not clear yet

what are the psychosocial factors that condition the effectiveness of neurorehabilitation.

Currently, with the influence of **the social model of disability**, conventions and international documents (WHO, 2011), we are transiting a paradigm shift, which leads us to consider the status of complexity that disability operates in health, education and social areas.

It is in the territory of the social inclusion of the patient (Gibre 2010: 3-15) that the true qualitative leap in neurorehabilitation is revealed. It is not only a question of restoring lost or damaged functions due to some type of disability, but also of contributing with the restitution of a new identity for the patient and their family, including the various affected areas. This is the challenge of the complexity that it is put at stake, far from the simplifying disciplinary vision of the phenomenon.

Given this new paradigm that raises the level of complexity of neurorehabilitation, the psychosocial interventions are of relevance. The psychosocial area in transdisciplinary models develops in the team an essential role that implies considering the subjectivity of the patient, taking into account the particularity of being a "multi-intervened" patient. This constellation of phenomena and complexities empties the meaning of the "humane" part put into play when it comes to disability. Within the framework of neurorehabilitation and neurosciences, a view about "the human condition and the humane condition" is still pending.

Knowing about these aspects leads to the improvement of the therapeutic proposition for the benefit of the patient and their environment, as well as the health system since it constitutes a high quality starting point in the service.

Materials and methods

Objectives

The main objective is to evaluate if the psychological factors at the beginning impact on

- The effectiveness of neurorehabilitation determined by functional and cognitive status during the follow-up.
- The perception of the quality of life during the follow-up.

The additional objectives will consist in evaluating if psychological factors at the beginning impact on

- The presence of depression
- The use of direct health care resources

We included patients older than 18 years old, with neurological diseases (stroke, Spinal cord and brain injury, etc.) who are under ambulatory care of neurorehabilitation through transdisciplinary intervention in the AlunCo International Foundation. It was evaluated at the time of study entry. These factors were subsequently used to evaluate the impact they independently have on the effectiveness of neurorehabilitation.

Collected variables

Clinical and demographic data of the patients were collected, such as sex, age of the patients, level of education, pathology determining the rehabilitation, comorbidities, constitution of the family, working status, primary caregiver, Neurorehabilitation time.

The functional status was evaluated with FIM that measures the degree of independence a person has to perform ADL (activities of daily living), with a maximum score of 126. The cognitive status was evaluated with MoCA which is a neuropsychological screening for neurocognitive impairment discrimination. Its cut-off

point is 26 and it has a maximum score of 30. The emotional state of people was evaluated with the Beck Depression Inventory. The perception of quality of life was evaluated with SF 36, which is a generic scale that assesses the perception of quality of life related to health; it is self-administered and has 36 differentiated items in 8 domains. Your maximum score is 100, representing the best state. The patients gave their informed consent for the study.

Statistic analysis

Data from the variables will be collected in pre-specified data collection forms. Once entered, the data will be stored and analyzed using the STATA 10.1 program. The descriptive analysis will use the standard measure and deviation for continuous variables and the percentage for categorical variables. For the comparison of variables of interest, a regression model will be used, adjusting the interventions for the covariates to determine their effectiveness comparatively. Significant P will be considered that <0.05.

Results

The 70 patients followed during the study were included in the analysis. The dependent variables were the psychological factors with data such as MoCA and Beck were counted and the independent variables evaluated were FIM and quality of life as specified in the protocol.

In the univariate analysis (Table 3.a), the data for dependent and independent variables are shown, while in Table 3.b the multivariate analysis is shown.

Table 3.a: univariate correlation analysis

	MOCA	Beck

	r	p	r	p
FIM	0.36	0.18	-0.42	0.10
Quality of life	0.25	0.11	-0.66	0.02

Table 3.b: Multivariate analysis adjusting for clinical and demographic co-variables

	MOCA	Beck
	p	p
FIM	0.22	0.18
Quality of life	0.19	0.01

Discussion

The improvement in the quality of life is one of the objectives pursued by health systems and in particular neurorehabilitation (DacCaret, 2015: 14-18). In the present study it is evident that the mood of the person with disability influences the perception of quality of life, making it necessary to address these aspects in models that include psychosocial interventions, which not only focus on impaired functions, but also in personal resources, towards self-determination and restitution of identity that favors full processes of social inclusion (WHO, 2011) (Gibre 2010: 3-15). The level of perceptions and meanings that the patient and their family continuously have (DacCaret, 2015: 14-18) (Cano de la Cuerda, 2016: 79-84) in relation to their condition of disability, health and the change registered in their daily life have an impact on the adaptation, learning, coping and resilience. The transdisciplinary methodologies highlight these emergents and operate including said level (Bustos, 2016). It should be

considered that the included sample had a later intervention in transdisciplinary neurorehabilitation in relation to the event that led to neurorehabilitation, and there may be differences when the population is included early in this type of approach.

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