# CONSULTA DE ENFERMAGEM DE REABILITAÇÃO AO DOENTE PÓS EVENTO CEREBROVASCULAR: QUE DESVIOS ENCONTRADOS AO PLANO DELINEADO À ALTA PELO ENFERMEIRO DE REABILITAÇÃO?

CONSULTA DE ENFERMERÍA DE REHABILITACIÓN DEL PACIENTE DESPUÉS DE UN EVENTO CEREBROVASCULAR: ¿QUÉ DESVIACIONES SE ENCONTRARON EN EL PLAN TRAZADO POR LO ENFERMERO DE REHABILITACIÓN?

REHABILITATION NURSING CONSULTATION OF THE PATIENT AFTER A CEREBROVASCULAR EVENT: WHAT DEVIATIONS WERE FOUND IN THE PLAN OUTLINED BY THE REHABILITATION NURSE?

DOI 10.33194/rper.2020.v3.n1.1.4579 | Submmitted 26/06/2019 | Approved 03/06/2020

Ana Oliveira<sup>1</sup>; Ana Silva<sup>1</sup>; Neusa Sá<sup>1</sup>; Sónia Brandão<sup>1</sup>

1 - Centro Hospitalar de Entre o Douro e Vouga

## **RESUMO**

Introdução: O Acidente Vascular Cerebral (AVC) constitui uma das principais causas de morbilidade e mortalidade a nível mundial, da qual resultam variados défices, quer motores, quer cognitivo-comportamentais, quer emocionais. Deste modo, a enfermagem de reabilitação assume grande importância no sentido de ajudar o doente a readquirir capacidades perdidas e tornar-se novamente independente, tendo particular importância neste processo os cuidadores informais. Porém, o trabalho do enfermeiro de reabilitação não se deve restringir à fase aguda, devendo prolongar-se ao longo do tempo, nomeadamente após o regresso ao domicílio, quando os problemas relacionados com um grau de dependência superior surgem.

Objetivo: Analisar os desvios ao plano definido à alta pelo enfermeiro de reabilitação;

Método: Estudo quantitativo, exploratório, descritivo e retrospetivo, tendo sido incluídos 339 doentes.

Resultados: Os doentes têm uma idade média de 71 anos, são predominantemente do género masculino e o evento vascular predominante foi o AVC isquémico. A maioria dos doentes apresentou melhoria funcional e motora após a alta. Vários problemas foram identificados na consulta e foram adotadas medidas corretivas dos mesmos, prevenindo o seu agravamento e potenciando correções futuras. Estabeleceram-se relações estatisticamente significativas entre o grau de dependência e a institucionalização dos doentes, bem como entre as alterações cognitivas e o grau de dependência.

Conclusão: Os resultados deixaram claro que, mesmo após a alta os doentes com AVC necessitam de apoio, suporte, orientação, ensinos e treino para melhorar os resultados e prevenir complicações. Daí que, o trabalho do enfermeiro de reabilitação deve alargar-se para além da alta do doente com AVC, perspetivando o futuro com maior seguranca.

Palavras-chave: Enfermagem de reabilitação; Consulta de enfermagem; AVC; Evolução clínica;

## **RESUMEN**

Introducción: El accidente cerebrovascular constituye una de las principales causas de morbilidad y mortalidad a nivel mundial, que da lugar a diversos déficit, tanto motores, como cognitivos-conductuales, o emocionales. De este modo, la enfermería de rehabilitación asume una gran importancia en el sentido de ayudar al enfermo a readquirir capacidades perdidas y volverse nuevamente independiente, teniendo particular importancia en este proceso los cuidadores informales. Sin embargo, el trabajo del enfermero de rehabilitación no debe restringirse a la fase aguda, debiendo prolongarse a lo largo del tiempo, especialmente después del regreso al domicilio, cuando los problemas relacionados con un grado de dependencia superior surgen.

Objetivo: Analizar las desviaciones del plan definido al alta por la enfermera de rehabilitación.

Método: Estudio cuantitativo, exploratorio, descriptivo e retrospectivo, y se incluyeron 339 pacientes.

**Resultados:** Los pacientes tienen una edad promedio de 71 años, predominantemente masculinos y el evento vascular predominante fue el ictus isquémico. La mayoría de los pacientes presentó una mejora funcional y motora después del alta. Varios problemas fueron identificados en la consulta y se adoptaron medidas correctivas de los mismos, previniendo su agravamiento y potenciando correcciones futuras. Se establecieron relaciones estadísticamente significativas entre el grado de dependencia y la institucionalización de los pacientes, así como entre las alteraciones cognitivas y el grado de dependencia.

Conclusión: Los resultados dejaron claro que incluso después del alta los pacientes con AVC necesitan apoyo, apoyo, orientación, enseñanzas y entrenamiento para mejorar los resultados y prevenir complicaciones. De ahí que

el trabajo del enfermero de rehabilitación debe ensancharse más allá del alza del enfermo con accidente cerebrovascular, visando el futuro con mayor seguridad.

Palabras clave: Enfermería de rehabilitación; Consulta de enfermería; Accidente cerebrovascular; Evolución clínica;

#### **ABSTRACT**

**Introduction:** Stroke is one of the leading causes of morbidity and mortality worldwide, resulting in a variety of deficits, motor and cognitive-behavioral, as well as emotional. Thus, rehabilitation nursing has great importance in helping the patient regain lost capacities and become independent again, including family in this process. However, the work of the rehabilitation nurse should not be restricted to the acute phase and should be extended over time, especially after returning home, when problems related to a higher degree of dependence arise.

**Objective:** To analyze deviations from the plan defined at discharge by the rehabilitation nurse.

Method: It is an exploratory, descriptive, retrospective and quantitative study involving 339 patients.

**Results:** Patients have a mean age of 71 years-old are predominantly male, and the predominant vascular event was ischemic stroke. The majority of patients presented functional and motor improvement after discharge. Several problems were identified in the consultation and corrective measures were taken to prevent them from worsening and to promote future corrections. Statistically significant relationships were established between the degree of dependence and the institutionalization of the patients, as well as between the cognitive alterations and the degree of dependence.

**Conclusion:** The results made it clear that even after discharge, patients with stroke need support, guidance, teaching and training to improve outcomes and to prevent complications. Hence, the work of the rehabilitation nurse should extend beyond the discharge of the patient with stroke, with a view to the future with greater security.

Key Words: Nursing rehabilitation; Nursing consultation; stroke; Clinical evolution.

### **INTRODUCTION**

Stroke can be defined as the rapid development of clinical signs of focal (or global) disturbances in brain function, with symptoms that last for more than 24 hours or lead to death, with no apparent cause other than of vascular origin<sup>(1-2)</sup>.

Realizing the epidemiological data in Portugal, in 2017, there were 11 270 deaths in the country due to Cerebrovascular Diseases. Deaths provoked by these causes accounted for 10.2% of mortality in the country and affected more women (11.6% of the total deaths of women) than men (8.9% of the total deaths of men). By age, about 93% of deaths from this cause were of people aged 65 and over and about 83% of people aged 75 and over. In 2017, the average number of potential years of life lost was 10.1 years (10.2 for men and 10.0 for women)<sup>(3-4)</sup>. Although there has been a very slow decrease in these numbers, stroke remains the main cause of death in Portugal.

Cerebrovascular diseases still appear as a high cause of morbidity<sup>(4-5)</sup>. In Europe, stroke is currently the main cause of morbidity and disability, and following the aging of the population, there is an increase in the incidence and prevalence of this pathology, even if the incidence of stroke will gradually decrease in industrialized countries. Stroke is still the second most common cause of dementia, associated with vascular dementia, the most frequent cause of epilepsy in the elderly, as well as a frequent cause of depression<sup>(6-7)</sup>.

Among the consequences of a stroke, sensory, motor and cognitive impairment is highlighted, as well as a decrease in the ability to perform self-care and participate in social, work and recreational activities<sup>(8-)</sup>

<sup>9)</sup>. Although the greatest recovery occurs in the first weeks after the stroke, often the improvement in functional capacity, particularly regarding self-care, lasts for several months after the event; with one of the aspects often focused on by patients is the remaining disability after a stroke, and the reduction in quality of life<sup>(8)</sup>.

The National Stroke Association estimates that 10% of stroke survivors recover almost completely; 25% recover with minimal sequelae; 40% have moderate to severe disability that requires specific follow-up; 10% need long-term treatment in a specialized unit; 15% die shortly after the episode and 14% of survivors have a second episode during the 1st year<sup>(9)</sup>.

Considering the morbidity associated with stroke, an insufficient response to people with loss of functionality in self-care and in the ability to meet their needs after discharge is expected. During hospitalization, in a protected environment, evolution can be progressive, but slow. However, the great difficulty often arises with the return home and the demand for answers from the caregivers, namely in the capacity to assume the continuity of care for the dependent person. **Empowering** patients caregivers for the new reality becomes a fundamental strategy<sup>(10)</sup>. Given the sudden picture of cerebrovascular event, psychological and cognitive preparation and the entire process of learning new knowledge becomes imperative in the transition process to the continuity of care at home. Given that stroke sequelae are frequent, and that they can be temporary or permanent losses, it is necessary to adapt the entire family dynamics to

circumstances, often generating stress, problems and anxieties.(11)

With this framework as a reference, it is easy to see the growing need to understand all the problems that involve the patient with stroke, while looking for evidence to support a greater quality of care and professional responsibility. In this perspective, it is very important to acquire specialized professional skills, to mobilize specific scientific knowledge, technical and relational foundations with implications for the practice of rehabilitation of the person after a stroke, which translate into measurable gains.

In daily monitoring of stroke patients, rehabilitation nurses face the difficulties of patients and caregivers returning home, with functional incapacity greater than the previous one and the need to comply with a complex therapeutic plan. Hence the need for monitoring the patient and family/caregivers after discharge in order to:

- Early detection of complications;
- Timely identify deviations from treatment;
- Verify adherence to the rehabilitation program outlined at discharge;
- Teach strategies for secondary stroke prevention.

Thus, a multidisciplinary consultation program was developed, carried out 8 to 12 weeks after discharge, which includes two specialist nurses in Rehabilitation Nursing, two neurologists and a physiatrist, from a perspective of functional complementarity.

The Rehabilitation Nurses assess functional scales, the completion of the rehabilitation plan, ongoing therapy, control of vascular risk factors, dysphagia, social situation, and recording of complications.

In this article, we intend to carry out a detailed analysis of these data to contextualize the motor evolution and functional dependence of these patients, listing the major problems reported by patients and caregivers upon returning home. Then, we intend to:

Assess whether there is statistically significant differences between the levels of motor recovery and functional dependence between the two moments of assessment: discharge and consultation;

Check the main difficulties of patient and caregivers when returning home.

## **METHOD**

An exploratory, descriptive and retrospective study was carried out, based on the data existing in the computer system to support nursing practice, collected and recorded by the principal investigators.

During hospitalization, a rehabilitation plan is outlined from admission to discharge, with adjustments being made in terms of diagnoses and interventions according to the assessment performed. Based on the results obtained, the plan was adapted in the different phases of the nursing process to respond to the difficulties, correspond to gains and facilitate functional re-adaptation to the dependency condition.

After hospitalization, the rehabilitation nurse defines a plan to be followed after discharge, together with the patient, informal caregivers and a formal support network, in order to optimize resources and maximize results. The plan includes the orientation of the rehabilitation program, strategies that facilitate self-care, the therapy to be followed, strategies for controlling risk factors and particular care for the dysphagic patient.

The patient's social reintegration is expected, using the resources available in the community.

Upon discharge, the rehabilitation nurse schedules a reassessment appointment for all patients who have been hospitalized with a cerebrovascular event to assess compliance with this plan and detect early deviations from it. All patients who attended the evaluation visit were included.

The use of instruments to objectively measure the capacity/incapacity to perform activities of daily living becomes essential to design rehabilitation programs. The Modified Barthel Index (IBm) is one of the most used activities od daily living (ADL) assessment instruments, with a high level of fidelity that is easy to apply and interpret, without costs, quick to complete and with great power of application repetition. In the clinical context, the Barthel Index provides important information not only from the total score, but also from the partial scores for each assessed activity. Through this scale, it is possible to assess the patient's gains in functional independence at different moments of assessment. A patient scoring less than 20 points is considered to be completely dependent; 20 to 35 points, presents with a severe dependence; from 36 to 59 points, moderate dependence, from 60 to 99 points, mild dependence; and 100 points correspond to independence<sup>(12)</sup>.

The Modified Rankin Scale (mRS) assesses the functional disadvantages resulting from physiological or pathological processes, from the perspective of capacity versus incapacity. It is classified into 7 levels (0-6), between grade 0 (no symptoms) and grade 6 (death; this is sometimes omitted, ending in grade 5); grade 5 indicates severe disability, confined to bed, incontinent and requiring constant nursing care/attention. In the present study, level 6 was omitted, as patients who died were excluded<sup>(13)</sup>.

The National Institute of Health Stroke Scale (NIHSS) is a standard scale, systematic to use, validated, simple, quickly applicable (5-8 minutes), reliable (Cronbach's Alpha Coefficient = 0.92), safe, quantitative, used to measure the severity and magnitude of neurological dysfunction after a stroke that can be applied to the patient's bedside by any health professional, allowing a common language to exchange information between them. It was developed by American researchers (University of Cincinnati Stroke Center) as a research tool, being the Portuguese version currently validated. For data analysis, three subgroups were identified<sup>(14-15)</sup>: NIHSS between 0-5 points, NIHSS between 6 and 13 points and NIHSS greater than 14 points<sup>(16)</sup>.

For dysphagia screening we use the Gugging Swallowing Screen (GUSS). The GUSS determines the severity of dysphagia and the risk of aspiration in patients with acute stroke. Compared to other tests, the GUSS test sequence is unique: the test starts with swallowing saliva followed by swallowing semi-solid, fluid and solid textures. The GUSS consists of 4 subtests and is divided into 2 parts: the preliminary assessment or indirect swallowing test (subtest 1) and the direct swallowing test, which consists of 3 subtests. These 4 subtests must be run sequentially. In the indirect swallowing test: 1. surveillance; 2. voluntary cough and/or throat clearing; 3. saliva swallowing (swallowing, drooling, voice change) is evaluated. The direct swallowing test assesses swallowing, involuntary coughing, drooling and voice changes in semi-solid swallowing, liquid swallowing and solid swallowing. The evaluation is based on a point system, for each subtest it is possible to reach a maximum of 5 points. Thus, twenty points is the highest score a patient can achieve and denotes normal swallowing capacity without risk of aspiration.

In total, four severity levels can be determined:

- 0-9 Points: severe dysphagia and high risk of aspiration;
- 10-14 Points: moderate dysphagia and moderate risk of aspiration;
- 15-19 Points: mild dysphagia with mild risk of aspiration;
- 20 points: normal swallowing ability.

For each severity level, different diet recommendations are provided<sup>(17)</sup>.

Statistical analysis was performed using the IBM SPSS Statistics version 22 program. Regarding descriptive statistical analysis, frequencies, percentages, means and standard deviations were calculated.

The comparison of care results was carried out using Student's t test for independent samples (checking for differences between 2 independent groups) and Pearson's correlation coefficient was used to establish associations between variables.

To interpret the intensity of the correlations, the following values were adopted as reference, according to Upton and Cook (2008): r = 0.7 - strong correlation; r = 0.3 to 0.7 - moderate correlation; r = 0 to 0.3 - weak co-relation<sup>(18)</sup>. The significance level adopted throughout the study was 5%, thus rejecting the hypothesis that the correlation between variables is zero at the 5% level when  $p \le 0.05^{(18)}$ .

A significance level of 0.000 was used.

# **RESULTS**

The results refer to data from the consultation carried out in 2018, during which 339 patients were evaluated in two moments (at discharge and at the consultation). Patients who attended the consultation are included to have two moments that can be compared, at discharge and at the consultation.

The most prevalent gender was male with 55.8% of individuals, 44.2% being female.

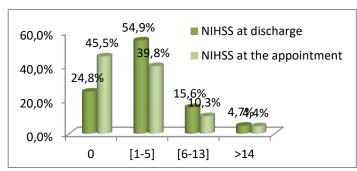
The predominant age group was 71 to 80 years-old, the average was 71 years-old, with a standard deviation of 13.4, and about 78% of the individuals were over 61 years-old.

Analyzing the distribution of the vascular event, we have a predominance of ischemic stroke on 84% of cases, followed by hemorrhagic stroke with 10.6% and transient ischemic accidents with 5.40%.

Among the ischemic events, and according to the clinical classification of the Oxfordshire Community Project (OCSP) the most prevalent were the partial infarcts of the anterior circulation (PACI) with 35.1%, later we have the lacunar infarcts of the anterior circulation (LACI) with 28.8% of cases, followed by posterior circulation infarctions (POCI) with 18.9% and finally with 17.2% the total anterior circulation infarctions (TACI).

Regarding hemorrhagic events, the most prevalent were deep hematomas (lacunar/LACI) with 38.9% of cases, followed by POCI with 27.8%, PACI with 19.4% and finally TACI with 13.9 %.

Comparing neurological deficits, we used the NIHSS (graphic 1), which assesses 11 items of the neurological examination.

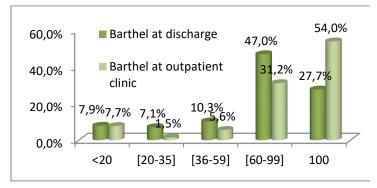


**Graphic 1** – Neurological assessment according to NIHSS

It is seen that at discharge, the most prevalent percentage is of individuals with mild neurological impairment, with a positive deviation in the consultation for individuals with NIHSS=0, or without non-quantifiable deficits or deficits. There is a decrease of 15.1% at the highest scoring levels.

Regarding the assessment at the appointment, we found that 46.3% of patients improved their score on the NIHSS scale. However, an aggravation was observed in 7.1% of patients, justified by deviations from the rehabilitation plan defined at discharge.

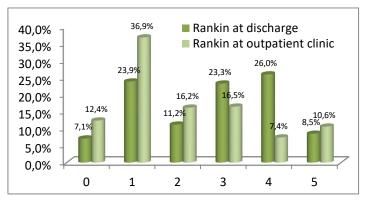
Regarding the IBm, it was found that at discharge 47% of the individuals had a slight dependence, with a positive evolution for independent patients in the evaluation of the consultation. There was a decrease in the other more severe levels of dependence, and in those with severe dependence, the decrease was smaller (graphic 2).



Graphic 2 - Self-care dependency assessment according to IBm

It was also possible to verify that most individuals (57.5%) have maintained the level of dependence on self-care, 39.8% improved and 2.7% of the cases worsened. This worsening in the level of dependency was also justified by the non-continuity of the rehabilitation plan defined previously.

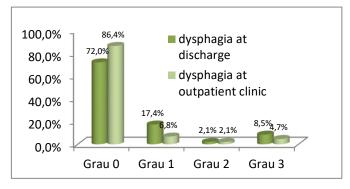
With regard to the assessment of self-care dependence using mRS, it was observed that, at discharge, there was a higher prevalence in individuals with moderate disability, with a positive evolution in the consultation for patients with non-disabling symptoms (Graphic 3).



**Graphic 3** – Self-care dependence assessment according to mRS

We found that 46.6% of patients moved from a level of dependence, having improved.

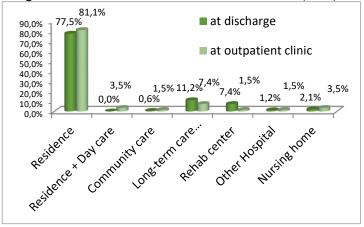
Based on the assessment of dysphagia at discharge, it was found that 72% of the individuals had no swallowing disorders. During the consultation we observed an improvement, verifying that 86.4% did not have dysphagia. There was thus a positive deviation with a reduction in other degrees of dysphagia, as can be seen in graphic 4.



Graphic 4 – Dysphagia assessment

Considering only patients with swallowing disorders, we found that 17.7% of cases improved.

Based on the reading and analysis of Graphic 5, regarding the social orientation to discharge, the vast majority were discharged to the household (77.5%). Upon discharge, 21.9% were institutionalized. In the evaluation carried out in the consultation, 13.9% of the individuals remained institutionalized, being mostly integrated in the National Network of Continuous Integrated Care (7.4%).



**Graphic 5** – Social orientation to discharge

Regarding the identification of problems (graphic 6), a large part had identified risk factors, with the need to bet on prevention with teachings on healthy lifestyle habits.

At least one problem was identified in 54% patients and in 33% more than one. Of these, the most prevalent was the difficulty in controlling risk factors (69.6%), namely blood pressure control, eating habits and eradication of risk behaviors (smoking, alcoholism).

As for social problems (10%), we singled out the difficulty in the care support network (formal and informal), which proved to be insufficient given the patient's level of dependence.

Regarding adherence to the therapeutic regimen (13.3%), we found difficulty in complying with the prescribed therapy, with frequent underestimation of its importance in preventing new events.

In 13.6% of patients, we detected non-conformities in the rehabilitation program. Some patients did not maintain the defined rehabilitation plan upon discharge, did not continue it, the vast majority due to unavailability of places in agreed clinics.

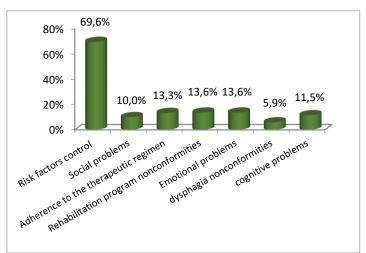
Focusing on emotional problems (13.6%), we highlight mood and anxiety disorders conditioned by the degree of dependence and fear of new events.

We detected cognitive alterations in 11.5%, namely alterations in memory, learning capacity and the ability to mobilize prior knowledge necessary for the most effective implementation of self-care.

Dysphagia is an undervalued aspect in 5.9% of patients who, despite showing changes in swallowing, did not adopt preventive strategies for aspiration, namely the

use of thickener for adequate consistency, strategies that facilitate swallowing and an adapted diet.

Only in 13% of individuals were no problems identified.



Graphic 6 - Problems identified

In view of the diagnosis of the situation and in view of the problems identified, the intervention considered relevant and personalized to each patient was carried out.

Teaching was carried out to all patients/caregivers, with training and/or instruction and redirected to the primary care nursing team.

A large part (51.9%) needed to undergo therapeutic adjustment and 35.7% lacked guidance for other specialties (namely Internal Medicine, Psychiatry, Psychology and Social Care), with the Neurologist being responsible for this referral.

In this study, statistically significant relationships were found between neurological assessments and self-care dependence, as well as cognitive changes and social orientation.

To this end, relationships between variables were verified using the t test, investigating the existence of mean differences between independent groups.

The NHISS is a systematic instrument that allows a quantitative assessment of neurological deficits related to stroke. On the other hand, it is necessary to use an assessment scale of the individual's abilities to perform daily tasks - IBm. The latter made it possible to measure the degree of dependence on each activity over time.

We found that there was an improvement with direct relation in the NIHSS to discharge and consultation, as well as in the IBm, as described in table 1.

	Discharge	Consultation	Sig
NIHSS	3.6	2.8	0.000
Barthel	74	84	0.000

**Table 1** – Comparative analysis between NIHSS and IBm at both times (Student's T test)

Comparing the neurological deficits and the degree of dependence, we found a strong inverse relationship between the NIHSS and the IBm in both moments and a direct relationship between the NIHSS and the mRS, that is, for higher scores on the NIHSS, lower scores on the IBm and higher scores in mRS, as shown in table 2.

	Discharge		Consultation					
	NIHSS	Barthel	NIHSS	Rankin	NIHSS	Barthel	NIHSS	Rankin
Pearson	p= - (	0,764	p= 0	,634	p= - (	0,805	p= 0,	701
Correlati on	Hi	gh	Mode	erate	Hi	gh	Hi	gh
Sig.	0.0	000	0.0	000	0.0	000	0.0	000

**Table 2** – Inferential analysis between NIHSS and IBm and between NIHSS and Rankin in both moments

Regarding the relationship between the degree of dependence after a stroke and institutionalization, and according to table 3, we found a moderate correlation, with the degree of dependence being one of the factors that hinders the return to the home.

	Discharge		Consultation		
	Barthel	Institucio- nalization	Barthel	Institucio- nalization	
Pearson	p= 0.631		p= 0.557		
Correlation	Moderate		Moderate		
Sig.	0.000		0.000		

**Table 3** – Inferential analysis between the IBm and institutionalization in both moments

Regarding the relationship between the degree of dependence and cognitive alterations, we found that there is a strong correlation, which are reflected in table 4. Cognitive alterations are associated with less collaboration in the rehabilitation program and, consequently, less recovery in functional terms.

# Consultation

	Barthel	Cognitive changes	
Pearson	p= - 0.797		
Correlation	Forte		
Sig.	0.000		

**Table 4** – Inferential analysis between IBm and cognitive changes

# **DISCUSSION**

In this study, we obtained qualitative and quantitative information that allowed us to characterize the individuals, their evolution in the first weeks after a stroke, as well as to establish correlations between their characteristics and path, which are statistically significant and relevant to the body of knowledge in rehabilitation nursing. Analyzing the results, we can

see that our population is similar to the general characteristics described in the literature.

Of the individuals included, 78% were elderly people, data that meet the values reported by several studies<sup>(19-21)</sup>.

With regard to gender, as in most other studies, our population was predominantly male<sup>(22)</sup>.

As for the typology, ischemic stroke was the most prevalent (84%), similarly to other studies<sup>(23-24)</sup>.

Regarding the OCSP classification, we verified multiple distributions in several studies, not corroborating the one verified in the present study, in which the most prevalent event was the PACI.

Among the quality indicators, we highlight the outcomes obtained in neurological and functional terms. Similar to other studies, comparing various moments, there is a positive neurological and functional evolution<sup>(23,25-26)</sup>. Regarding the NIHSS, we obtained an average of 3.6 points at discharge and 2.8 points in the consultation evaluation. In comparison with other studies, we found that these values are lower than the generality of other researches. However, the distribution is similar, that is, patients with a mild degree of neurological impairment predominate.<sup>(25-26)</sup>

With regard to the IBm, we found a mean to high value similar to other studies, but slightly higher in the consultation evaluation. Making the comparison with the study by Nunes (2016), the mean values of the IBm were situated at 75.64 points and 78.39 points, at discharge and at 30 days respectively, while in the present study the values are situated at 74 points and 84 points in both moments<sup>(26)</sup>.

This distribution remains similar comparing to mRS. We found a higher mean at discharge in our study (2.62 points), compared to 2.37 points in the study by Nunes (2016), as opposed to a higher level of dependence in this study at 30 days (2.1 points) compared to the 1.98 points in the present study<sup>(26)</sup>.

Unlike other studies that report a worse functional recovery for females, in the present study we did not find any correlation between neurological status, functionality and gender<sup>(26)</sup>.

The sample size and the different distribution regarding the type of stroke can justify these differences in results.

We did not find statistically significant age-dependent relationships.

As for dysphagia, we found that at discharge, the dysphagia incidence is much lower than that documented by some studies. This fact may be due to the absence of objective dysphagia screenings, and the assessment refers to the time of discharge and not to the hyper-acute phase of the stroke<sup>(27)</sup>, having found several nonconformities in the adequacy of the consistency of the diet to the degree of dysphagia, despite all the teachings carried out at discharge.

As in other studies, the vast majority of patients were discharged to their homes, with very similar percentages<sup>(26)</sup>. Clinical, family, social or economic elements interfere in this decision as criteria for the option to be taken at discharge. In this study, the functional dependence with which a moderate correlation was found was primarily weighted.

In this study, whose objective was to study the contributions of the rehabilitation nursing consultation to the patient after a stroke, several problems were identified, namely the difficulty in controlling risk factors, the difficulty in adhering to a sometimes complex therapeutic regimen, the difficulty in compliance of the rehabilitation program, emotional changes, cognitive changes and social difficulties.

This last aspect, apparently, is related to the lack of means of support at home versus the lack of caregivers/relatives available to receive the person with the highest degree of functional dependence. Although inpatient health professionals recognize the needs and work on items related to greater functional disability, the therapeutic plan to be followed in the short and long term, and the return home, only when the latter actually happens does the patient and the your family truly faces the first difficulties. Therefore, our intervention is crucial in helping to adapt to the new reality.

The need for information/teaching on the part of the patient and their families is related to the lack of knowledge of their new pathological reality. They need to be informed about the pathology, prognosis, new needs, namely if the person is more dependent, and about the social and professional support that exists.

In this way, we found a direct relationship between the degree of dependence after a stroke and institutionalization, we verified a moderate correlation with the degree of dependence being one of the factors that hinders the return to the home. This reality is strongly supported by other studies<sup>(26)</sup>.

We also found a positive linear relationship between the decrease in cognitive function right after the stroke and the low motor outcomes. Thus, as in other studies, this one attested that low cognitive function is a predictive factor for a worse functional recovery, contributing to reinforce the understanding of the prognosis of these patients. Thus, prolonged institutionalization and low cognitive reserve enable a reflection on the functional prognosis of patients, strategically allowing the definition of realistic goals in partnership with caregivers<sup>(28-29)</sup>.

# **CONCLUSION**

Rehabilitation nursing is an area of specialized nursing intervention that focuses on the maintenance and promotion of well-being and quality of life, and the recovery of functionality through the promotion of self-care, prevention of complications and maximization of capabilities.

The specialist nurse in rehabilitation nursing has a body of differentiated professional knowledge aimed to guide the patient and caregivers on the path to recovery, adapting to the new reality, providing them with capabilities and identifying various resources in the search for the ideal functional level.

With this study, was possible to demonstrate the importance of the continuity of follow-up of patients with stroke after discharge, attempting to avoid deviations from the guideline defined at discharge, which is often difficult to follow when returning home.

With the consultation, it was possible to detect early problems and complications that could be corrected to improve the patient's health status.

Rehabilitation is imperative to minimize sequelae, maximize recovery potential and socially reintegrate.

The relentless search for indicators that are sensitive to nursing care is extremely important due to the impact they have on patients and on the health system.

More studies in this regard are needed, as well as strengthening the monitoring of these patients by primary health care so that prevention is the basis for obtaining health gains in all contexts of rehabilitation nursing practice.

#### **BIBLIOGRAPHIC REFERENCES**

- 1. Organização Mundial da Saúde. Manual STEPS de Acidentes Vascular Cerebrais da OMS: enfoque passo a passo para a vigilância de acidentes vascular cerebrais. Genebra, Organização Mundial da Saúde. 2016.
- 2. Norrving B, Barrick J, Davalos A, Dichgans M, Cordonnier C, Guekht A, Kutluk K, Mikulik R, Wardlaw J, Richard E, Nabavi D. Action plan for stroke in Europe 2018-2030. Eur Stroke J. 2018 Dec;3(4):309-36.
- 3. Instituto Nacional de Estatística (INE). Causas de morte 2017. Lisboa. 2019
- 4. World Federation of Neurology. Dia Mundial do Cérebro 2017 dedicado ao AVC. Available from: https://www.wfneurology.org/2017-07-17-wfn-spn-wbd. Acedido em 10/06/2019.
- 5. Silva DL, Barreiros C, Maia R, Miranda I, et al. Disfagia no acidente vascular cerebral: realidade de uma unidade de AVC (p.15). 18° Congresso do Núcleo de Estudos da doença vascular cerebral. Sociedade Portuguesa de Medicina Interna. 2017. [cited 2019 Jun 2] Available from: https://www.spmi.pt/pdf/NEDVC\_17congresso\_suplemento.pdf
- 6. The Atlas of Heart Disease and Stroke: World Health Organization. [cited 2019 Jun 2] Available from: http://www.who.int.
- 7. O'Brien JT, Erkinjuntti T, Reisberg B, Roman G, Sawada T, Pantoni L, et al. Vascular cognitive impairment. Lancet Neurol. 2003 Feb;2(2):89-98. PubMed PMID: 12849265.
- 8. Laver KE, George S, Thomas S, Deutsch JE. Crotty MVirtual reality for stroke rehabilitation Virtual reality for stroke rehabilitation. Cochrane Database Syst Rev, Issue 2. 2015. Art. No.: CD008349. DOI: 10.1002/14651858.CD008349.pub3.
- 9. Ribeiro AC. Benefícios da Intervenção da Enfermagem de Reabilitação na Minimização da Sobrecarga do Cuidador Informal do doente com Acidente Vascular Cerebral. 2013. Escola Superior de Enfermagem de Coimbra. Tese de Mestrado. Lisboa.
- 10. Saposnik, G, Cohen LG, Mamdani M, Pooyania S, Ploughman M, Cheung D et al. Efficacy and safety of non-immersive virtual reality exercising in stroke rehabilitation (EVREST): a randomised,

- multicentre, single-blind, controlled trial. Lancet Neurol. 2016. v. 15, 10, p.1019-1027.
- 11. Pereira IC. Regresso a casa: Estrutura da acção de Enfermagem. Lisboa. 2013. Universidade Católica Editora.
- 12. Araújo F, Ribeiro JLP, Oliveira A, Pinto C. Validação do Índice de Barthel numa amostra de idosos não institucionalizados. Rev Port Saúde Pública. 2007. 25(2), 59-66.
- 13. Quinn TJ, Dawson J, Walters M. Dr John Rankin: His life, legacy and the 50th anniversary of the Rankin stroke scale. Scott Med J. 2008. 53(1), 44-47.
- 14. Brott T, Adams HP, Olinger CP, Marler JR, Barsan WG, Biller J, et al. Measurements of acute cerebral infarction: a clinical examination scale. Stroke 20. 1989. 864-70.
- 15. Caneda MA, Fernandes JG, Almeida AG, Mugnol FE. Confiabilidade de escalas de comprometimento neurológico em pacientes com acidente vascular cerebral. Arq. Neuropsiquiatr. 2006. 64(3-A);:690-697
- 16. Campos TF, Dantas AA, Melo LP, Oliveira DC: Grau neurológico e funcionalidade de pacientes crónicos com acidente vascular cerebral: implicações para a prática clínica. Arq. Ciên. Saúde. 2014. 21(1). 28-33.
- 17. John, J., & Beger, L. (2015). Using the gugging swallowing screen (GUSS) for dysphagia screening in acute stroke patients. J Contin Educ Nurs, 46(3), 103-104. doi:10.3928/00220124-20150220-12
- 18. Upton G, Cook I. A dictionary of statistics. 2nd ed. Oxford: Oxford University Press. 2008.
- 19. DGS-Direcção de Serviços e Planeamento, Unidades de AVC. 2001. Lisboa. Direcção Geral de Saúde.
- 20. Pereira RA, Santos EB, Fhon JRS, Marques S, Rodrigues RAP. Burden on caregivers of elderly victims of cerebrovascular accident. Rev Esc Enferm USP. 2013. 47(1):182-8.
- 21. Caro CC, Mendes PVB, Costa JD, Nock LJ, Cruz DMC. Independence and cognition post-stroke and its relationship to burden and quality of life of Family caregivers. Topics Stroke Rehabil. 2017. 24(3):194-9.
- 22. Appelros P, Stegmayr B, Terént A. Sex Differences in Stroke Epidemiology. A Systematic Review. Stroke. 2009. 40,1082-1090
- 23. Feigin VL, Lawes CM, Bennett DA, Anderson CS. Stroke epidemiology: a review of population-based studies of incidence, prevalence, and case-fatality in the late 20th century. Lancet Neurol. 2003. 2(1):43-53
- 24. Sacco RL, Kasner SE, Broderick JP, Caplan LR, Connors JJ, Culebras A, Elkind MS, George MG, Hamdan AD, Higashida RT, Hoh BL, Janis LS, Kase CS, Kleindorfer DO, Lee JM, Moseley ME, Peterson ED, Turan TN, Valderrama AL, Vinters HV; American Heart Association Stroke Council, Council on Cardiovascular Surgery and Anesthesia; Council on Cardiovascular Radiology and Intervention; Council on Cardiovascular and Stroke Nursing; Council on Epidemiology and Prevention; Council on Peripheral Vascular Disease; Council on Nutrition, Physical Activity and Metabolism. An Updated Definition of Stroke for the 21st Century: A Statement for Professionals From the American Association/American Stroke Association. Stroke. 2013. 44(7):2064-89.
- 25. Nascimento K, Chavaglia S, Pires P, Ribeiro S, Marbosa M. Desfechos clínicos de pacientes com acidente vascular cerebral isquémico após terapia trombolítica. Acta Paul Enferm. 2016. 26(6):650-7
- 26. Nunes H, Funcionalidade e qualidade de vida em doentes vítimas de acidente vascular cerebral isquémico: estudo da influência do período de tempo decorrido entre alta clínica e saída efectiva, e do encaminhamento pós-hospitalar. Setembro. 2016. [cited 2019 Jun 2] Available from: https://eg.uc.pt/handle/10316/32230
- 27. Martino R, Foley N, Bhogal S, Diamant N, Speechley M, Teasell R. Dysphagia after stroke: incidence, diagnosis, and pulmonary complications. Stroke. 2005. 36(12), 2756-63.
- 28 Heruti RJ, Lusky A, Dankner R, Ring H, Dolgopiat M, Barell V, Levenkrohn S, Adunsky A. Rehabilitation outcome of elderly patients after a first stroke: effect of cognitive status at admission on the functional outcome. Arch Phys Med Rehabil. 2002 Jun 1;83(6):742-9.
- 29. Zwecker M, Levenkrohn S, Fleisig Y, Zeilig G, Ohry A, Adunsky A. Mini-Mental State Examination, cognitive FIM instrument, and the Loewenstein Occupational Therapy Cognitive Assessment: relation

to functional outcome of stroke patients. Arch Phys Med Rehabil. 2002 Mar 1;83(3):342-5.



THIS WORK IS LICENSED UNDER A <u>CREATIVE COMMONS ATTRIBUTION-NONCOMMERCIAL-NODERIVATIVES 4.0 INTERNATIONAL LICENSE</u>.

COPYRIGHT (C) 2020 PORTUGUESE REHABILITATION NURSING JOURNAL