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Specific health-related quality of life in Cerebrovascular accident survivors: associated factors

Qualidade de vida relacionada à saúde específica de sobreviventes de acidente vascular encefálico: fatores associados

Calidad de vida relacionada a la salud específica de supervivientes de accidente cerebrovascular: factores relacionados

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ABSTRACT

Objectives: to identify factors associated with specific health-related quality of life in cerebrovascular accident, or stroke, survivors. **Methods**: cross-sectional study, carried out with 160 cerebrovascular accident survivors. Data were collected using the Barthel Index, Cerebrovascular Accident Specific Quality of Life Scale, and semi-structured instruments for sociodemographic and clinical data, analyzed by descriptive and inferential statistics. **Results**: health-related quality of life was associated with work activity (p=0.027), physical activity (p=0.007), functional capacity (p≤0.001), presence of caregiver (<0.001), motor alteration (p ≤ 0.001) and rehabilitation (p=0.003). The functionally dependent people were 14.61 times more likely to present low health-related quality of life, and those with motor impairment were 3.07 times more likely. **Conclusions**: it was evidenced that functional dependence and motor impairment increase the chance of low health-related quality of life in cerebrovascular accident survivors.

Descriptors: Nursing; Cerebrovascular Accident; Quality of Life; Daily Activities; Survivors.

RESUMO

Objetivos: identificar os fatores associados à qualidade de vida relacionada à saúde específica de sobreviventes de acidente vascular encefálico. **Métodos:** estudo transversal, realizado com 160 sobreviventes de acidente vascular encefálico. Os dados foram coletados por meio do Índice de Barthel, Escala de Qualidade de Vida Específica para Acidente Vascular Encefálico e instrumento semiestruturado para os dados sociodemográficos e clínicos, analisados por estatística descritiva e inferencial. **Resultados:** a qualidade de vida relacionada à saúde associou-se à atividade laboral (p=0,027), atividade física (p=0,007), capacidade funcional (p≤0,001), presença de cuidador (<0,001), alteração motora (p ≤ 0,001) e reabilitação (p=0,003). As pessoas funcionalmente dependentes demonstraram 14,61 vezes mais chance de apresentar baixa qualidade de vida relacionada à saúde; e aquelas com alteração motora demonstraram 3,07 vezes mais chance. **Conclusões:** evidenciou-se que a dependência funcional e a alteração motora elevam a chance de uma baixa qualidade de vida relacionada à saúde em sobreviventes de acidente vascular encefálico.

Descritores: Enfermagem; Acidente Vascular Cerebral; Qualidade de Vida; Atividades Cotidianas; Sobreviventes.

RESUMEN

Objetivos: identificar factores relacionados a calidad de vida relacionada a salud específica de supervivientes de accidente cerebrovascular. **Métodos:** estudio transversal, realizado con 160 supervivientes de accidente cerebrovascular. Los datos fueron recolectados mediante el Índice de Barthel, Escala de Calidad de Vida Específica para Accidente Cerebrovascular e instrumento semiestructurado para los datos sociodemográficos y clínicos, analizados por estadística descriptiva e inferencial. **Resultados:** la calidad de vida relacionada a salud se relacionó a la actividad laboral (p=0,027), actividad física (p=0,007), capacidad funcional (p≤0,001), presencia de cuidador (<0,001), alteración motora (p ≤ 0,001) y rehabilitación (p=0,003). Las personas funcionalmente dependientes demostraron 14,61 veces más chance de presentar baja calidad de vida relacionada a salud; y aquellas con alteración motora demostraron 3,07 veces más chance. **Conclusiones:** se evidenció que la dependencia funcional y la alteración motora elevan la chance de una baja calidad de vida relacionada a la salud en supervivientes de accidente cerebrovascular.

Descriptores: Enfermería; Accidente Cerebrovascular; Calidad de Vida; Actividades Cotidianas; Sobrevivientes.

INTRODUCTION

Cerebrovascular accident (CVA), or stroke, is a relevant health problem in the world and stands out for its high incidence and high costs with hospitalization and rehabilitation, especially in developing countries[1]. Brazil, from January 2020 to January 2021 registered 184,536 hospitalizations due to stroke of which 49,469 were in the Northeast Region[2].

As a result of the advances in medicine and the innovation of emergency care strategies in Brazil[3], epidemiological data demonstrate a decrease in the mortality rate due to this illness[1]. However, stroke survivors are often affected by physical, neurocognitive, psychosocial, and behavioral sequelae[4] that require long-term rehabilitation[5-6].

The stroke sequelae can cause multiple losses, often compromising the Health-Related Quality of Life (HRQoL)[7]. This is related to the influence of a health condition or care intervention on the subjective experience of individuals in functional, cognitive, social, and psychological aspects, evidencing itself as an essential index of results after a stroke[8].

Usually, HRQoL instruments[3,6,8] investigate the impact of stroke. In Latin America, most studies use generic scales, but the scientific production recommends applying specific, validated instruments with adequate psychometric properties to measure the construct of HRQoL in this population[6,8]. That is because they are more sensitive to the peculiar multidimensional effects of a stroke, presenting more reliability in the survivor's perception of the stroke and providing important information for the rehabilitation process[8].

Given the above and the scarcity of studies that evaluate the HRQoL specific to stroke and its predictors, the relevance of research on this topic is evident, as it provides crucial inputs for health care planning. In this scenario, the role of the nursing team should be directed to the patient's rehabilitation through an individualized care plan, containing viable and effective interventions that allow the early identification of deficits and the reduction of the impact of sequelae, in order to contribute to the improvement of HRQoL after a stroke[9-11].

OBJECTIVES

To identify the factors associated with specific health-related quality of life in cerebrovascular accident survivors.

METHODS

Ethical aspects

This study followed Resolution 466/2012 of the National Health Council and was approved by the Research Ethics Committee. In addition, the participants signed the Free and Informed Consent Form.

Design, period, and place of study

This research is a cross-sectional study, quantitative, based on guided by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) tool, having been carried out in the Family Health Units (FHU) of the municipality of João Pessoa, state of Paraíba (PB), Brazil, between the months of July and November 2018.

Population or sample: criteria of inclusion and exclusion

The study population comprised survivors with stroke registered at the FHU in the city of João Pessoa, Paraíba, Brazil. For the sample calculation, the total number of hospitalizations due to stroke in the semester prior to data collection was distributed as a basis, in the hospital of the Unified Health System (SUS) of the municipality in question, which was equivalent to 231 admissions[12].

The sample size was defined using the calculation for a finite population with known proportions, based on a confidence interval of 95% ($\alpha = 0.05$), 50% ($p = 0.50$) of estimated prevalence and 5% (Error = 0.05) margin of error, equivalent to a sample with at least146 participants. It was also added 10% for possible losses or refusals, totaling 160 individuals.

The definition criteria have been defined: people accompanied at the FHU, have suffered the stroke for at least three months or more, who had at least one sequel resulting from the AVE, and age 18 years or older. The following exclusion criteria were defined: neurological comorbidity, aphasia, significant hearing deficit - on the verge of making it difficult to understand the instruments - and cognitive commitments tracked by the Mini-Mental State Examination (MMSE)[13].

Study protocol

The choice of participants took place through a draw, which caught 8 FHU from each of the five Health Districts of the city, understanding 40 randomly selected FHU. For capture the participants, the held a draw four participants by FHU were based on a list of all people with stroke sequelae, provided by nurses of the selected FHU. Later, the community health agent (CHA) contacted the selected individuals to invite them to participate in the study and schedule a time to answer the instruments.

Was used, a semi-structured instrument to investigate the socio-demographic and clinical data of the study participants. The Barthel Index was applied to assess the individual level of disability. This instrument consists of ten items, each answer presents a specific score, with a total value from 0 to 100 points[14]. The present study considered the following classification: independent (100 points) and dependent (< 100 points).

The CVA-Specific Quality of Life Scale (SQoL-CVA) was applied to assess the specific HRQoL after stroke. Questionnaire composed by 49 items distributed in 12 domains: Self-care, Work/productivity, Language, Vision, Mobility, Energy, Family role, Mood, Reasoning, Social role, Upper limb function and Personality. The quantification of responses is through a type Likert scale from 1 to 5 points, with value from 49 to 245[15]. For HRQoL classification, low HRQoL presented scores below 60%, which corresponds to 147 points[16].

Analysis of results and statistics

The study's dependent variable was defined as HRQoL, while the independent variables were functional capacity and stroke survivors' sociodemographic and clinical variables.

The data were double entered into the Microsoft Excel program. Later, they were transferred into the Statistical Package for the Social Sciences® (versão 22.0) software, and analyzed using descriptive statistics (absolute and relative frequency, mean, and standard deviation) and inferential statistics (Pearson's chi-square or Fisher's exact test when the cells had number equal to or less than 5; and multiple logistic regression). In all analyses, a *p*-value < 0.05 was established to define statistical significance.

A multivariate analysis was also performed to assess the chances of occurrence of the outcome "poor HRQoL". To this end, we applied the logistic regression model adjusted by the backward method, with a confidence interval of 95%. To insert the independent variables in the modeling, a p-value < 0.02 was adopted as a criterion in the bivariate analyses.

RESULTS

We identified low HRQoL after stroke among the study participants (146.55; ±39.05), and Cronbach's alpha was 0.91. There was a prevalence of low HRQoL (51.2%). The most affected HRQoL domains after stroke were Social role (2.10; ±0.74) and Family role (2.26; ±1.09).

Table 1 describes the association between HRQoL and the sociodemographic variables. It was observed that there was a statistical association between HRQoL and Labor activity (p = 0.027).

In the association between HRQoL with life habits and health status, a statistical association was identified with Physical activity (p = 0.007), Functional capacity (p ≤ 0.001), and Caregiver presence (< 0.001) (Table 2).

Table 3 shows the data on the association between HRQoL and stroke characteristics. There was a statistical association of HRQoL with Motor alteration (p ≤ 0.001) and Rehabilitation after hospital discharge (p = 0,003).

Table 1 - Association between sociodemographic variables and health-related quality of life of people with stroke sequelae, João Pessoa, Paraíba, Brazil, 2018, (N = 160)

Variables	HRQoL Low n (%)	HRQoL Medium/High n (%)	*p* value
Gender			0.994*
Female	40 (51.3)	38 (48.7)	
Male	42 (51.2)	40 (48.8)	
Age range			0.319*
< 60 years	11 (42.3)	15 (57.7)	
60 years or more	71 (53.0)	63 (47.0)	
Marital status			0.540*
With partner	74 (52.1)	68 (47.9)	
No partner	8 (44.4)	10 (55.6)	
Education			0.709*
Literate	75 (51.7)	70 (48.3)	
Illiterate	7 (46.7)	8 (53.3)	
Labor activity			0.027*
Yes	11 (33.3)	22 (66.7)	
No	71 (55.9)	56 (44.1)	
Individual income			0.570*
Up to 1 minimun wage	54 (52.9)	48 (47.1)	
> than 1 minimun wage	28 (48.3)	30 (51.7)	

** Pearson's chi-square test; HRQoL – Health-Related Quality of Life.*

Table 2 - Relationship between health-related quality of life, life habits and health status of people with stroke sequelae, João Pessoa, Paraíba, Brazil, 2018, (N = 160)

Variables	HRQoL Low	HRQoL Medium/High	*p* value
Consumption of alcoholic beverages			0.057**
Yes	4 (25.0)	12 (75.0)	
No	78 (54.2)	66 (45.8)	
Smoking			0.100**
Yes	1 (7.7)	12 (92.3)	
No	81 (55.1)	66 (44.9)	
Physical activity			0.007*
Yes	5 (23.8)	16 (76.2)	
No	77 (55.4)	62 (44.6)	
Self-reported health status			0.101**
Dissatisfied	61 (70.1)	26 (29.9)	
Neither satisfied nor dissatisfied	15 (31.9)	32 (68.1)	
Satisfied	6 (23.1)	20 (76.9)	
Number of morbidities			0.073*
0-2	61 (46.9)	69 (53.1)	
3 or more	21 (70.0)	9 (30.0)	
Functional Capability			**< 0.001****
Dependent	80 (59.7)	54 (40.3)	
Independent	2 (7.7)	24 (92.3)	
Caregiver Presence			**< 0.001***
Yes	73 (73.0)	27 (27.0)	
No	9 (15.0)	51 (85.0)	

** Pearson's chi-square test; ** Fisher's exact test; HRQoL – Health-Related Quality of Life.*

Table 3 - Relationship between health-related quality of life and stroke characteristics, João Pessoa, Paraíba, Brazil, 2018, (N = 160)

Variables	HRQoL Low	HRQoL Medium/High	*p* value
Latest stroke			0.100*
3-6 months	30 (76.9)	9 (23.1)	
> 6 months	52 (43.0)	69 (57.0)	
Amount of stroke			0.787*
1 episode	53 (50.5)	52 (49.5)	
2 or more	29 (52.7)	26 (47.3)	
Types of sequelae			
Motor alteration			**< 0.001***
Yes	66 (62.3)	40 (37.7)	
No	16 (29.6)	38 (70.4)	
Muscle weakness			0.516*
Yes	41 (53.9)	35 (46.1)	
No	41 (48.8)	43 (51.2)	
Sensitivity deficit			0.060*
Yes	25 (65.8)	13 (34.2)	
No	57 (46.7)	65 (53.3)	
Mood Disorder			0.241*
Yes	21 (60.0)	14 (40.0)	
No	61 (48.8)	64 (51.2)	
Visual alteration			0.361*
Yes	16 (59.3)	11 (40.7)	
No	66 (49.6)	67 (50.4)	
Dysphagia			0.132*
Yes	14 (40.0)	21 (60.0)	
No	68 (54.4)	57 (45.6)	
Facial paralysis			0.057*
Yes	5 (29.4)	12 (70.6)	
No	77 (53.8)	66 (46.2)	
Did/does rehabilitation after hospital discharge			0.003*
Yes	53 (62.4)	32 (37.6)	
No	29 (38.7)	46 (61.3)	

** Pearson's chi-square test; HRQoL – Health-Related Quality of Life.*

Table 4 shows the multiple logistic regression model for low HRQoL. It was included in the model only the variables that showed p < 0.02 in the bivariate analyses (Physical activity, Functional capacity, Caregiver presence, Motor impairment, and Did/does rehabilitation after hospital discharge). The variables that remained in the adjusted model were Functional capacity (OR= 14.162; 95% CI= 3.150 - 63.672) and Sequelae - Motor alteration (OR = 3.079; 95% CI = 1.452-6.528).

Table 4 – Variables associated with low Health-Related Quality of Life by means of adjusted logistic regression, João Pessoa, Paraíba, Brazil, 2018, (N = 160)

Variables	OR	CI	*p* value*
Functional Capability			0.001
Independent	1.00	-	
Dependent	14.16	3.15-63.67	
Motor alteration			0.003
Yes	3.07	1.45-6.52	
No	1.00	-	

*OR – Odds Ratio; CI - confidence interval; * test significance.*

DISCUSSION

The HRQoL is a significant and relevant multidimensional health assessment for the community and health systems[8]. Chronic illnesses such as stroke require long-term supervision[17], including HRQoL monitoring through the use of a specific instrument[8]. That is a valuable tool for nursing, as it helps to understand the individual's perception of their health and rehabilitation process[6,8].

In the present study, we identified low HRQoL specific to stroke. A systematic review with meta-analysis showed that most studies demonstrate equivalent results despite the progression in stroke treatment[18]. Stroke may cause of reduced disability-related life years, and its sequelae cause physical and psychosocial repercussions that often deteriorate HRQoL[6,18]. The compromised individual perception of HRQoL can interfere in therapeutic adherence, which increases the risk of disease recurrence[17].

In evaluating the HRQoL domains after the stroke, Social and Family roles were most compromised, corroborating national and international studies[6,19]. The domain Social role concerns leisure, socializing with friends, sexual relationships, and physical condition interference in the social life. The Family Role domain concerns issues related to having fun with the family, feeling of being a burden to family members, and the influence of physical condition on personal life[15].

The low HRQoL in those domains is justified by the predominance of older people in the sample and high functional impairment. After a stroke, older adults tend to become isolated because they are more vulnerable to chronic health situations, such as impaired physical integrity, cognitive deficits, depression, and anxiety disorders, which increases the chance of reducing social and family life[20]. Furthermore, the limitations resulting from the stroke usually hinder the person's return to their social activities[21].

This study evidenced the association between low HRQoL and the absence of labor occupation. Among the consequences of the stroke is the reduced ability to return to work[17]. Previous studies have identified that people who did not return to labor were more prone to mood disorders and to experience limitations in family and community interaction, as well as financial problems and dissatisfaction with life, with a consequent decline in HRQoL[17,22].

Among the lifestyle variables, a statistical relationship was observed between low HRQoL and sedentariness. In stroke, the sequelae can lead to physical inactivity; however, it is recommended that people in this context participate in continuous physical exercise programs, for the routine of healthy practices can prevent the occurrence of a new stroke, favor reintegration into the community, and help maintain functional independence[23].

A relationship between low HRQoL and functional dependence was identified. The logistic regression data infer that functionally dependent people are 14.61 times more likely to present a low HRQoL. The literature points out that functional capacity is one of the main determinants of HRQoL after stroke since it influences the physical and mental dimensions that sustain autonomy and independence[6,16,21].

The functional disability after stroke occurs due to sequelae, which can be sensory, motor and/or cognitive[10]. These damages interfere with self-care, social interaction, the development of the family role, and labor[7], resulting in losses in the execution of previously performed activities. In addition, such sequelae predispose to illnesses such as depression, anxiety, and stress, which increase the risk for a low HRQoL[24].

In this sense, the periodic assessment of functional capacity becomes essential because it helps nurses and other professionals identify each patient's functional profile, which the planning of individual and systemic actions with strategies for making effective clinical decisions [11,20-21].

The need for a caregiver was associated with lower mean HRQOL. The frequent functional limitation justifies the need for assistance from others among stroke survivors[24]. Moreover, the overprotective behavior common among caregivers may limit autonomy and self-care, causing a feeling of helplessness and frustration in front of the daily limitations, negatively affecting HRQoL[25].

Motor impairment had a negative impact on the participants' HRQoL. People with motor impairment were 3.07 times more likely to have a low HRQoL. This sequela compromises mobility, generating restrictions in social participation, emotional impacts due to the feeling of loss, decreased self-esteem, and changes in routine, which justifies the statistical association with low levels of HRQoL[26]. Thus, the use of strategies to benefit motor function and mobility is a helpful mechanism that positively contributes to the well-being of people after a stroke[21,27].

The association between low HRQoL and the absence of rehabilitation after hospital discharge was evidenced in the study. In Brazil, although the availability of professionals and services focused on rehabilitation is increasing in the public health sector, access to assistance is still scarce and inequitable[28], a fact that can cause insecurity regarding the prognosis and permanent sequelae[29].

The sequelae rehabilitation should begin immediately after the event since, commonly, the recovery of limitations occurs in the first months[30]. This process should be introduced in the hospital environment and, after discharge, should be extended to other levels of healthcare through the provision of multidisciplinary care to ensure comprehensive and continuous assistance to reverse the limitations and/or alleviate the sequelae[28-29].

In this context, the nurses' participation in the care process for stroke survivors is indispensable. It is up to them to evaluate the patient and the risk factors for an committed HRQoL,

besides welcoming the singularity that involves the experience of stroke survivors, considering cultures and beliefs, building a comprehensive and individual care plan that benefits the HRQoL of this population segment[10,16].

Study limitations

As a limitation, this study does not conceives a cause and effect relationship the variables; and the exclusion of stroke survivors with neurological comorbidities, cognitive deficits, significant hearing impairment, and aphasia makes it impossible to generalize the results.

Contributions to the Fields of Nursing, Health or Public Policy

The study contributes with relevant data for the production of knowledge in health sciences and nursing, in the perspective of reflections about the importance of using a specific instrument to assess HRQoL after stroke and the factors potentializing the negative impact of this morbidity on the survival of these people.

We emphasize the importance of considering the results of this study for the benefit of this population, using them as a guide for planning biopsychosocial interventions that can effectively intervene in the specific HRQoL of stroke survivors. Furthermore, the present study provides subsidies for the elaboration of public policies and health management to favor the treatment, rehabilitation, social reintegration, and well-being of this population.

CONCLUSIONS

The results of the present work demonstrated most participants presented low HRQoL, with more significant impairment in social and family roles. The absence of work activity, sedentarism, functional dependence, caregiver presence, motor sequela, and absence of rehabilitation after hospital discharge were associated with a reduced HRQoL. Moreover, it was evidenced that functionally dependent people are 14.61 times more likely to present low HRQoL, and those with motor alteration were 3.07 times more likely to present low HRQoL.

Thus, the HRQoL of stroke survivors may suffer influence by multiple factors, which must be identified to guide health professionals, especially nurses to plan and implement interventions that reduce the negative repercussions of this injury, favoring HRQoL.

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SUPPLEMENTARY MATERIAL

https://repositorio.ufpb.br/jspui/handle/123456789/18868

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