

Effect of group care in the quality of life and functional capacity of patients after stroke

Efeito do atendimento em grupo na qualidade de vida e capacidade funcional de pacientes após AVC

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RESUMO | INTRODUÇÃO: O Acidente Vascular Cerebral (AVC) é considerado a segunda doença mais incapacitante do mundo, podendo causar diversas sequelas. Nesse sentido, o atendimento fisioterapêutico em grupo se configura como uma estratégia promissora e viável dentro do processo de reabilitação dos indivíduos acometidos. **OBJETIVO:** Avaliar o nível de qualidade de vida e capacidade funcional antes e após uma intervenção fisioterapêutica em grupo em pacientes com sequelas de AVC. **MÉTODOS:** Trata-se de uma análise retrospectiva de prontuários, realizada a partir da coleta de dados referentes à capacidade funcional (Índice de Barthel Modificado), e qualidade de vida (EQVE-AVE) de pacientes vítimas de AVC que realizaram um protocolo de atendimento fisioterapêutico em um ambulatório entre setembro de 2016 até agosto de 2017. **RESULTADOS:** 27 prontuários atenderam aos critérios estabelecidos. No que tange aos resultados referentes à capacidade funcional dos indivíduos, foi possível notar diferença significativa nos itens de: Alimentação; higiene pessoal; banho; vestir-se, além do score total do Índice de Barthel Modificado. Observou-se também melhora significativa em aspectos referentes a qualidade de vida nos seguintes itens: Energia; linguagem; mobilidade; memória/concentração, além do score total da escala de avaliação EQVE-AVE. **CONCLUSÃO:** Identificou-se melhora no nível de qualidade de vida e capacidade funcional de indivíduos que sofreram AVC após realização de um protocolo de atendimento fisioterapêutico em grupo em um ambulatório.

PALAVRAS-CHAVE: Acidente Vascular Cerebral. Qualidade de Vida. Prática de grupo. Fisioterapia.

ABSTRACT | INTRODUCTION: Stroke is considered to be the second most disabling disease in the world and can cause several sequelae. In this sense, group physiotherapeutic care is a promising and viable strategy within the process of rehabilitation of affected individuals. **OBJECTIVE:** To evaluate the level of quality of life and functional capacity before and after a group physiotherapeutic intervention in patients with stroke sequelae. **METHODS:** This is a retrospective analysis of medical records, carried out based on the collection of data on functional capacity (modified Barthel Index) and quality of life (EQVE-AVE) of stroke victims who performed a protocol of physiotherapeutic care in an outpatient clinic between September 2016 and August 2017. **RESULTS:** 27 medical records met the established criteria. Regarding the results regarding the functional capacity of the individuals, it was possible to notice a significant difference in the items of: Feeding; personal hygiene; shower; dress, in addition to the total score of the Modified Barthel Index. There was also a significant improvement in aspects related to quality of life in the following items: Energy; language; mobility; memory / concentration, in addition to the full EQVE-AVE score scale. **CONCLUSION:** It was identified an improvement in the level of quality of life and functional capacity of individuals who suffered from stroke after a protocol of physiotherapeutic care in a group in an outpatient clinic.

KEYWORDS: Stroke. Quality of Life. Group Practice. Physical therapy specialty.

Introduction

Stroke is clinically defined as a rapid and abrupt onset syndrome, leading to vascular or focal vascular dysfunction¹. In the face of a high amount of chronic health conditions, stroke is considered to be the second most disabling disease in the world, and may cause changes in fine and gross motor function, language, gait, mood, perception, cognition and daily life activities^{2,3}.

Regarding the natural process of the disease and its sequels, there are several aspects that are affected in the individual and need to be analyzed with attention, among them is Quality of Life (QoL). According to the WHO, QoL is characterized as the subjective physical, mental and emotional perception that the individual has regarding their current life situation, including their limitations, goals, expectations and concerns. Therefore, it is important to study and evaluate the QoL in this profile of patients where the limitations are frequent and intense^{2,4}.

Another relevant aspect to evaluate and guide the therapeutic approach is the functional capacity, defined as the mental and physical ability of the individual to perform their self-care, preserving their independence and autonomy to perform everyday activities⁵.

In order to minimize the gap in the Brazilian public health care gap, group care is a viable possibility because it allows a greater number of patients to be considered through a better cost-benefit for the service, and can be defined as a type of therapy involving more than 2 patients, who usually present a similar degree of functional capacity, performing specific exercises simultaneously under the supervision of a trained professional⁶.

Group physiotherapeutic care has been shown to be efficient in a series of diseases, because it enhances individuals' abilities, helps to develop autonomy and coping with the suffering involved in the natural process of disease^{7,8}. Therefore, this study aims to analyze the effect of group care on QoL and functional capacity of patients with stroke sequelae.

Material and methods

This study is a retrospective analysis of medical records. Held in the Ambulatory Professor Francisco Magalhães Neto (AMN), located in the city of Salvador-BA. The study was approved by the research ethics committee of University Hospital Prof. Edgard Santos, Federal University of Bahia (HUPES / UFBA), in August 2017 under the protocol 122849/2017 and CAAE number: 78949617.0.0000.0049 in accordance with the norms of Resolution 196/96 of the National Research Ethics Council (CONEP).

This study was carried out by collecting data from the medical records of all stroke victims who were admitted through the Unified Health System (SUS) to perform a group physical therapy protocol in the AMN in the period of September 2016 until August 2017. Patients were recruited through the waiting list available in the outpatient database, and the evaluations were carried out from June to August 2016, using non-probabilistic sampling for convenience.

The parameters used by the service for patient admission were: age between 18 and 80 years; male or female; clinical neurological diagnosis of stroke; walking ability with or without gaiters. However, the individuals who presented a score below 24 in the Mini Mental State Examination were not admitted to the service. The inclusion criteria for the analysis of the present study were: Records in which the data were fully reported; 75% presence in the visits during the protocol, and the exclusion criteria were: Individuals who presented other associated neurological pathologies; individuals who were performing another rehabilitation program simultaneously to group physiotherapeutic care.

Before the search in the database, we analyzed 42 medical records, and according to the established inclusion and exclusion criteria, 27 medical records were selected for analysis, considering information about demographic data and evaluation scales used.

The subjects who had the charts analyzed in this study participated in a group therapy protocol in which each group consisted of a maximum of five patients, where each session lasted 1 hour at a frequency of twice a week, totaling twenty during the ten-week period.

Attendance was performed by two physiotherapists with experience in the area through a specific protocol for stroke patients, divided into three stages by level of task complexity, based on the following variables: strength, stretching, mobilization, integration exercises, diagonals, dissociation of waists, discharge of weight, balance, gait and functional exercises. It is worth emphasizing that the individual only advanced in level when he was able to fulfill all the tasks established, however, when it was not possible, the professional used specific adaptations respecting the limitations expressed by individuals.

During the rehabilitation program, the individuals performed two evaluations, the first occurred at the time of admission to the service and the second evaluation at the end of the rehabilitation protocol. The two evaluations investigated the level of functional capacity through the Modified Barthel Index and quality of life through the EQVE-AVE scale, seeking to identify whether group physiotherapeutic care directed to patients who suffered stroke was able to alter these outcomes. Although the visits were performed in a group, the present study stopped to evaluate the results of the evaluation scales individually, comparing the individual's score before and after the service protocol, and the evaluations were performed by a single evaluator at the outpatient clinic where the intervention occurred.

The Barthel Index Modified is a widely used instrument to evaluate the level of functional dependence, is a tool with easy application and high degree of validity and reliability. In this scale are evaluated activities such as: food; personal hygiene; use of the bathroom; shower; continence of the anal sphincter; bladder sphincter continence; dress up; bed-chair transfers; up and down scales; (alternative to ambulation), having a score of 10, corresponding to the total dependence up to 50, equivalent to the total independence⁵.

The specific QOL scale for stroke (EQVE-AVE) is a specific instrument transculturally adapted for Brazil and contains 12 domains, namely: energy; family role; language; mobility; humor; personality; self-care; social role; reasoning; upper limb function; view; work / productivity, with scores varying from 49 to 245, being the result of quality of life directly proportional to score¹.

Data were analyzed using SPSS version 21.0 for Windows. Data presentation occurred in the form of absolute frequency and / or relative frequency for categorical variables and measures of central tendency and dispersion for continuous variables. Initially, the data were tested for normality of distribution using the Shapiro-Wilk test, thus, t-test or Wilcoxon test were used for group comparisons before and after treatment. Quantitative variables were described by mean (standard deviation) or mediated (percentile 25-75) according to the normality of the data. Mean is used for normal and median data for non-normal data. The level of statistical significance was set at $p < 0.05$.

Results

We analyzed 42 medical records of stroke patients who underwent a group physiotherapeutic care protocol from September 2016 to August 2017, of which 27 medical records met the established criteria, being a summary of the sociodemographic and health characteristics of patients exposed in table 1. Regarding the results regarding the functional capacity of the individuals, it was possible to notice a significant difference in the items of: Feeding; personal hygiene; shower; dressing, in addition to the total score of the Modified Barthel Index, as presented in Table 2. Finally, there was also a significant improvement in aspects related to quality of life, being the items of: Energy; language; mobility; memory / concentration, in addition to the full EQVE-AVE score scale.

Table 1. Clinical and sociodemographic characteristics of participants included in the study.

Variables	n (%)	Average (\pmDP)
Age – (years)		53,4 (\pm 9,8)
Stroke time (months)		74,5 (\pm 8,3)
Gender – (n)		
Male	13 (48,1)	
Female	14 (51,9)	
Civil Status		
Not married	11 (40,7)	
Married	13 (48,1)	
Divorced	03 (11,1)	
Occupation		
Paid work	01 (3,7)	
Retired	10 (37)	
Unemployed	02 (7,4)	
Others	14 (51,9)	
Type of Stroke		
Ischemic	21 (77,8)	
Hemorrhagic	06 (22,2)	
Previous pathological history		
Neither	03 (11,1)	
Hypertension	09 (33,3)	
Cardiopathy	01 (3,7)	
More than 1 associated disease	14 (51,9)	

DP = Standard deviation

Table 2. Values regarding functional capacity before and after physiotherapeutic intervention through the Modified Barthel Index.

DOMAINS	Before	After	p
Feeding	4,2±0,6	4,4±0,5	0,04*
Beauty Treatment	4,6±0,6	4,8±0,3	0,03*
Bathroom Use	4,8±0,3	4,9±0,1	0,16
Bathing	4,8±0,3	5,0±0,1	0,04*
Fecal Continence	5,0±0,1	5,0±0,1	1,00
Continence Vesical	4,6±0,6	4,6±0,6	1,00
Dress up	4,2±0,9	4,6±0,6	0,01*
Displacement	4,8±0,4	4,9±0,1	0,18
Up/Down Stairs	4,7±0,5	4,8±0,3	0,10
Ambulation	4,8±0,3	4,9±0,2	0,32
Total	46,9±2,8	48,3±1,4	0,002*

Average (±DP); Paired T Test; *p<0,05.

Table 3. Values referring to quality of life before and after physiotherapeutic intervention through the EQVE-AVE scale.

DOMAINS	Before	After	p
Energy	8 (4-11)	11 (8-15)	0,005*
Family Roles	7 (5-11)	7 (4-11)	0,254
Language	18 (12-20)	20 (15-23)	0,032*
Mobility	18 (15-22)	21 (16-24)	0,002*
Humor	17 (10-19)	15 (11-21)	0,784
Personality	9 (4-12)	10 (3-15)	0,266
Self Care	23 (18-25)	24 (20-25)	0,122
Social Papers	9 (6-15)	9 (5-14)	0,403
Memory / Concentration	8 (6-11)	9 (6-13)	0,026*
Function of MMSS	21 (17-23)	21 (17-24)	0,943
View	14 (11-15)	14 (11-15)	0,916
Work / Productivity	10 (7-13)	11 (7-15)	0,173
Total	155(144-178)	176 (140-200)	0,006*

EQVE-AVE - Specific Quality of Life Scale for Vascular Brain Accident; MMSS - Upper limbs; Median (percentile 25-75); Wilcoxon test; *p<0,05.

Discussion

The outpatient physiotherapeutic care in a group, through a protocol of ten weeks of intervention, was shown to be able to improve parameters related to functional capacity and quality of life of patients after stroke episode, thus, it is demonstrated that this type of modality of treatment is feasible and beneficial for this population.

Taking into account that stroke is an important public health problem and generates high costs for health services, especially in a large country such as Brazil, which proposes to offer a universal health system, studies show that care group therapy may be a strategy to reduce public spending, assuming that fewer professionals are required to perform this type of approach when compared to individualized care^{6,8}.

In the present study, the mean age was 53.4 (\pm 9.8) years, in addition to an average of 74.5 (\pm 8.3) months of stroke occurring, constituting a profile of chronic patients. Although some authors show in their studies that aging is an additional risk factor for the onset of cerebrovascular diseases, this study did not present a population of elderly patients^{9,10}. Possibly, this factor may have been influenced by the outpatient profile, taking into account aspects of individual autonomy, urban mobility, accessibility, among other barriers and environmental facilitators.

Despite the divergence of the literature on the occurrence of stroke in relation to sex, this study corroborates findings that show a predominance of males^{11,12}. In addition, the majority of the individuals in this study presented ischemic stroke (77.8%), demonstrating proximity to data from the literature that indicate a prevalence of 80% of ischemic stroke and 20% of bleeding episodes³.

The exercise protocol used in the present study enabled the patients to participate actively in various therapeutic activities, under the supervision of a physiotherapist. In this sense, studies carried out in hospitals and a reference center for stroke showed that group care leads to a greater time for active tasks performed by patients, longer total session time and better cost-effectiveness when compared to individualized care. Therefore, because most

of the studies performed with stroke patients are organized by protocols, the modality that uses the intervention time better has a greater potential to obtain the expected results^{6,13}.

Still on the protocol of care used by the service in the protocol, characteristics regarding the parameters of duration of the intervention, attendance frequency and duration of the sessions are similar to studies that also intervened in a population after stroke through group visits, in that sense, reliability and safety are conferred to the patients assisted^{14,15}.

It is known that after an episode of stroke, the capacity for reorganization of the nervous system through neuroplasticity reaches its peak in the first six months of the injury episode¹⁶, however, this study has shown that group physiotherapeutic care is able to improve the functionality and quality of life in chronic patients, corroborating with other studies, which, in addition to these outcomes, also improved balance, mobility, gait and lower limb strength in the same patient profile^{6,17,18}.

In the present study, there was a decrease in the score of the humor item and a non-significant increase in the personality item, diverging from findings in the literature that affirm that group care allows potential gains in relation to social interaction, socialization and affectivity, due to the fact to provide moments of reflection and exchange of experiences between participants^{13,19}.

Still weaving on the social interaction existing in the group therapy environment, a significant improvement of the items of language and memory / concentration was observed, in this sense, it is possible to affirm that even the activities proposed in the protocol are not directed to elements of speech or memory activities, this change can be credited to the stimulus of expression, communication, interaction, memory and concentration to perform the behaviors offered in the group environment⁸.

Studies show that physical therapy care in the group presents gains in LMH functions^{6,20,21}, however, there is still little evidence that shows functional gains in MMSS functions in this service format, despite this, our study observed a significant improvement in tasks directly associated with the function of MMSS

through the Modified Barthel Index, expressed in the items of feeding, personal hygiene, bathing and dressing, however, the MMSS function item of the quality of life scale did not change.

Probably, the difference in the findings regarding the MMSS function among the scales used in this study can be explained by the complexity of the tasks evaluated, where the EQVE-AVE scale, related to QOL, explores fine and elaborated activities, while the modified Barthel scale, related to functional capacity, stops to evaluate gross motor activities.

The present study identified a significant improvement of the mobility and energy items of the quality of life scale and increase of walking and climbing items, but without significance, converging with findings from the literature in which they identified that group care performed at from training in the circuit obtained an improvement in physical fitness, mobility, lower limb strength, gait velocity and resistance^{22,23}. Possibly, the non-significant increase in walking and climbing stairs mentioned above can be explained by the high score already found on the admission of these patients.

Taking into account that the chronic profile population analyzed in this study demonstrated positive results related to functional capacity and quality of life, group physiotherapeutic care has also shown its promising character in studies with a population of acute and subacute patients, in this sense, among the found, we can mention improvements in: mobility, walking speed, distance traveled, lower limb function and balance, pointing to a satisfactory potential of this type of approach^{14,21,24}.

Although the evaluation scales used in this study are validated tools and widely disseminated in the literature, the fact that the individual responds to the instruments based on the individual perception about information about the quality of life and functional capacity gives margin to the presence of subjectivity in the results. The absence of a depression scale is a limitation presented by the service in which the group services were performed, taking into account that there is a direct link between depression and quality of life, however, failure to complete some medical records can be understood as a limitation of the study, because it limits the sample analyzed.

Conclusion

This study based on a retrospective analysis of medical records identified an improvement in the level of quality of life and functional capacity of stroke patients after a group physical therapy protocol in an outpatient clinic.

Author contributions

Nascimento HS carried out the data collection, design, interpretation of the results and the writing of the scientific article. Ribeiro NMS participated in the design and supervised the construction of the article.

Competing interests

No financial, legal or political competing interests with third parties (government, commercial, private foundation, etc.) were disclosed for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.).

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