ORIGINAL ARTICLE

The concurrent validity of the Stroke Self-Efficacy Questionnaire Brazil (SSEQ-B) in brazilian stroke survivors

Validade concorrente do Stroke Self-Efficacy Questionnaire Brazil (SSEQ-B) em brasileiros acometidos pelo acidente vascular cerebral

Pedro Henrique Deon[1], Bianca Pacheco Loss[1], Eliana da Silva Jaques[1], Janete de Souza Urbanetto[1], Marina Portugal Makhoul[2], Camila Torriani-Pasin[2], Régis Gemerasca Mestriner[1]

ABSTRACT

The Stroke Self-Efficacy Questionnaire Brazil (SSEQ-B) is designed to assess the self-efficacy of functional performance after stroke. **Objective:** To evaluate the concurrent validity of the SSEQ-B in Brazilian stroke survivors in relation to gold-standard measures of instrumental and basic daily living activities as well as quality of life after stroke. **Methods:** The concurrent validity of the SSEQ-B was tested using the Frenchay Activity Index (FAI), Barthel Index (BI) and Stroke Specific Quality of Life Scale (SS-QOL). Descriptive statistics, the Spearman's coefficient index, Intraclass correlation coefficient (ICC), Cronbach alpha and achieved post-hoc power (1-ß) analyses were conducted. **Results:** Seventy-five stroke survivors aged 66.64 ± 12.97 years were included in this study. Total scores from the SSEQ-B were strongly correlated with the FAI (ICC= 0.8 / r= 0.72 / 1-ß= 1.0) and BI (ICC= 0.68 / r= 0.68 / 1-ß= 0.99), but weakly correlated with SS-QOL (ICC= 0.46 / r= 0.65 / 1-ß= 0.94), which suggests stroke self-efficacy is more closely associated with instrumental and daily living activities than the quality of life. **Conclusion:** The SSEQ-B exhibits good concurrent validity with instrumental and daily living activities and could be useful when assessing stroke self-efficacy in Brazilians.

Keywords: Stroke, Activities of Daily Living, Surveys and Questionnaires, Rehabilitation

RESUMO

O Stroke Self-Efficacy Questionnaire Brazil (SSEQ-B) foi desenvolvido para avaliar a autoeficácia no desempenho funcional depois do Acidente Vascular Cerebral (AVC). **Objetivo:** avaliar a validação concorrente do SSEQ-B em sobreviventes brasileiros de AVC em relação a avaliações padrão áureo de atividades de vida diárias e instrumentais assim como a qualidade de vida pós-AVC. **Métodos:** A validação concorrente do SSEQ-B foi avaliada utilizando o Índice de Atividade Frenchay (FAI), o Índice de Barthel (BI) e a Qualidade de Vida pós-AVC (SS-QOL). As análises de estatística descritiva, índice de coeficiente Spearman's, coeficiente de correlação intraclasse (ICC), alpha de Cronbach e potência post-hoc alcançada foram conduzidas. **Resultados:** Setenta e cinco sobreviventes de AVC com idade de 66.64 ± 12.97 anos foram incluídos neste estudo. A pontuação total do SSEQ-B foi correlacionada significativamente com o FAI (ICC= 0.8 / r= 0.72 / 1-ß= 1.0), BI (ICC= 0.68 / r= 0.68 / 1-ß= 0.99) e SS-QOL (ICC= 0.46 / r= 0.65 / 1-ß= 0.94), o que sugere que a autoeficácia de sobreviventes de AVC está associada com as atividades de vida diárias e instrumentais. Porém, há fraca correlação com a qualidade de vida desta amostra. **Conclusão:** O SSEQ-B exibe uma boa validação concorrente com as atividades de vida diárias e instrumentais e parece ser útil na avalição da autoeficácia em sobreviventes de AVC residentes no Brasil.

Palavras-chaves: Acidente Vascular Cerebral, Atividades Cotidianas, Inquéritos e Questionários, Reabilitação

[1] Pontifícia Universidade Católica do Rio Grande do Sul - PUCRS
[2] Escola de Educação Física e Esporte, Universidade de São Paulo - EEFE USP

Address for correspondence
Régis Gemerasca Mestriner
E-mail: regis.mestriner@pucrs.br

Submitted: August 5, 2021
Accepted: October 10, 2022

How to cite
Deon PH, Loss BP, Jaques ES, Urbanetto JS, Makhoul MP, Torriani-Pasin C, et al. The concurrent validity of the Stroke Self-Efficacy Questionnaire Brazil (SSEQ-B) in brazilian stroke survivors. Acta Fisiatr. 2022;29(4):289-294.

10.11606/issn.2317-0190.v29i4a189166

INTRODUCTION

Stroke is a cerebrovascular disease closely associated with morbidity and mortality,[1] being a leading cause of long-term neurological deficiency worldwide. The disease is responsible for approximately 5% of all disability-adjusted life years (DALYs) and 10% of deaths across the globe.[2] While acute stroke health care has improved, long-term disability is still a challenge in neurorehabilitation.[3]

Stroke often induces emotional-related issues such as depression,[4] feelings of movement incapacity, reduced mobility[5] and independence in daily living activities (ADLs).[6,7]

For instance, depression in individuals after stroke is frequent and affects the rehabilitation process, recovery levels and quality of life.[8] One third of stroke survivors experience disability[9] and social restriction in the first year after stroke.[10]

Typically, stroke survivors need to adjust their daily life routine[6] learn new behaviors and change their lifestyle.[11] As a result, caregivers and families are typically overloaded.[12] A study conducted in Latin America suggests 20% to 39% of stroke survivors exhibit moderate to severe functional deficits[12] and need long-term care, which might impair their self-efficacy after stroke.[5,6,9]

Self-efficacy is defined as an individual's beliefs regarding their capacity to produce designated levels of performance in a task or context that influences their lives.[13] Self-efficacy is a concept that influences how people think, feel, motivate themselves, and act,[14] including the cognitive, motivational, and affective processes, among others.[13] Perceived self-efficacy seems to act as a cognitive mediator of action,[9] as it influences behavioral changes[11] and is associated with social, psychological, and functional performance.[9]

Low levels of self-efficacy have been associated with depressive symptoms and dependence,[15] while high levels are associated with better performance in ADL, lower incidence of falls, mood disorders,[9] quality of life and rehabilitation adherence.[10] Having an understanding of an individual's self-efficacy may help health care professionals tailor assistance to an individual stoke survivor's needs particularly in relation to dealing with frustration,[11] which are important aspects in stroke rehabilitation.[5,10]

The Stroke Self-Efficacy Questionnaire (SSEQ) was originally developed in the United Kingdom by Jones et al.[11] The SSEQ is a self-report assessment for stroke survivors that measures confidence in two important factors for rehabilitation and independence after stroke:[5] activity and self-management levels.[11] The questionnaire can identify those individuals requiring healthcare support and may help build their self-confidence, thus contributing to reduce mood disorders and long-term dissatisfaction with life after stroke.[9]

Recently, Makhoul et al.[15] undertook the cross-cultural adaptation of the SSEQ by involving health experts from the five regions of Brazil and a sample of stroke survivors living in São Paulo. The SSEQ-B showed good overall internal consistency (Cronbach's α= 0.82), with acceptable levels for activity-related (Cronbach's α= 0.77) and self-management (Cronbach's α= 0.68) questions. The authors found positive correlations with the Functional Independence Measure (FIM) and Stroke Impact Scale (SIS) and a negative correlation with the Beck Depression Inventory (BDI) when assessing the concurrent validity of the SSEQ-B.[12,16]

There was no significant correlation with other measures such as the Montreal Cognitive Assessment (MoCA) or Beck Hopelessness Scale (BHS). However, to the best of our knowledge, prior to the present study, the concurrent validity of the SSEQ-B with instruments that assess basic and instrumental daily living activities as well as quality of live had not been established. Moreover, concurrent validity may change according to sociodemographic and cultural features, among other country-related characteristics.[5,10,16]

OBJECTIVE

The present study aimed to assess the concurrent validity of the SSEQ-B using widely known gold-standard measures of daily living activities, namely the Barthel and Frenchay indexes as well as perceived quality of live using the Post-Stroke Quality of Life Index in stroke survivors living in Brazil.

METHOD

This is an analytical cross-sectional study approved by the local Ethics Committee (report number: 2.746.172). All participants signed the Free and Informed Consent Form and the research followed the International and Brazilian standards of ethics in scientific research involving human participants.

Stroke survivors were recruited at São Lucas Hospital and Rehabilitation Center of the Pontifical Catholic University of Rio Grande do Sul, in the city of Porto Alegre, Brazil. The inclusion criteria were: a) a diagnosis of ischemic or hemorrhagic stroke confirmed by image or medical report; b) being in the late or chronic stroke rehabilitation phases;[17] c) being aged 18 years old or over; d) and being able to understand and read Brazilian Portuguese.

The exclusion criterion was the presence of significant aphasia or impairment that clearly hampered the ability to understand the questionnaire, as judged by the assessor. Data were collected using a sociodemographic form (including questions regarding gender, age, education, stroke etiology, time since stroke, number of previous strokes, smoking and drinking habits), the three gold-standard measures (Frenchay, Barthel and SS-QOL), and the SSEQ-B.

Self-stroke efficacy questionnaire Brazil (SSEQ-B)

The SSEQ-B[15] has 13 questions using a 4-pont Likert-type scale (0 to 3), by which the person expresses their level of confidence when facing daily living situations. A maximum of 39 points is possible and the higher the score the better the individual is considered in terms of self-efficacy.[11] All the questions address common functional situations people experience after stroke.[9] Questions 1 to 8 cover the "activity" domain, whereas questions 9 to 13 cover the "self-management" domain.[11] The SSEQ-B was transculturally adapted and exhibits appropriate psychometric measures.[15]

The Frenchay, Barthel and Post-Stroke Quality of Life Indexes

The adapted version of the Frenchay Activity Index consists of 15 questions intended to measure the level of participation during instrumental ADL performed by the person in the recent past.[7] It comprises three subscales, namely, domestic chores,

leisure/work and outdoor activities.[18] Each item ranges from 1 to 4 (1= totally disabled and 4= difficulty). The score ranges from 15 to 60 points and higher scores indicate higher activity levels.[7] Instrumental activities of daily living may be considered as a key point to improve social participation and quality of life.[10]

The Barthel Index (BI) measures functional independence in the personal care and mobility domains such as self-care, sphincter management, transfers, and locomotion. Items score 0= dependent, 5= help or considerable help, 10= independent or minimal help and 15= fully independent. The total score ranges from 0 to 100, where 0-20 indicates total dependence, 21-60 severe dependence, 61-90 moderate dependence, 91-99 mild dependence and 100 total independence. The Brazilian version of the BI presents appropriate psychometric measurement scores.[19] The BI may be used in addition to the SSEQ to provide insights into the relationship between self-efficacy and activities of daily living.[11]

The Stroke Specific Quality of Life Scale (SS-QOL) assesses quality of life in stroke survivors based on patient-reported outcomes. The 49-item scale includes the 12 following domains: mobility; energy; upper extremity function; work and productivity; mood; self-care; social roles; family roles; vision; language; thinking; and personality. Items are assessed using a 5 - point scale (1= Total help - Couldn't do it at all - Strongly agree / 5= No help needed - No trouble at all - Strongly disagree). Scores range from 49 to 245 and higher values indicate better quality of life. The SS-QOL exhibits appropriate psychometric measurement scores.[20]

Procedures

The SSEQ-B was applied together with the above-mentioned gold standard instruments, in a single assessment session conducted by trained physiotherapists. The following order was used: SSEQ-B, Barthel Index. Frenchay Activities Index and SS-QoL. The data was collected from March to December 2019.

Statistical Analysis

Descriptive statistics were used to characterize the sample and scores obtained in the assessment battery. The concurrent validity of the SSEQ-B was tested using Spearman's rank correlation coefficient, the Intraclass Correlation Coefficient (ICC) and the Cronbach's alpha. The achieved post-hoc power was also calculated. The Statistical Package for the Social Sciences (SPSS), version 20.0 and G*Power (version 3.1.9.2) were used in the analyses. The statistical significance was set at $p \leq 0.05$.

RESULTADOS

All the 75 participants who signed the informed consent form completed the study assessment. The participants were characterized as follows: 66.64 ± 12.97 years old; 57.3% male; 52% self-declared white; 82.6% self-declared non-smokers; 74.6% self-declared non-drinkers; 33.3% completed high school; 40% married; 69.3% retired; 96% live in the community; 88% with family members; 41.33% use a walking stick; and 77.33% only use the Brazilian public healthcare system (SUS).

As expected, ischemic stroke etiology was more prevalent (86.66%), the average time since stroke onset was 22 months and most cases involved a single stroke episode. The full clinical and sociodemographic characteristics of the sample are described in Table 1.

Table 1. Sociodemographic and clinical characteristics of the studied sample

Studied sample characteristics	
Age (mean ± SD)	56.64 ± 12.97
Gender - Male (%)	57.3
Ethnicity - White (%)	52
Smokers (%)	13.3
Drinkers (%)	25.3
Schooling level (%)	
Illiterate	4
Elementary School	39.9
High School	38.6
College	17.3
Marital Status (%)	
Single / Divorced / Widower	59.9
Married	40
Occupational Status (%)	
Working	1.3
Retired	93.3
Work leave	5.3
Residency (%)	
Senior residences	4
Community	96
Living status (%)	
Alone	6.6
With family members	88
With caregivers	5.3
Mobility (%)	
No gait aids	52
Walking stick	41.33
Wheelchair	6.66
Health insurance (%)	
Public (only SUS)	77.33
Private	22.66
Stroke etiology (%)	
Ischemic	86.66
Hemorrhagic	13.33
Years since the stroke onset (median / IQ 25-75)	1.83 / 0.83-5
Number of additional strokes (median / IQ 25-75)	0 / 0-2
Dysarthria (%)	28
Dysphagia (%)	13.3
SSEQ-B (mean ± SD)	26.42 ± 7.87
Frenchay index (mean ± SD)	40.08 ± 11.63
Barthel Index (mean ± SD)	80.26 ± 17.31
SS-QOL index (mean ± SD)	165.84 ± 31.71

SD: standard deviation; SUS: Brazilian unified healthcare system; IQ: interquartile range; SSEQ-B: the self-stroke efficacy questionnaire Brazil; SS-QOL: The Stroke Specific Quality of Life Scale

Concurrent validity measures

Participants obtained averages of 26.42 points in the SSEQ-B, 40.08 points in the Frenchay index and 80.26 points in the

Barthel index. The average score in the SS-QOL was 165.84 points. Overall, the data suggest the sample exhibited a moderate dependence in daily living activities and a reduced self-perceived quality of life. The post-hoc power (1-ß) in the measures ranged from 0.94 to 1.0, which suggests the sample size was sufficient to minimize bias in the concurrent analysis.

The SSEQ-B total score was found to be the most highly correlated with the Frenchay Index (ICC= 0.8 / r= 0.72 / 1-ß= 1.0 / p<0.005) followed by the Barthel Index (ICC= 0.68 / r= 0.68 / 1-ß= 0.99 / p<0.005) and the SS-QOL (ICC= 0.46 / r= 0.65 / 1-ß= 0.94 / p<0.005), as shown in Table 2.

Table 2. Concurrent validity of the SSEQ-B in comparison with the studied gold-standard measures

Concurrent Measure	ICC	r	1-ß	p
Frenchay Index	0.80	0.72	1.00	<0.005*
Barthel Index	0.68	0.68	0.99	<0.005*
SS-QOL	0.46	0.65	0.94	<0.005*

*SS-QOL: The Stroke Specific Quality of Life Scale; ICC: Intraclass correlation index; r: Spearman's correlation index; 1-ß: post-hoc achieved power; p: significance level; *statistically significant difference*

DISCUSSION

In this study, we aimed to assess the concurrent validity of the SSEQ-B in comparison with gold-standard measures of activities of daily living (basic and instrumental) and quality of life. Our findings showed stroke self-efficacy is more closely related to instrumental activities of daily living after stroke.[18]

Basic and instrumental activities of daily living are widely used in the assessment of functional disability[21] - while basic activities of daily living consist of self-care-related tasks, instrumental activities of daily living are adaptive and are required for an independent living in the community.[19,22]

People living with chronic disability following stroke typically exhibit limitations in daily activities and report restrictions in participating in daily life, even years after stroke onset. Generally, stroke survivors report having difficulty in applying their knowledge, using communication devices, and performing domestic tasks. Therefore, major life areas such as community, social and civic-related life may be affected.[23] An individual's self-efficacy in completing certain tasks is influenced by their feelings, thinking, motivation, and attitude as well as their expectations regarding recovery levels from stroke,[9] which are likely to influence their rehabilitation.

The original SSEQ was found to be a valid measure of self-confidence related to functional performance and life-management aspects for individuals recovering from stroke.[11] The questionnaire is in line with the International Classification of Functioning, Disability and Health (ICF) that evaluates a person based on bio-social-environmental components (body structure/function, activity, and participation domains).[24]

The present findings reinforce those of the ICF[6,15] in stressing the importance of clinicians basing their rehabilitation guidance considering self-efficacy and patient-centered outcomes. Self-efficacy helps to improve the healthcare routine and enhance the value of self-perception. Additionally, self-efficacy may reflect the challenges a person faces in their home-based and self-administered rehabilitation routine.[9,11]

These findings highlight the importance of having patient expectations and needs as a background to decision-making during the rehabilitation process. Thus, the SSEQ-B is capable of identifying individuals who may have functional difficulties dealing with life after stroke (e.g., from hospital to home) and the impact of the disease on their daily life routine.[5,10]

Interestingly, the SSEQ-B exhibited poor agreement levels with the SS-QOL,[20] which suggests quality-of-life domains (energy, family role, language, mobility, humor, personality, self-care, social role, memory/focus, upper-extremity function, vision, work/productivity) are not necessarily related to stroke self-efficacy. Basic activities of daily living may be related with the "activities" domain of the International Classification of Functioning, Disability and Health (ICF) while instrumental activities of daily living may better reflect the participation domain[23] While quality of live is a complex and multifaceted construct, self-efficacy may be an activity-dependent issue, which may explain the mild correlation found between SS-QOL and SSEQ-B. Moreover, we cannot exclude the possibility the psychometric proprieties of these questionnaires may have influenced the present results.

Cross-cultural differences may explain the relation between self-efficacy and quality of live following stroke and reinforce the need to consider cultural-related aspects when assessing the SSEQ concurrent validity.[10] Nevertheless, whether self-efficacy should be considered an independent domain of quality of live is a matter for further study.

While the importance of self-efficacy in stroke survivors is widely recognized,[5,9,10] few studies have addressed the issue in Brazil. Introducing the SSEQ-B by expanding its validity measures may help improve stroke care in the country.[15] By incorporating strategies to improve self-efficacy in rehabilitation programs, we can enhance self-confidence and functional recovery, and thus help stroke survivors achieve higher functional levels.[5,10]

The original SSEQ has been cross-culturally adapted and validated in different countries.[5,6,10,25] The Italian version of this questionnaire showed a correlation with the modified Barthel index. Specifically, the index presented moderate correlation with the domain "activity" (r= 0.46, p <0.001) and a weak correlation in the domain "self-management" (r= 0.21, p= 0.009).[5] In general, our results agree with those obtained with the Italian version of the questionnaire. However, the concurrent validity analysis of the Chinese version of the SSEQ showed it was correlated with the SS-QOL (r= 0.68, p <0.001) and Frenchay index (r= 0.51, p <0.01).[10] By contrast, we found the SSEQ-B exhibited stronger correlation with the Frenchay index and a weaker correlation with the SS-QOL. This suggests self-efficacy may be linked with instrumental activities of daily living and social participation in Brazil, which is in line with a previous study.[23] Altogether, this indirect analysis reinforces the importance of determining the concurrent validity of the SSEQ in different countries and cultures.

In this study, stroke survivors in the acute or subacute stroke recovery phases were not included. We understand the questions in the SSEQ-B were tailored to express self-efficacy in situations that stroke survivors commonly face after hospital discharge. Hence, the inclusion of stroke survivors in acute/subacute phases may reduce the clinical applicability of our results. One limitation of this study concerns the participant recruitment, which included only a few services in

neurology/rehabilitation in Southern Brazil. Consequently, sample-related issues may have influenced the present findings.

CONCLUSION

In conclusion, our results suggest the SSEQ-B exhibits excellent agreement with the Frenchay index, a good to moderate agreement with the Barthel index and a weak agreement with the SS-QOL, which is likely related to the constructs addressed in these instruments/questionnaires.

This study reveals that stroke self-efficacy is related to both instrumental and basic activities of daily living, but only mildly related to quality of life among stroke survivors living in Brazil. Further trials are required to determine several important aspects of the SSEQ-B, namely: normative values, cut-off scores, test-retest reliability, responsiveness in different age groups, floor-ceiling effects, minimally clinically important difference and minimal detectable change.

REFERENCES

1. Sacco RL, Kasner SE, Broderick JP, Caplan LR, Connors JJ, Culebras A, et al. An updated definition of stroke for the 21st century: a statement for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2013;44(7):2064-89. Doi: https://doi.org/10.1161/str.0b013e318296aeca
2. GBD 2016 DALYs and HALE Collaborators. Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017;390(10100):1260-1344. Doi: https://doi.org/10.1016/S0140-6736(17)32130-X
3. Carr JH, Shepherd RB. The changing face of neurological rehabilitation. Braz J Phys Ther. 2006;10(2):147-56. Doi: https://doi.org/10.1590/S1413-35552006000200003
4. Robinson RG, Jorge RE. Post-Stroke Depression: A Review. Am J Psychiatry. 2016;173(3):221-31. Doi: https://doi.org/10.1176/appi.ajp.2015.15030363
5. Dallolio L, Messina R, Calugi S, Fugazzaro S, Bardelli R, Rucci P, et al. Self-management and self-efficacy in stroke survivors: validation of the Italian version of the Stroke Self-Efficacy Questionnaire. Eur J Phys Rehabil Med. 2018;54(1):68-74. Doi: https://doi.org/10.23736/S1973-9087.16.04451-8
6. Kristensen LQ, Pallesen H. Cross-cultural adaptation of the stroke self-efficacy questionnaire - Denmark (SSEQ-DK). Top Stroke Rehabil. 2018;25(6):403-9. Doi: https://doi.org/10.1080/10749357.2018.1469713
7. Monteiro M, Maso I, Sasaki AC, Barreto N Neto, Oliveira J Filho, Pinto EB. Validation of the Frenchay activity index on stroke victims. Arq Neuropsiquiatr. 2017;75(3):167-171. Doi: https://doi.org/10.1590/0004-282X20170014
8. Das J, Rajanikant GK. Post stroke depression: the sequelae of cerebral stroke. Neurosci Biobehav Rev. 2018;90:104-14. Doi: https://doi.org/10.1016/j.neubiorev.2018.04.005
9. Jones F, Partridge C, Reid F. The Stroke Self-Efficacy Questionnaire: measuring individual confidence in functional performance after stroke. J Clin Nurs. 2008;17(7B):244-52. Doi: https://doi.org/10.1111/j.1365-2702.2008.02333.x
10. Lo SH, Chang AM, Chau JP. Translation and Validation of a Chinese Version of the Stroke Self-Efficacy Questionnaire in Community-Dwelling Stroke Survivors. Top Stroke Rehabil. 2016;23(3):163-9. Doi: https://doi.org/10.1080/10749357.2015.1122265
11. Riazi A, Aspden T, Jones F. Stroke Self-efficacy Questionnaire: a rasch-refined measure of confidence post stroke. J Rehabil Med. 2014;46(5):406-12. Doi: https://doi.org/10.2340/16501977-1789
12. Ferri CP, Schoenborn C, Kalra L, Acosta D, Guerra M, Huang Y, et al. Prevalence of stroke and related burden among older people living in Latin America, India and China. J Neurol Neurosurg Psychiatry. 2011;82(10):1074-82. Doi: https://doi.org/10.1136/jnnp.2010.234153
13. Flammer A. Self-efficacy. In: Wright JD. International Encyclopedia of the Social & Behavioral Sciences. 2 ed. Waltham: Elsevier; 2015. p. 504-508. Doi: https://doi.org/10.1016/B978-0-08-097086-8.25033-2
14. Zulkosky K. Self-Efficacy: A Concept Analysis. Nursing Forum. 2009;44(2):93-102. Doi: https://doi.org/10.1111/j.1744-6198.2009.00132.x
15. Makhoul MP, Pinto EB, Mazzini NA, Winstein C, Torriani-Pasin C. Translation and validation of the stroke self-efficacy questionnaire to a Portuguese version in stroke survivors. Top Stroke Rehabil. 2020;27(6):462-72. Doi: https://doi.org/10.1080/10749357.2020.1713555
16. Souza AC, Alexandre NMC, Guirardello EB. Propriedades psicométricas na avaliação de instrumentos: avaliação da confiabilidade e da validade. Epidemiol Serv Saude. 2017;26(3):649-59. Doi: http://dx.doi.org/10.5123/s1679-49742017000300022
17. Bernhardt J, Hayward KS, Kwakkel G, Ward NS, Wolf SL, Borschmann K, et al. Agreed definitions and a shared vision for new standards in stroke recovery research: The Stroke Recovery and Rehabilitation Roundtable taskforce. Int J Stroke. 2017;12(5):444-50. Doi: https://doi.org/10.1177/1747493017711816
18. Martins T, Ribeiro JP, Garrett C. Estudos de adaptação e validação do Frenchay Activities Index numa amostra de doentes com baixa escolaridade afectados por acidente vascular cerebral. Arq Med. 2003;17(1-3).
19. Minosso JSM, Amendola F, Alvarenga MRM, Oliveira MAC. Validação, no Brasil, do Índice de Barthel em idosos atendidos em ambulatórios. Acta Paul Enferm. 2010;23(2):218-23. Doi: http://dx.doi.org/10.1590/s0103-21002010000200011
20. Lima R, Teixeira-Salmela L, Magalhães L, Gomes-Neto M. Propriedades psicométricas da versão brasileira da escala de qualidade de vida específica para acidente vascular encefálico: aplicação do modelo Rasch. Rev Bras Fisioter. 2008;12(2):149-56. Doi: http://dx.doi.org/10.1590/s1413-35552008000200012

21. Katz S. Assessing self-maintenance: activities of daily living, mobility, and instrumental activities of daily living. J Am Geriatr Soc. 1983;31(12):721-7. Doi: https://doi.org/10.1111/j.1532-5415.1983.tb03391.x

22. Alves LC, Leite IDC, Machado CJ. Conceituando e mensurando a incapacidade funcional da população idosa: uma revisão de literatura. Cienc Saude Coletiva. 2008;13(4):1199-1207. Doi: http://dx.doi.org/10.1590/S1413-81232008000400016

23. Campos TF, Melo LP, Dantas AATSG, Oliveira DC, Oliveira RANDS, Cordovil R, et al. Functional activities habits in chronic stroke patients: A perspective based on ICF framework. NeuroRehabilitation. 2019;45(1):79-85. Doi: https://doi.org/10.3233/NRE-192754

24. Geyh S, Cieza A, Schouten J, Dickson H, Frommelt P, Omar Z, Kostanjsek N, Ring H, Stucki G. ICF Core Sets for stroke. J Rehabil Med. 2004;(44 Suppl):135-41. Doi: https://doi.org/10.1080/16501960410016776

25. Topçu S, Oğuz S. Translation and validation study for the stroke self-efficacy questionnaire in stroke survivors. Int J Nurs Pract. 2018;24(4):e12646. Doi: https://doi.org/10.1111/ijn.12646