Categories of the International Classification of Functioning, Disability and Health (ICF) Selected for Assessment of Patients with Stroke

Categorias da classificação internacional de funcionalidade, incampacidade e saúde (CIF) selecionadas para a avaliação de pacientes com seqüelas de acidente vascular cerebral

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ABSTRACT

INTRODUCTION: The new International Classification of Functioning, Disability and Health is a global tool that aims to standardize the health classification system with focus in patient's potentialities, but it is too extensive and complex. According to its complexity, the necessity of selecting its categories to make it more practical becomes apparent. This study aimed to investigate within professors of Neurological Physiotherapy from Natal/RN, Brazil, which categories of the International Classification of Functioning, Disability and Health (ICF) are more adequate to assess and to describe the stroke patients. METHODS: It is a descriptive study and counted with the participation of 5 professors who selected the categories between ICF components through the Delphi Technique in 3 rounds and using Likert Scale. RESULTS: As result, 94 categories in the following distribution were selected: 27 (28,7%) of the component Body Functions, 17 (18,1%) of Body Structures, 44 (46,8%) of Activities and Participation and 6 (6,4%) of Environmental Factors. CONCLUSION: The selected categories correspond to rehabilitative characteristics of stroke patients which are already included in physiotherapeutic attention. The methodology used was adequate to the studied object and it is emphasized the necessity of future studies for validation of the chosen categories.

Key-words: stroke, functional assessment, ICF, Physiotherapy.

RESUMO

INTRODUÇÃO: A nova Classificação Internacional de Funcionalidade, Incapacidade e Saúde é uma ferramenta global que visa uniformizar o sistema de classificação da saúde, com foco nas potencialidades do paciente, porém se apresenta muito extensa e complexa. Dada a complexidade surge a necessidade de selecionar suas categorias para torná-la mais prática. O presente estudo teve por objetivo investigar, junto ao universo de docentes que ministram a Disciplina de

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Fisioterapia em Neurologia no município de Natal/RN, Brasil, quais as categorias da Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) são mais adequadas para avaliar e descrever o paciente acometidos por AVC. Métodos: Realizou-se uma pesquisa descritiva e participaram desse estudo 5 docentes que, com a utilização da Técnica Delphi em 3 rounds e utilizando a Escala de Opiniões de Likert, selecionaram as categorias dentre os componentes da CIF. Resultados: Como resultado, 94 categorias selecionadas, sendo 27 (28,7%) categorias do componente Funções do Corpo, 17 (18,1%) de Estruturas do Corpo, 44 (46,8%) de Atividades e Participação e 6 (6,4%) de Fatores Ambientais. Conclusão: As categorias selecionadas correspondem às características reabilitativas de pacientes com AVC inscritas no universo de atuação da Fisioterapia. A metodologia aplicada foi adequada ao objeto de estudo, destacando-se a necessidade de estudos futuros para validação das categorias escolhidas.

Palavras-chave: AVC, avaliação da funcionalidade, CIF, Fisioterapia.

INTRODUCTION

Stroke corresponds to one of the main reasons of disability and mortality in aged people, representing the greatest cause of hospitalization and prolonged time of permanence in patients with more than 65 years old. [17, 22] Stroke is defined as an ischemic or hemorrhagic alteration of the brain circulation that causes a transitory or definitive deficit in the functioning of one or more parts of the brain.[5] In Brazil, according to data of the Ministry of Health, cardiovascular illnesses are responsible for 32% of deaths, from which stroke is responsible for 2,3% of all hospitalizations.[12]

Functional outcomes of stroke patients are usually complex and heterogeneous, with impact on neurological functions, which causes dependence in activities of daily living (ADLs) and leads to deficits in mental and cognitive states on the majority of patients who are submitted to long periods of rehabilitation, consequently.[8,10]

Rehabilitation is considered a multi and interdisciplinary conduct of people's functioning and health and it aims to minimize symptoms and disability. It is a continuous process and involves identification of problems and needs, the relation of problems with deficiencies of functions and body structures and personal and environmental factors that act on individuals[7]. This bio-psycho-social view is not newness in the field of health, as in rehabilitation. New is the existence of a global and neutral tool that allows classifying functioning such in an individual as populational level.[3]

This tool is the new International Classification of Functioning, Disability and Health (ICF), approved in 2001 by the World Health Organization (WHO), belonging to the "family" of international classifications that aim to standardize world-widely health information like diagnose, disability and others. It also possesses the purpose of registering and organizing a large amount of information related to different health status. [6,14] The use of ICF places functioning in a central perspective in patient care and it is now considered as a property associated to health condition, including environmental and personal factors, and not only a pathology outcome.[6]

For this reason, in clinical practice, research, education and administration, health researchers and rehabilitation professionals are the first to recognize the potential of ICF to improve practice and health services, to spread politics in health and to stimulate research with the common objective of optimizing the participation of patients and society in the rehabilitative process. [18]

However, it is observed that not all function and body structures deficiencies and contextual factors presented by patients are relevant for the current life moment or for the resolution of the target problem. When it is planned a rehabilitation intervention, it is necessary to identify and to direct the action for those factors with greater potential of improvement[7]. ICF is a very large tool and if it is considered in its full, there are more than 1400 categories. This shows the necessity of selecting specific categories. In order to become practical, this selection must include the lesser number of possible domains and comprise the specter of limitations that exist in functioning and health found out in the patient under such condition.[19]

With this study, researchers hope to contribute on the dissemination and use of ICF. As it is considered that therapeutic and rehabilitative practices are instructed during health professionals training, the aim of this study was to investigate between Neurological Physiotherapy professors from the city of Natal/RN, Brazil, which categories of

International Classification of Functioning, Disability and Health (ICF) are more adequate to assess and to describe patients with stroke.

METHODS

It is a descriptive study with sample composed by contingency which counted with the participation of 5 (five), amongst 8 (eight) Physiotherapists, who were professors of Neurological Physiotherapy from the 2 (two) university courses of Physiotherapy from the city of Natal/RN, Brazil. It was used the Delphi Technique for the selection of ICF categories, according to which it is required the opinion of specialists through questionnaires in order to reach a consensus about an issue[12]. The Delphi technique is a process of structuralized communication with 4 characteristic keys: anonymity, interaction with controlled feedback, reply of a statistical group and specialists' opinion. In this technique, specialists (experts) are professionals (also called respondent) who have knowledge and interest on the subject and who are available to participate of all stages of the investigation[12].

After approval by the Research and Ethics Committee of UFRN under number 041/05, participants were contacted, and then steps and procedures of the research were explained to them. Initially each one received an envelope that contained: an assent form; a participant identification form; a clarifying manual about ICF and a letter with rules and orientations about the method used in this research.

In this study it was carried out a consensus after 3 rounds of questionnaires. In the first round it was delivered the First Questionnaire (Q1) which contained all second level ICF categories because they are the most suitable for use in researches and assessment of clinical treatments[9]. Participants had 20 days to analyze the ICF categories contained in the protocol and select them. A five-point Likert Scale was used as criterion of selection of categories. It presents acceptance graduations that varies from 1 – strongly disagree; 2 – disagree; 3 – not sure; 4 – agree; 5 – strongly agree[13]. The cut-point was 80% of acceptance, according to each category that received graduations "4" or "5" in this scale.

In the second round it was delivered the Second Questionnaire (Q2) which contained only the ICF categories selected from the classification of the first questionnaire (Q1) answers. Participants had 15 days to analyze the ICF categories from the protocol, select them and return the envelope. It was used the same cut-point of the First Questionnaire. In the third round it was delivered the Third Questionnaire (Q3) that contained the ICF categories selected from the Second Questionnaire answers. Participants had 10 days to carry through new analysis and selection of ICF categories. Q3 was analyzed following the same procedures of Q1 and Q2, but its selected categories compose the final assessment protocol of stroke patients that contains the summarized ICF, which was sent to each participant in its final version with possibility of discussion or argument about the results.

RESULTS

Amongst the selected professionals, 1 (one) did not agree to participate and 7 received the first questionnaire, however 5 returned. Of these, 60% were male, with 12,8 (± 6,7) average graduate years and 8,6 (± 5,9) average years on teaching Neurological Physiotherapy in higher education institutions. Table 1 shows the distribution of the participants according to their professional qualification in Postgraduation. It is a determining data, therefore study's quality depends on respondents (experts) status, who are responsible for the selection of ICF categories[18].

TABLE 1 - DISTRIBUTION OF THE PARTICIPANTS ACCORDING TO POSTGRADUATION STATUS.

Participants	Specialist (area)	Master's Degree (area)	Doctor's Degree (area)
1	Public Health and Physiotherapeutic Assessment	Health Sciences (in course)	—
2	Kinesiotherapeutic Resources	Social Gerontology	Physical Activity and Sports
3	Kinesiotherapeutic Resources	Psychobiology	Psychobiology
4	Physiotherapeutic Assessment	Health Sciences (in course)	—
5	Neurological Physiotherapy	—	—

SOURCE: participants identification form.

The first selection of second level categories of the 4 ICF components resulted in 178 categories, representing a reduction of 49,1% of the total initial of this level (362). On the second selection (29.6% of the total) there was a reduction to 107 and on the third there were 94 selected categories, representing 25.9% of the total initial. The selection resulted in 27 (28,7%) categories of the component Body Functions, 17 (18,1%) categories of the component Body Structures, 44 (46,8%) of the component Activities and Participation and 6 (6,4%) of the component Environmental Factors. Table 2 shows the results of the selection developed in each round through the Delphi Technique.

TABLE 2 - CATEGORIES OF THE ICF COMPONENTS SELECTED PER ROUND AFTER APPLICATION OF THE DELPHI TECHNIQUE.

ICF Components	1st round		2nd round		3rd round	
	n	%	n	%	n	%
Body Functions (114)	53	46,5	34	29,8	27	23,7
Body Structures (56)	33	59,9	17	30,4	17	30,4
Activities and Participation (118)	72	61,0	48	40,7	44	37,3
Environmental Factors (74)	20	27,0	8	10,8	6	8,1
Total of 2nd level categories (362)	178	49,1	107	29,6	94	25,9

SOURCE: data collected by the authors.

In regard to the component **Body Functions**, the last selection indicated 27 categories (23.7% of the total of 2nd level of this component) most of them in chapters 1, 2 and 7, in this distribution: chapter 1 – Mental Functions (8 categories), chapter 2 – Sensorial Functions and Pain (7 categories) and chapter 7 – Neuromusculoskeletal and Movement-related Functions (12 categories). It was observed that none categories were selected in chapter 3 – Voice and Speech Functions, chapter 4 – Functions of the Cardiovascular, Haematological, Immunological and Respiratory Systems, chapter 5 – Functions of the Digestive, Metabolic and Endocrine Systems, chapter 6 – Genitourinary and Reproductive Functions and chapter 8 – Functions of the Skin and Related Structures.

In the component **Body Structures**, 17 categories represented 30.4% of the total of 2nd level categories. All categories of chapters 1 – Structures of the Nervous System (7 categories) and 7 – Structures Related to Movement (9 categories) were selected and only one from chapter 8 – Skin and Related Structures (s810 – Structures of areas of skin).

The 44 selected categories of the component **Activities and Participation** correspond to 37.3% of the total of 2nd level categories of this component. All chapters of the component were included, but most of the selected categories were concentrated in chapters 1 – Learning and Applying Knowledge (9 categories), chapter 3 – Communication (5 categories), chapter 4 – Mobility (14 categories) and chapter 7 – Interpersonal Interactions and Relationships (6 categories). The chapters with less selected categories were chapter 2 – General Tasks and Demands (one category – d210 – Undertaking a single task), chapter 5 – Self-care (4 categories), chapter 6 – Domestic Life (one category – d649 – Household tasks, other specified and unspecified), chapter 8 – Major Life Areas (2 categories) and chapter 9 – Community, Social and Civic Life (2 categories).

In the component **Environmental Factors**, the 6 selected categories represented 8.1% of the total of 2nd level categories. In this component, only items of chapters 3 – Support and Relationships (one category – e320 – Friends) and 4 – Attitudes (5 categories) were selected. Table 3 presents the total of categories per components selected in the last round.

TABLE 3 – 2ND LEVEL CATEGORIES OF ICF COMPONENTS SELECTED FOR THE FINAL PROTOCOL

Body Functions					
Chapter 1 – Mental Functions					
b110	b134	b139	b147	b144	b156
b176	b180				
Chapter 2 – Sensorial Functions and Pain					
b229	b230	b235	b249	b260	b265
b280					
Chapter 7 – Neuromusculoskeletal and Movement-related Functions					
b715	b720	b730	b735	b740	b749
b750	b755	b765	b770	b760	b780
Body Structures					
Chapter 1 – Structures of the Nervous System					
s110	s120	s130	s140	s150	s198
s199					
Chapter 7 – Structures Related to Movement					
s710	s720	s730	s740	s750	s760
s770	s798	s799			
Chapter 8 – Skin and Related Structures					
s810					

Table 3 – 2nd level categories of ICF components selected for the final protocol (Cont.)

Activities and Participation					
Chapter 1 – Learning and Applying Knowledge					
d110	d115	d129	d130	d135	d145
d155	d159	d160			
Chapter 2 – General Tasks and Demands					
d210					
Chapter 3 – Communication					
d310	d315	d320	d350	d355	
Chapter 4 – Mobility					
d410	d415	d420	d429	d430	d435
d455	d449	d450	d455	d460	d465
d469	d470				
Chapter 5 – Self-Care					
d540	d570	d598	d599		
Chapter 6 – Domestic Life					
d649					
Chapter 7 – Interpersonal Interactions and Relationships					
d710	d760	d770	d779	d798	d799
Chapter 8 – Major Life Areas					
d845	d859				
Chapter 9 – Community, Social and Civic Life					
d998	d999				
Environmental Factors					
Chapter 3 – Support and Relationships					
e320					
Chapter 4 – Attitudes					
e410	e415	e440	e445	e450	e455

SOURCE: data collected by the authors

DISCUSSION

Stroke causes a heterogeneous amount of symptoms in which motor functional deficits can be emphasized, beyond cognitive impairments.[8] Between the categories of the component Body Functions, it can be observed a preference of selection for Mental Functions, Sensory Functions and Pain and Neuromusculoskeletal and Movement-related Functions. Studies justify the selection of Mental Functions once early information about cognitive functioning in stroke patients can improve the decisions for discharge and strategies of the rehabilitation program. [20] Cicerone et al.(2005) affirm that attention, visual perception, communication and memory are areas included in cognitive rehabilitation of stroke patients.[2] However, it is observed that there was no selection of ICF categories about attention and communication, which are important during the rehabilitation of these patients.

In cases of cerebral injury, auditory comprehension and discrimination can be impaired, what creates the belief that the selection of the category referring to the component Sensory Functions and Pain was due not only for the fact that Physiotherapy acts on these impairments, but also for the importance of adequacy of the treatment to the conditions presented by the patient.[1] In this way, it facilitates the development of patient's potentialities. Still about pain, the research of Horn et al.(2003) shows high incidence (75%) of shoulder pain in hemiplegic or hemiparetic patients, so that there are many physiotherapeutic techniques which act directly in the control of these painful processes.[11] It is believed that the great selection of categories related to Neuromusculoskeletal and Movement-related Functions was due the central assessment elements of Physiotherapy are functioning and movement and the main elements of its attention are musculoskeletal problems.[10]

In the component Body Structures, it was observed the selection of Structures of the Nervous System and Structures Related to Movement, too similar to the categories selected in the component Body Functions. Geyh et al. believe that, in the long run, these categories point to the effect of typical sensory and motor damages that stroke patients present for muscular and joint movements among others related to body structures, as for example, the hemiplegic shoulder-hand syndrome.[7] It is distinguished the selection of the category s810 – Structures of areas of skin from chapter 8 – Skin and Related Structures probably due the use of manual therapeutic resources in the physiotherapeutic attention of neurological patients what makes important to assess the integrity of these patients skin.

The component Activities and Participation had the greater number of selected categories (44) and all chapters were included. A study relating this ICF component with

available and used assessment tools evidences the association of its items with the assessment of the Activities of Daily Living (ADLs), static and dynamic balance, functional independence and mobility[15]. Moreover, another study also identified that basic learning, applying knowledge, general tasks and demands, communication, maintaining body position and self-cares are related to stroke and it emphasizes the importance of assessing limitation of activities and restrictions in the participation of patients to determine rehabilitation.[16]

The component Environmental Factors had the lesser number of selected categories.[10] Categories were related to relationship factors and attitudes of other people towards the patient with stroke. Studies show the importance of assessing the existence of familiar conflicts around the recovery of the patient with stroke and that social and familiar support are prognostic factors of the functioning recovery of the patient with stroke.[4,9] However, it is distinguished that Physiotherapy is traditionally associated to a more technician model of attention and it does not have focused in the participation and surroundings (environment) where these patients are included, so it has given more attention to body functions and activities, what justifies the small amount of selected categories.[7]

CONCLUSION

The process of consensus attainment through the Delphi Technique for selection of ICF categories that best describe the patient with stroke presented efficiency.

There was reduction for 25,9% of the initial 2nd level categories, with selection directed to areas of physiotherapeutic attention. The small selection of Environmental Factors categories are stood out. This shows the necessity of aiming Physiotherapy performance not only at patients' physical questions, but also at environmental aspects that act on functioning. It is also distinguished the necessity of future studies aiming at validation of the selected categories, as well as new works relating ICF with other health professions and other specific health conditions.

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