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ORIGINAL ARTICLE

The physical therapy background in the field of the orthopedics: a critical view under the optics of functioning

A formação fisioterapêutica no campo da ortopedia: uma visão crítica sob a óptica da funcionalidade

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ABSTRACT

Introduction: the World Health Organization published the International Classification of Functioning, Disability and Health (ICF) in 2001. This reflected the change from a disease-centered approach to an emphasis on functioning as a component of health. Objective: this study discusses the challenges faced by the physical therapy education regarding the implementation and application of the concept of functioning in the rehabilitation of orthopedic outpatients. Methods: a total of 93 physical therapy patient records with musculoskeletal disorders were analyzed and information was obtained based on a form that had predefined ICF categories. The data analysis was carried out with the statistical package EPIINFO 6.04. Results: the records, filled out by physical therapy students, reported and described disorders of body functions at a higher frequency when compared to the activities and participation or the influence of the environmental factors on the patients' functioning. Conclusion: the results showed that the physical therapy students focused their attention mainly on body functions and structures, based on their biomedical background. The lack of information about other components of functioning indicate that there is still a disconnection between the more modern concepts of functioning and the physical therapy background in the field of orthopedics.

KEYWORDS

International Classification of Functioning, Disability and Health, physical therapy, orthopedics

RESUMO

Introdução: a Organização Mundial de Saúde publicou a Classificação Internacional de Funcionalidade, Incapacidade e Saúde (CIF) em 2001, que reflete a mudança de uma abordagem baseada na doença para enfatizar a funcionalidade como um componente da saúde. Objetivo: este trabalho discute as características da formação fisioterapêutica frente ao processo de adoção e aplicação da funcionalidade na reabilitação de pacientes ortopédicos. Métodos: foram analisados 93 prontuários de fisioterapia de pacientes com afecções musculoesqueléticas, de onde foram obtidas informações com base em um formulário contendo categorias predefinidas da CIF. A tabulação dos dados foi feita com o pacote estatístico EPIINFO 6.04. Resultados: os prontuários preenchidos pelos alunos de graduação de fisioterapia relatavam e descreviam deficiências das funções do corpo em uma freqüência muito maior que as atividades e participações ou a influência de fatores ambientais sobre a funcionalidade dos pacientes. Conclusão: os resultados mostram que os alunos da graduação de fisioterapia estão focalizando sua atenção preferencialmente sobre as funções e estruturas corpóreas, seguindo a formação biomédica. A falta de informações sobre outros componentes da funcionalidade indica que ainda há um distanciamento entre os conceitos da funcionalidade mais modernos e a formação fisioterapêutica no campo ortopédico.

PALAVRAS-CHAVE

Classificação Internacional de Funcionalidades, Incapacidades e Saúde, fisioterapia, ortopedia

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INTRODUCTION

The existing physical therapy treatment centers in Brazil range from outpatient clinics to large hospital institutions.[1] This scenario includes the university and college school clinics. These aim at the formation of new physical therapists, with spaces for theory and practice, as well as testing and improvement of techniques and technologies aimed at the quality of human movement and the quality of life of those who have locomotor system disorders.

The physical therapy centers are thought of as teaching spaces that highlight the formation of the generalist professional under guaranteed supervised practice.[1,2,3] In this environment, priority is given to the excellence and quality training for the benefit of the community, adopting a system that will allow the understanding and the use of new approaches that can be used in the academic practice extended to public use.[1] In this sense, the patient's assessment process must contain elements that will allow not only the assessment of the motor functions, but also the psychosocial conditions and aspects related to functionality and quality of life, which are needs that are evidenced in curricular directives.[4]

Although the knowledge on the importance of the approach based on functionality progressively increases, what is often observed is the use of the linear medical model focused on the disease, disability and physical incapacity, adopted in the clinical practice of the physical therapist.[5]

The World Health Organization (WHO), after several reviews, has proposed the International Classification of Functioning, Disability and Health (ICF). The innovation brought on by the ICF is exactly on the concept of functionality, here understood as a term that classifies the individual's capacity and disability and consists of the following components: body functions and structures, activities and social participation and environmental factors within a biopsychosocial perspective.[6,7,8] At a same level, the ICF allows to establish a common language about health and functionality, identifying and addressing its several consequences in musculoskeletal affections.[9]

This paradigm has gained space and has been defined worldwide in such a way that makes us ask how the formation centers have incorporated the view of functionality in the training process of new physical therapists.

OBJECTIVE

The search for an assessment and conduct based on functionality allows the new professionals to act and understand the individuals' biopsychosocial conditions, aiming at increasing the therapeutic possibilities. It is expected that the functionality view allows the academician to contribute with researches and new physical therapy conducts, helping to obtain information on the public health structure and aiding the promotion of instructions for the patient on how to adapt his or her environment to his or her best advantage and according to his or her lifestyle. Thus, the objective of the present study is to discover what aspects of functionality, according to the ICF model, the physical therapists academicians evaluate and record in files during the assessment of patients in an orthopedics service.

METHODS

This is a transversal cohort study, carried out at a teaching-assistential institution of physical therapy in the city of Salvador, state of Bahia, Brazil. This unit is located inside a University campus in the city of Salvador. It currently has 16 professionals who give supervision to around 100 physical therapy students per semester and treat an average of 400 patients.

The data source that constitutes the study has 93 records of evaluations of the Orthopedics Service carried out from January to December 2006. The data collection was carried out with a standardized form applied in secondary records, related to the assessments.

The assessment tool was filled out with the information considered as valid from the ICF/WHO checklist, containing 128 items subdivided in outpatient clinic requirements, patient's personal factors, body functions, body structures, activities and participation and environmental factors. Based on the summarized list of body functions, the following were analyzed: mental functions, sensory and pain, respiratory, neuromusculoskeletal functions and those related to movement. Activities and participation had their domains verified from mobility and personal care. Based on the summarized list of environment, the following were assessed: products, technology, support and relationships.

Some ICF categories were selected to verify which of them were addressed by the physical therapy academicians during the assessment of patients with musculoskeletal affections. The variables used in the study were: personal factors including age in years, gender, occupational status, clinical and body function diagnoses and the ICF components. For the categories belonging to body functions, it was assessed whether the patient presented disabilities: of awareness, sleep, vestibular, respiratory repertory muscles, sensation of pain, muscular strength, joint range of motion (ROM) and muscular tonus. The body structures were classified regarding the body segments affected by the affections. In Activities and Participations, we analyzed the patient's capacity to sit down, crouch, get up, stand, grasp, take, wash, get dressed and walk. The environmental factors were verified based on the possibility of using a medication, gait aid and family support in daily life.

The data were stored in the statistical package EPIINFO version 6.04. The simple frequencies of the variables of the patients' personal factors, ICF components, number of assessments in the files and the variable on the existence of the question on patients' activities of daily living (ADL) were obtained. The means and standard deviations were described only for the variable age.

All efforts were made to establish respect, safeguard the identity, promote the benefit and respect the privacy of the patients that were investigated, as well as the data confidentiality, according to the resolution 196/96. The research project was submitted to and approved by the Ethics Committee of Hospital Santa Izabel in the city of Salvador, Bahia.

RESULTS

The study sample was characterized by: 39 (42%) patients were females and mean age was 41.5 ± 14.9 years. Regarding occupation, 49 patients (52.9%) were employed and the others were economically inactive, including students, housewives, self-employed individuals, employees on medical leave and retired individuals.

Most of the clinical diagnoses were of affections such as contusions, fractures or sprains, which were found in 39 (42%) files; rheumatic problems such as gonarthrosis, tendinosis, spondylosis, spondyloarthrosis, and clinical pictures of pain were investigated in 26 patients (27.9%); spinal column affections, such as spinal hernia, discal protrusion or extrusion and scoliosis were found in 10 files (10.8%), 11 patients (11.8%) had other clinical diagnoses and 7 patients' files (7.5%) contained no information on diagnosis (Figure 1).

Regarding the diagnosis of body function disabilities, there was a record of the limitation of muscular strength (MS) and range of movement (ROM) in 58 files (62.4%); the presence of pain or paresthesia was verified in 11 (11.8%) files and in 24 files (25.8%) there was no information on the diagnosis of body function disabilities (Figure 2).

As for the involvement of body structures, it was observed that the lower limb structures were more affected by orthopedic affections, as verified in 39 (42%) files, with upper limb involvement being reported in 22 (23.6%) and both upper and lower limb involvement being reported in 13 (14%) files (Figure 3).

Table 1 shows that 38 files (40%) had data related to only one assessment, whereas 27 (29%) had two or three assessments and 28 (30%) had 4 to 10 assessments (Figure 4). It was verified that the higher number of assessments is proportional to the existence of more reports on the patients' ADL. Questions asked by the academicians regarding the patients' ADL were shown in 44 (47.3%) of the collected records (Table 1).

Three of eight body functions selected for the study showed to be scarcely addressed during the evaluations carried out by the physical therapy students: sleep, vestibular and respiratory accessory muscle functions were not mentioned in 88 (94.6%), 84 (90.3%) and 78 (84.9%) files, respectively. The highest percentage of the assessments presents disabilities of body functions related to the decrease in ROM and muscular strength deficit observed in 73 (78.5%) and 77 (82.8%) records, respectively (Table 2).

Nine categories of activities and participations were selected, all referring to mobility and personal care. These categories were, in general, scarcely addressed by the students of physical therapy. Activities such as washing and getting dressed were not addressed in 91 (97.8%) files; some information on mobility tasks were little investigated; for instance, the patient's capacity to sit down and get up were not addressed in 90 (96.7%) and 87 (93.5%) files respectively, whereas the patient's capacity to walk was not specified in 32 (34.4%) files (Table 2).

Three categories of environmental factors – medications, gait aids and family support – were selected. It was observed that nothing was investigated regarding the family support in the patients' daily life or medication use in 88 (94.60%) and 36 (38.7%) files, respectively (Table 2).

DISCUSSION

After the analysis of the results, it was observed that the influence of formation on the Orthopedic Department of Physical Therapy is more focused on the disabilities found in the patients, which has been shown in the present study by the more frequent emphasis given to the patients' body functions that presented some deviation from the biomedical pattern of normality.

The approach based on functionality, as proposed by the World Health Organization in 2001,[10] has not been fully adopted in the process of patient assessment in the orthopedic physical therapy service. The biomedical model structured as an interventionist mode of action focused on the affections and on physical consequences such as the ROM or MS limitation still currently predominates in the orthopedic physical therapy conduct, although it is considered a reductionist form of intervention.[5,11,12] The current medical semiology of the locomotor system proposes an approach based on health and disease, disregarding the subjective aspects most of the times; however, what has been observed at present is that several biopsychosocial factors can positively or negatively influence the life of this individual.[12,13] The success of the physical therapy intervention must be constructed from the investigation of these factors and individually so, as there are different cultures and behaviors, which can directly or indirectly interfere with the quality of life, depending on the scenario provided for each individual.[6,12,14,15]

There has been a scarce number of investigations on the activities and participations of patients, a fact that is in contrast with body functions, which have been demonstrated based on the found disabilities. This picture that is shown can be correlated with an attempt by the academician to promote a better rehabilitation for the patient or there can be an error in the directions that emphasize structure and function, rather than functionality. There is still the probability that the patient's functionality is less emphasized due to the fact that the time intended for assessments is scarce, or it is being addressed, but not reported due to dispersion or lack of motivation during the act of taking notes.

Regarding the body functions, it can be perceived that the academician in the musculoskeletal department of physical therapy gives more importance to aspects that can be modified by his or her actions throughout treatment. These functions are related to the disease or disability[13] and its approach allows the understanding of the discrepancy between the wish of the level of function achievement to be attained by the patient and what possible degree to be acquired is.[14]

Mental functions had different records: whereas the awareness function was often addressed, the sleep function was very seldom verified.

The importance of the inquiry regarding the sleep function is correlated with the fact that the existence of possible clinical pictures of musculoskeletal affections can limit the amount of sleep the individual gets.[16] Alterations in the vestibular function, non-specified

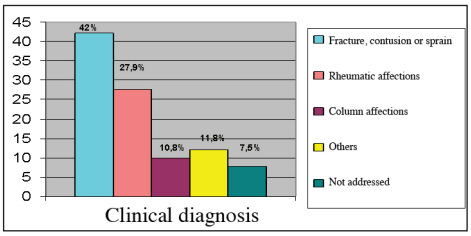

Figure 1
Distribution in percentages of the clinical diagnoses of the medical files in the Physical Therapy Outpatient Clinic, Department of Orthopedics, Salvador-BA, 2006.

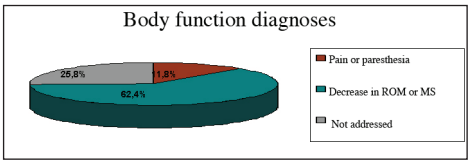

Figure 2
Distribution in percentages of the body function diagnoses of the medical files in the Physical Therapy Outpatient Clinic, Salvador-BA, 2006.

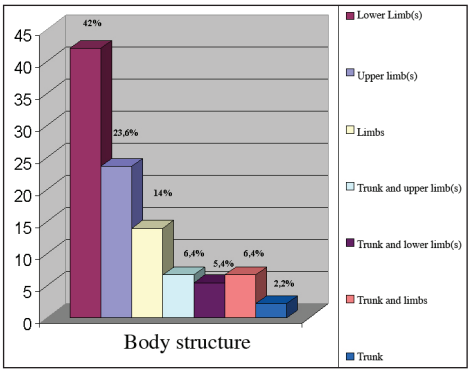

Figure 3
Distribution in percentages of the body structures more often affected by orthopedic affections in the Physical Therapy Outpatient Clinic, Salvador-BA, 2006.

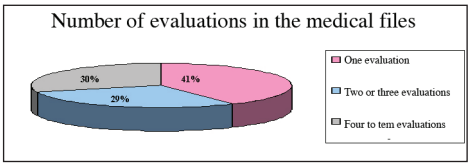

Figure 4
Number of evaluations in the medical files of a Physical Therapy Outpatient Clinic, Department of Orthopedics, Salvador-BA, 2006.

Table 1
Comparison between the questioning on the ADL of the patients and the number of assessments.

Was the patient questioned about the activities of daily living?	Number of assessments			
	1	2-3	4-10	Total (%)
Yes	12	12	19	43 (46.2)
No	26	15	9	50 (53.7)
Total (%)	38 (40.8)	27 (29)	28 (30.2)	93 (100)

in a significant part of the assessments, can bring balance disorders, postural alterations and wrong information about our position in the environment, causing gait dysfunction.[17]

The function of the accessory respiratory muscles was scarcely addressed and it is important to do so, as their deficiency can trigger postural problems, with consequences on the shoulder joint and even on the stability of the cervical column.[18] Among the neuromusculoskeletal functions, the one that was the least addressed was the muscular tonus function. The maintenance of the tonus function must be verified, mainly in chronic joint lesions, aiming at locating the joint imbalances very often caused by postural muscles that can be contracted and hypertonic, contrasting with the muscles in the opposite diagonal area, which can be weak and stretched.[19]

The patients' activities and participations were scarcely addressed by the academicians, showing that there is a prevalence of focus directed at the physical damage in the physical therapy segment related to the locomotor system.

The performance of a task by an individual or his/her involvement in a real-life situation demonstrate the individual and social perspective of functionality,[7] which allows the envisioning of the impact of the disease on the quality of life.[13] There was a small record on the patients' personal care; these activities depend on the individual's physical and cognitive capacity to be completed.[20] Therefore, the investigation about personal care can portray the impact of the osteomuscular affections on the quality of life or disclose other problems to be experienced by the patient. The mobility activities were also seldom addressed. The importance of the approach regarding the performance of mobility tasks by the individual is precisely related to the role of the physical therapist that tends to identify, treat and prevent movement limitation.[11]

The use of the aspects of functionality can very often undergo the influence of the health status experienced by the individual. Pictures of acute disease in the upper limbs, sometimes, may not require investigation of the mobility activities of the lower limbs. However, the envisioning of the capacities and potentialities can be reinforced in therapy as a way to overcome the disabilities.[11]

The activities of daily living were scarcely addressed by the academicians in this department of physical therapy; the higher the number of evaluations per patient, the higher the chance of observing recorded data on the patients' ADL. The lower emphasis on the activities of daily living is related to the profile of this patient, characterized exclusively by fracture, contusion or sprain, represented in 42% of the cases, which makes the treatment be focused on the re-establishment of enough ROM to allow the patient to perform the normal activities of daily living.[11]

Although this reality persists, new demands for actions that include the point of view of functionality can allow the physical therapist to have a more effective approach in assessments, as well as in procedures to be carried out[14] and can help establish a reference to measure the patient's health status.[21] A more complete assessment can also determine problems that are not under the scope of physical therapy, thus increasing the chances of an interdisciplinary work.[11]

The environmental factors refer to all extrinsic aspects that encompass the life context of this individual, modulating its interac-

Table 2
Distribution of the orthopedics files regarding the approach of the ICF categories.

ICF category	Description	YES	(%)	NO	(%)	Non-specified	(%)
	Body functions						
	Mental functions						
b110	The patient has awareness impairment	0	(0)	89	(95.7)	4	(4.3)
b134	The patients has sleep impairment	0	(0)	5	(5.4)	88	(94.6)
	Sensory functions and pain						
b235	The patient has vestibular function impairment	2	(2.2)	7	(7.5)	84	(90.3)
b280	The patient has pain sensation	72	(77.4)	2	(2.2)	19	(20.4)
	Respiratory function						
b4452	The patient has accessory respiratory muscle impairment	0	(0)	14	(15.1)	79	(84.9)
	Neuromusculoskeletal functions and those related to movement						
b710	The patient has ROM impairment	73	(78.5)	7	(7.5)	13	(14)
b730	The patient has muscular strength impairment	77	(82.8)	6	(6.4)	10	(10.8)
b735	The patient has muscular tonus impairment	58	(62.4)	11	(11.8)	24	(25.8)
	Activities and participations						
	Mobility						
d4101	The patient can crouch	2	(2.2)	5	(5.4)	86	(92.4)
d4103	The patient can sit down	1	(1.1)	2	(2.2)	90	(96.7)
d4104	The patient can get up	2	(2.2)	4	(4.3)	87	(93.5)
d4152	The patient can remain in the standing position	4	(4.3)	3	(3.2)	86	(92.5)
d450	The patient can walk	60	(64.5)	1	(1.1)	32	(34.4)
d4401	The patient can grasp	3	(3.2)	8	(8.6)	82	(88.2)
d4400	The patient can reach for something	5	(5.4)	4	(4.3)	84	(90.3)
	Personal care						
d510	The patient can wash him/herself	1	(1.1)	1	(1.1)	91	(97.8)
d540	The patient can get dressed	1	(1.1)	1	(1.1)	91	(97.8)
	Environmental factors						
	Products and technology						
e1101	The patient uses medication	41	(41.1)	16	(17.2)	36	(38.7)
e120	The patient uses gait aid	18	(19.3)	21	(22.6)	54	(58.1)
	Support and relationships						
eD310	The patient uses the family relationships in everyday living	5	(5.4)	0	(0)	88	(94.6)

tion with the enviroment;[7] they can be either barriers or facilitating factors of the environment,[6,15,20] causing or decreasing disability,[7] and when they are addressed, they bring the prospect of possible modifications in the environment for the patient's benefit.[11,13]

Among the environmental factors, the family support in daily life was the least specified category among the selected environmental factors. The importance of its investigation is linked to the beliefs, group of values, knowledge and practices that guide the health status of the members of a family.[22] The verification of gait aid or medication use was more frequently observed according to the larger number of assessments performed. Once again, this finding may be related to the academic formation, which might emphasize the medical model focused on the disability.

CONCLUSIONS

The results point out that a functional approach based on the biomedical model is still being applied in the clinical practice by the physical therapy student.

This fact demonstrates the need to re-evaluate the way we assess patients, aiming at providing a broader physical therapy intervention. The use of functionality aspects in the physical therapy practice can promote a rehabilitation process that will aim at the highest levels of functionality, resulting in the improvement of activities

that are part of the life world of this individual, such as leisure, religiosity and work. This approach will allow the envisioning of a new problem faced by part of the patients and will consequently result in the increase of multidisciplinary actions, with more frequent referrals to other rehabilitation professionals.

The established curricular directives must promote higher effectiveness in their practice with the objective of providing to the future professional techniques that can establish the best available treatment resource. Thus, the process of physical therapy formation must include the concept of functionality as a broad and global view that can allow the understanding of the current models of rehabilitation to be used.

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