

Investigation of the evaluative methods used by physical therapists in the specificity of the functional neurology

Investigação dos métodos avaliativos utilizados por fisioterapeutas na especificidade da neurologia funcional

Investigación de los métodos de evaluación utilizados por fisioterapeutas en la especificidad de la neurología funcional

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ABSTRACT | Neurofunctional clinical evaluation represents one of the most important activities of physical therapists. However, differences in diagnostic methods cause discrepancies between physical therapy prescription and prognosis. Thus, the aim of this study was to analyze and discuss the evaluation methods and techniques used by physical therapists bound to popular healthcare assistance, in the specificity of the neurofunctional area. To accomplish this research, a cross-sectional design study was conducted. The sample consisted of physical therapists specialized in neurofunctional rehabilitation registered in the Regional Council for Physical Therapy and Occupational Therapy of Mato Grosso do Sul (*Conselho Regional de Fisioterapia e Terapia Ocupacional*, CREFITO-13), who work in hospitals, universities and clinics of the city of Campo Grande, Brazil. Data were analyzed using descriptive and inferential (χ^2) statistics, under a 5% level of significance ($p < 0.05$). Regarding the results, all physical therapists had concluded graduation five years before. Responses regarding the physical examination were similar between professors and clinical physical therapists ($p = 0.81$), which did not happen on the anamnesis ($p = 0.02$). Items such as cognitive functions and social determinants of health were answered by less than 15% of subjects, and about 70% of respondents said they do, but do not register, the patients' evaluation. In conclusion, there is not a standardization of the physiotherapeutic

neurofunctional evaluation, making it difficult to unify the prescriptive and prognostic analysis of clinical cases. The responses indicate a dependence of professional vision in the disease aspect, with little appreciation of health social issues.

Keywords | physical therapy specialty; health evaluation; evaluation studies.

RESUMO | A avaliação fisioterapêutica neurofuncional representa uma das ações mais importantes do profissional. Contudo, divergências nos métodos utilizados para elaboração diagnóstica fazem com que haja discrepâncias na prescrição e no prognóstico fisioterapêutico. Assim, o objetivo deste trabalho foi analisar e discutir métodos e técnicas de avaliação utilizados por fisioterapeutas vinculados à atenção à saúde da população, na especificidade da neurologia funcional. Para a concretização desta pesquisa, foi realizado um estudo quali-quantitativo de delineamento transversal. A amostra foi composta por fisioterapeutas registrados no Conselho Regional de Fisioterapia e Terapia Ocupacional da comarca de Mato Grosso do Sul (CREFITO-13), especialistas na área da reabilitação neurofuncional, e atuantes em hospitais, universidades e clínicas da cidade de Campo Grande (MS). Os dados foram analisados por meio da estatística descritiva e inferencial (teste do χ^2), sob um nível de significância de 5% ($p < 0.05$). Sobre os resultados, todos os fisioterapeutas analisados

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concluíram a graduação havia mais de cinco anos. As respostas referentes ao exame físico foram semelhantes entre fisioterapeutas docentes e clínicos ($p=0,81$), não ocorrendo o mesmo com a anamnese ($p=0,02$). Itens como funções cognitivas e determinantes sociais de saúde foram respondidas por menos de 15% dos entrevistados, e aproximadamente 70% dos entrevistados disseram realizar, mas não registrar, a avaliação do paciente. Em conclusão, ainda não há uma padronização da avaliação fisioterapêutica neurofuncional, tornando difícil unificar a análise prescritiva e prognóstica dos casos clínicos. As respostas apontam para uma dependência da visão profissional nos aspectos da doença, com pouca valorização das questões sociais de saúde.

Descritores | fisioterapia; avaliação em saúde; estudos de avaliação.

RESUMEN | La evaluación fisioterapéutica neuro-funcional representa una de las acciones más importantes del profesional. Sin embargo, los desacuerdos en los métodos utilizados para la elaboración diagnóstica hacen que haya discrepancias en la prescripción y pronóstico fisioterapéutico. Así, el objetivo de este trabajo fue analizar y discutir los métodos y técnicas de evaluación utilizados por fisioterapeutas vinculados a la atención de salud de la población, en la especificidad de la neurología funcional. Para la concretización de esta

investigación fue realizado un estudio cuali-cuantitativo de delimitación transversal. La muestra fue compuesta por fisioterapeutas, especialistas en el área de rehabilitación neuro-funcional, registrados en el Consejo Regional de Fisioterapia y Terapia Ocupacional del estado Mato Grosso do Sul (CREFITO-13). La investigación involucra profesionales presentes en hospitales, universidades y clínicas de la ciudad de Campo Grande/MS. Los datos fueron analizados por medio de estadística descriptiva e inferencial (test χ^2), sobre un nivel de significancia de 5% ($p<0,05$). Sobre los resultados, todos los fisioterapeutas analizados eran formados hace más de 5 años. Las respuestas referentes al examen físico fueron semejantes entre fisioterapeutas docentes y clínicos ($p=0,81$), no ocurriendo lo mismo en la anamnesis ($p=0,02$). Ítems como funciones cognitivas y determinantes sociales de salud fueron respondidas por menos del 15% de los entrevistados, y aproximadamente 70% realiza, pero no registra la evaluación del paciente. En conclusión, todavía no hay una normalización de la evaluación fisioterapéutica neuro-funcional, tornando difícil unificar un análisis prescriptivo y pronóstico de los casos clínicos. Las respuestas apuntan para una dependencia de la visión profesional en los aspectos de la enfermedad, con poca valoración de las preguntas sociales de la salud.

Palabras clave | fisioterapia; evaluación en salud; evaluación de procesos y resultados.

INTRODUCTION

There is no doubt that physical therapy is gaining more and more space in the world. The physical therapy practice based on evidence, minutely detailed in the guidelines of the WCPT (International abbreviation for the World Confederation for Physical Therapy) represents a gain to the profession, and the classical worldview based on the philosophy of "trial and error" has changed for a scientific strategy governed by need of a previous attestation¹⁻³. The decision-making process of the professional about the best treatment must involve information technology, those mechanisms that gives access to scientific data supporting with proved interventionist precedent or not⁴.

The evolution that the profession has been passing in various countries is increasing and by evidence of the methods and techniques used. The physical therapists profile is changing, through which the clinical skill should involve the ability to manage, evaluate, observe, prescribe, treat and communicate⁵. However, many reports point to a physical therapists difficulty in developing a diagnostic hypothesis correct, corroborating a main concern in treatment evaluation methods^{6,7}.

The physical therapeutic assessment represents one of the most important actions of the professional.

Classically subdivided in anamnesis and physical examination, it is through it that the professional becomes able to prescribe and interventionist goals outline. In a complex and delicate situation involving the evaluation methods and techniques in the patient, the disease appears, although relevant to the definition of the conduct to be developed by the professional, consists of only one of the data recorded during the anamnesis and should not be used exclusively to guide the assistance.

The physical therapist evaluation represents one of the most important actions of the professional. Classically subdivided in anamnesis and physical examination, it is through it that the professional becomes able to prescribe and to outline interventionist goals. In a complex and delicate situation involving the evaluation methods and techniques in the patient, the disease, although relevant to the definition of the conduct to be developed by the professional, consists of only one of the data recorded during the anamnesis and should not be used exclusively to guide assistance⁸.

The need to register the physical therapeutic assessment comes from allowing their reproducibility and to target intervention to be drawn⁹⁻¹¹. Even in face of great importance which features in professional routine, there is still no consensus among the training institutions about the evaluation procedures to be

applied. Thus, the objective of this work was to analyze the evaluation methods and techniques used by physical therapists linked to health care of the population, in the specificity of functional Neurology.

METHODOLOGY

A cross-sectional study was carried out with physical therapists in neurofunctional area, from the registry provided by the Regional Council for Physical Therapy and Occupational Therapy of Mato Grosso do Sul (Conselho Regional de Fisioterapia e Terapia Ocupacional, CREFITO-13). The search involved working professionals in assistance (basic and specialized attention) and teaching (University) neurofunctional physical therapy of the city of Campo Grande (MS).

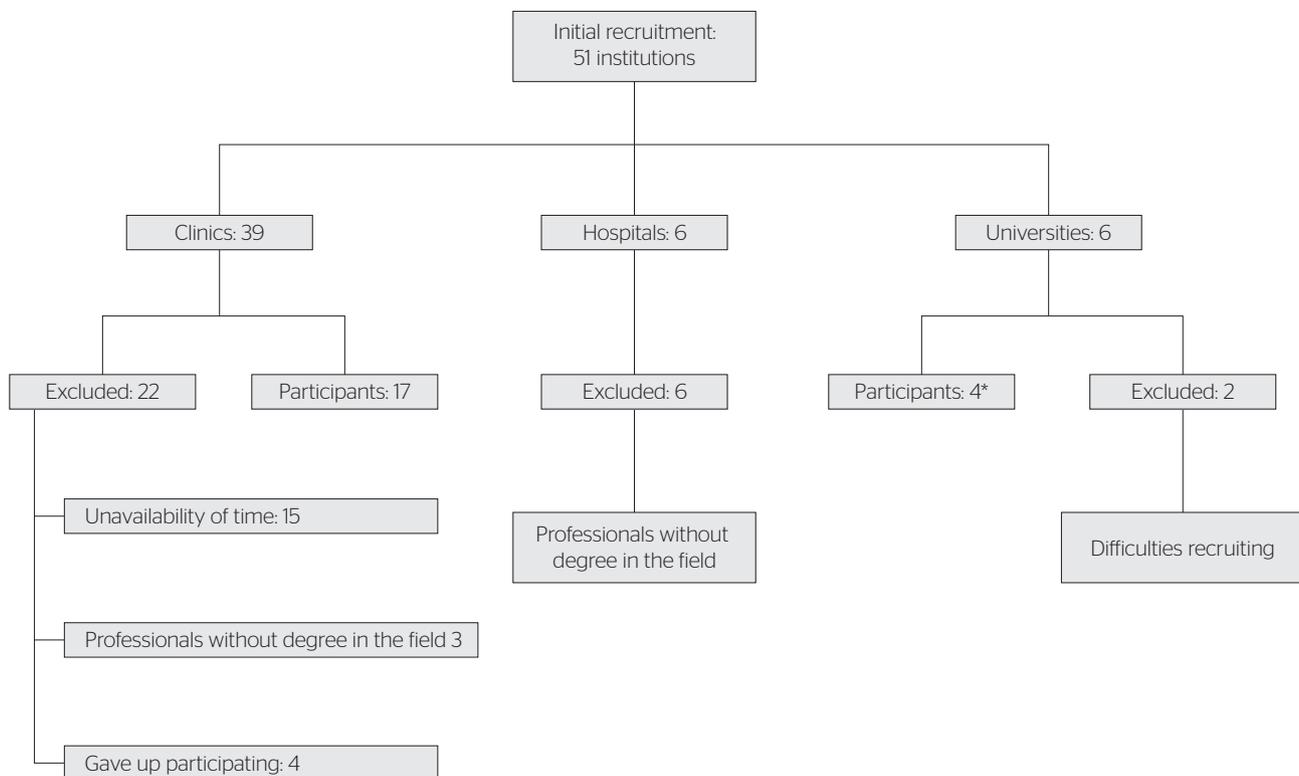
Professionals were included with *latu sensu* and/or *strictu titration* in neurofunctional area (regarding to resume Lattes CNPq) registered in CREFITO-13 and residents in the city of Campo Grande (MS). Physical therapists that did not work with any activity related to the area were excluded.

From the identification of the participants, the researchers contacted them to explain the objectives and goals of the project. An interview consisting in the application of a questionnaire prepared by the researchers themselves was made, which were issues related to the routine and professional experience. In addition, was asked to the participant what steps of the evaluation currently searched he found important to be improved. All information collected were entered on the worksheet, maintaining the anonymity of the respondents and their respective institutions.

About the analysis of the data, we used descriptive (mean and standard error) and inferential (χ^2) statistics, this being applied in order to compare the answers of the physical therapists of assistance and University environments. It was admitted to a level of significance of 5% and ethical support was obtained by the Research Ethics Committee of the Federal University of Mato Grosso do Sul.

RESULTS

The analysis undertaken for this study involved physical therapists that works in 6 hospitals, 6 universities and



* Six physiotherapists docents were included in this study

Figure 1. Sample selection process flowchart

39 clinics of Campo Grande (MS). As seen in Figure 1, in initial sample of 51, only 21 institutions participated, representing a loss of 58,8%. The factors related to low participation of physical therapists in this study are due to: a) in hospitals, lack of professionals with minimum degree required in this study; b) in universities, difficulty of recruitment; and c) in clinics, unavailability of time, withdrawal of participation and lack of professionals with minimum degree. Regarding the basic attention, no physiotherapist was included, because no one fits the criteria adopted in this research. So, out of a total of 51 institutions surveyed, only 21 were included in this survey, representing a sample of 23 physical therapists. All physiotherapists were graduated more than 5 years ago, and has exercised this function for 11.3 ± 2.1 years and the clinical physiotherapists for 7.3 ± 1.9 years. The average patients assisted weekly by physiotherapists was 24.6 ± 4.6 , the most of it took 45 minutes of session per patient. All physiotherapists teachers described that have a standard assessment form in the institution and only two clinical physiotherapists declared having a pre-drawn model to be applied. Most professionals analysed (69.5%) said perform physiotherapist evaluation in patients, but do not have time to register it.

About the prevalence of the responses of the participants in the anamnesis and physical examination, most professionals delimited physical examination as an integral part of physical therapist evaluation; there was not significant difference between the responses of teachers and clinical physiotherapists ($p=0.81$). The opinions about anamnesis were divergent, showing a significant difference between the responses of the two groups ($p=0.02$). Such data will be available in table 1.

Tonus, muscle strength, sensitivity, reflection, balance, coordination and gait were the topics most answered by the participants in the physical examination. In contrast, cognitive function and activities of daily life were answered by less than 15% of the interviewee. On the anamnesis, the majority of interviewee remembered general data, main complaint, history of the disease and familiar/personal antecedents. Only two physiotherapists have shown concern about the social determinants of the patients health.

When asked about a possible need for improvement in some evaluation topic, 21.7% of interviewee said

to be satisfied with the current rating. The remainder of the sample suggested improvement in physical examination items — being too requested the changes in functionality and analysis of activities of daily living of patients. No physiotherapist said that they use permanent materials (such as electromyography, balance platform, load cells and others) to assist in the development of diagnostic hypothesis.

DISCUSSION

Neurofunctional assistance, to be considered ideal, should follow the following systematization: 1) physiotherapist evaluation; 2) construction of Physical therapeutic diagnosis and prognosis; 3) development and implementation of the therapeutic program; 4) planning for high; and 5) guidance for maintenance of acquired conditions. It is therefore of great importance to carry out a full and detailed assessment, before which a mistaken assessment will tend to generate two consequences: or the patient will be subjected to improper treatment or benefits from physical therapy will not be proved^{11,12}.

The findings of the anamnesis corroborate the critical constants of own professionals before the shortage of methods used to analyze the functionality and daily life. Of the activities observed in this study, most professionals values the classic items of anamnesis, as general data, history of current disease and family/personal background. Important items, which examine the sociocultural reality of the patient (like shelter, basic sanitation, means of transport and other), were discussed by only 8.7% of respondents. In spite of the determinants of health are still overlooked by many, Buss and Pelligrini-Filho¹³ argue that is proven to influence of such factors, often of social origin, economic, cultural, behavioral, and psychological health problems of the population.

The notion of health as absence of disease is a reflection of the health model process and health care history. Still found in current health services, the health work is based on the taylorista model, where interaction between members of the same team is complicated¹⁴. In the biomedical model, the explanation of health-disease process tends to be restricted to pathophysiological aspects, at the expense of their functional, social and cultural expressions. As noted, many of the physical therapists presented the classical worldview, restricting its assessment to the peculiarities of clinical condition¹⁵.

Table 1. Prevalence of responses obtained in the anamnesis and physical examination

	Docent (%)	Clinic (%)	p-value
Anamnesis	50	29,4	0,02
Physical Examination	100	94,4	0,81

The findings of the anamnesis corroborate the critical constants of own professionals before the shortage of methods used to analyze the function and activities of patients daily life. This fact is due to the restriction of classical analysis focused on the disease, in which the human functionality and activities of daily life are under valued¹⁶.

Similarly, the techniques applied in the physical examination suggest the original idea of physical therapy as a health area that studies, prevents and treats kinetic-functional disorders that becomes from changes in organs and systems of the human body. Although we believe that this definition is still current to set the physical therapy, we should consider recent findings by the neuroscience that demystifies many automatic movements and reflexes of cerebral origin, and extend physical therapist action on cognitive-behavioral disorders^{17,18}.

Another interesting data observed in our study is that none of the professional uses permanent materials such as electromyography, balancing platform and load cells, to assist in the preparation of functional diagnosis. On that subject, recent studies classify health technology as being “hard”, “hard-light” and “mild”. Although the hard technologies (exemplified by permanent equipment above) are rich and widely trusted, we believe that non-use in the clinic is the high price of such equipment, which restricts their stay in highly specialized centers¹⁹.

Remember that the initial idea of this research was to analyze the evaluation methods used by physiotherapists linked to different levels of health care of Campo Grande (MS). However, we did not find physiotherapists in the basic assistance of the city that favored the inclusion criteria. Similarly, in the hospital area, no professional analyzed showed the minimum required in titration neurofunctional area. There were zero participants of the basic attention and that is because the professionals had public health graduate, as well as in the hospital environment, where they still gives priority to hiring physical therapists intensive care team experts in cardio-respiratory area²⁰.

As a limitation of this work, it is likely that some professional has not been included in this study because of the absence of lattes or lack of updating the same electronic site of the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Even if the possibility of such a bias, we must consider the study published by Lane²¹ in which the researcher argues that the Lattes platform is an instrument of great national scientific contribution, and has important

international recognition. Given this, any health care professional acting at various levels of patient care should be entered in this database. And the sample restriction to professional experts in neurofunctional area was critical to the results obtained in our study to not suffer influence of low experience of some physical therapists in this area.

Sample loss consisted of another limitation of our study. As defined in the survey, the main recruitment difficulties were lack of time, lack of interest and unavailability of subject to participate. This brings us to a complex analysis: while the evidence-based physical therapy represents the central element of contemporary physical therapy and its use is very important for the proof of a particular treatment, some professionals seem to underestimate the importance of the diagnostic standardization, even knowing that a inappropriate prescription produces serious and ineffective results for patients¹⁹.

The current routine of the physiotherapist at the clinic and the high fill rate “requires” many professionals to reduce or even dismiss the use of evaluations. Thus, the therapy is often developed according to the patient’s own report on previous treatments or based on observation at the session. In our study, we observed that approximately 70% of the participants do not record the physical therapeutic evaluation performed. Although the World Confederation for Physical Therapy (WCPT) emphasize the obligatoriness of a professional to document, to put the date and authenticate the evaluate assessments²², some professionals argue that many times the patient arrives with a fixed number of sessions, it is not interesting to use one of the few patient sessions for its evaluation and registration. This argument is refuted by studies developed by Coffin-Zadai⁷ and Jette et al.²³, that shows that serious diagnostic errors were promoted by physiotherapists, which endanger the prognosis, prescription and the therapeutic follow up.

Besides, it is important to remember that the non-realization of the evaluation procedure by the physical therapist represents a throwback to the profession, by pairing moments prior to 1963, when physical therapy in the country was seen as a helper to the medical area, without the task of developing diagnostic evaluation²⁴.

Given the lack of evaluative standards, it becomes apparent that the development of a standardized application form is very important to the professional class, making it possible to compare results obtained in different parts of the country. Despite the major challenge in developing such an instrument, it is important to say

that this should present options which allows the insertion of topics that the physiotherapist judge it necessary, for the evaluation procedure does not become a mechanical task, automatic and involuntary.

CONCLUSION

Through the results obtained in this study, it can be concluded that there is no standardization of Physical therapeutic methods and techniques applied in the patient affected with neurofunctional dysfunction, making it difficult to unify its prescriptive and prognostic analysis.

Many professionals do not register their evaluations, making it hard to analyze the benefits of the therapeutic procedure. The low prevalence of responses involving social determinants of health, in the anamnesis, shows a dependency of the classic vision of a professional physical therapy, centered on the neurological disease, which neglects the social aspects of the individual.

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REFERENCES

- Aguilar A, Stupans I, Scutter S, King S. Exploring the professional values of Australian Physiotherapists. *Physiother Res Int*. 2013;18(1):27-36.
- Shiwa SR, Costa LOP, Moser ADL, Aguiar IC, Oliveira LVF. PEDro: a base de dados de evidência em fisioterapia. *Fisioter Mov*. 2011;24(3):523-33.
- Michie S, Prestwich A. Are interventions theory-based? Development of a therapy coding scheme. *Health Psychol*. 2010;29(1):1-8.
- World Confederation for Physical Therapy. Policy statement: evidence based practice. London. UK:WCPT; 2011. [cited 2013 Jan. 13]. Available from: <http://www.wcpt.org/policy/ps-EBP>
- Michels ME, Evans DE, Blok GA. What is a clinical skill? Searching for order in chaos through a modified Delphi process. *Med Teach*. 2012;34(8):e573-81.
- O'Donoghue G, Cusack T, Doody C. Contemporary undergraduate physiotherapy education in terms of physical activity and exercise prescription: practice tutors' knowledge, attitudes and beliefs. *Physiotherapy*. 2012;98(2):163-73.
- Coffin-Zadai CA. Disabling our diagnostic dilemmas. *Phys Ther*. 2007;87(6):641-53.
- McNaughton HK, Weatherall M, McPherson KM. Functional measures across neurologic disease states: analysis of factor in common. *Arch Phys Med Rehabil*. 2005;86(11):2184-8.
- Marques AP, Peccin MS. Pesquisa em fisioterapia: uma prática baseada em evidências e modelos de estudo. *Fisioter Pesq*. 2005;11(1):43-8.
- Adornato BT, Drogan O, Thoresen P, Coleman M, Henderson VW, Henry KA, et al. The practice of neurology, 2000-2010: report of the AAN Member Research Subcommittee. *Neurology*. 2011;77(21):1921-8.
- Smarr RB. Understanding the physical therapy evaluation in home healthcare: practical pointers for the nurse clinical record reviewer. *Home Healthc Nurse*. 2011;29(8):506-13.
- Jull G, Moore A. What is a suitable dosage of physical therapy treatment? *Man Ther*. 2002;7(4):181-2.
- Buss PM, Pellegrini-Filho A. A saúde e seus determinantes sociais. *Physis*. 2007;17(1):77-93.
- Alves VS. Um modelo de educação em saúde para o Programa Saúde da Família: pela integralidade da atenção e reorientação do modelo assistencial. *Interface Comun Saúde Educ*. 2005;9(16):39-52.
- Costa AJL. Metodologias e indicadores para avaliação da capacidade funcional: análise preliminar do suplemento da saúde da pesquisa nacional por amostra de domicílios - PNAD. *Ciênc Saúde Coletiva*. 2006;11(4):927-40.
- Heerkens Y, van der Brug Y, Napel HT, van Ravensberg D. Past and future use of the ICF (former ICIDH) by nursing and allied health professionals. *Disabil Rehabil*. 2003;25(11-12):620-7.
- Yogev-Seligmann G, Rotem-Galili Y, Mirelman A, Dickstein R, Giladi N, Hausdorff JM. How does explicit prioritization alter walking during dual-task performance? Effects of age and sex on gait speed and variability. *Phys Ther*. 2010;90(2):177-86.
- Buracchio TJ, Mattek NC, Dodge HH, Hayes TL, Pavel M, Howieson DB, Kaye JA. Executive function predicts risk of falls in older adults without balance impairment. *BMC Geriatrics*. 2011;9(11):74.
- Lehux P, Denis JL, Rock M, Hivon M, Tailliez S. How medical specialists appraise three controversial health innovations: scientific, clinical and social arguments. *Sociol Health Illn*. 2010;32(1):123-39.
- Nozawa E, Sarmiento GV, Veja JM, Costa D, Silva JEP, Feltrim MIZ. Perfil de fisioterapeutas brasileiros que atuam em unidades de terapia intensiva. *Fisioter Pesq*. 2008;15(2):177-82.
- Lane J. Let's make science metrics more scientific. *Nature*. 2010;464(7288):488-9.
- World Confederation for Physical Therapy. WCPT guideline for standards of physical therapy practice. London. UK: WCPT. 2011. [cited 2013 Jan 13]. Available from: <http://www.wcpt.org/guidelines/standars>
- Jette DU, Ardleigh K, Chandler K, McShea L. Decision-making ability of physical therapists: physical therapy intervention or medical referral. *Phys Ther*. 2006;86(12):1619-29.
- Salmória JG, Camargo WA. Uma aproximação dos signos – fisioterapia e saúde – aos aspectos humanos e sociais. *Saúde Soc*. 2008;17(1):73-84.