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Therapeutic Model of Rehabilitation: The Contribution of Nursing

«Supported Fast Track Multi-Trauma Rehabilitation Services»

Paulo Alexandre Figueiredo dos Santos[1], Isabel Cristina Mascarenhas Rabiais,[2] & José Joaquim Penedos Amendoeira[3]

Abstract

Trauma is now recognized internationally as a disease. According to the statistical analysis of the cases, the highest incidence is the result of traffic accidents. The World Health Organization (2004) estimates that between 20 and 50 million people are injured or disabled, each year, in traffic accidents, numbers that require an effort from the health services to provide the most appropriate response to the victims, covering all their needs, from the pre-hospital emergency phase, to physical and psychological rehabilitation, as well as social reintegration. In 2008, the Netherlands' Department of Health Organization and Trauma Centre Limburg presented a pioneering and experimental study on rehabilitation called «Supported Fast Track Multi-Trauma Rehabilitation Service», which, in addition to reducing the proportion of health problems resulting from the trauma itself, crucial in the loss of functionality and independence, presents a set of other ideal characteristics to support the development and implementation of evaluation processes of the patient's/family's needs. In this perspective, considering that nursing focuses on the promotion of the health projects that each person lives and pursues, trying to meet the basic human needs, the maximum independence and the functional adaptation to the deficits, this systematic review of the integrative literature aims to identify the nurse's position in the intermediation of complex therapeutic interventions (focused on the patient/family) and as a continuum in the coordination of the therapeutic rehabilitation process, between the patient/family and the multidisciplinary team.

Keywords: Trauma; Rehabilitation; Quality of life; Nursing

Introduction

Trauma is recognized internationally as one of the most serious public health problems worldwide and is defined as an event, intentional or accidental, that threatens human life, or causes injuries or changes in the organism (Nunes, 2009).According to the statistical analysis of the cases, its highest incidence is the result of traffic accidents. According to the «*World Report on Road Traffic Injury Prevention*», published by the World Health Organization (2004), it is estimated that between 20 and 50 million people are injured or disabled, each year, in traffic accidents.

[1]RN, MsC, Specialist in Medical-Surgical Nursing, PhD student at the Catholic University of Portugal.
e-mail: paulofigueiredosantos@gmail.com, 00351914430418
[2]PhD in Nursing Skill Education, Specialist in Medical-Surgical Nursing, Professor at the Catholic University of Portugal.
e-mail: raby@ics.lisboa.ucp.pt, 00351919451113
[3]RN, MsC, PhD, Post doctorate, Coordinating teacher of the Escola Superior de Saúde de Santarém

It also predicts that, by 2020, traffic accidents will be the third worldwide cause of death and temporary or permanent disability, in the economically active population. Regarding the costs of the therapeutic and rehabilitation process in Europe, estimates highlight that the value might amount to approximately 78 billion Euros, annually («*Injuries in the European Union*», 2013).

In Portugal, despite the fact that the total number of traffic accidents has been declining over the past few years, the ratio of serious traffic injuries per million of inhabitants is still higher than EU average (Autoridade Nacional de Segurança Rodoviária — ANSR, 2015). Portugal remains one of the European leaders in terms of number of traffic accidents, resulting trauma and mortality by trauma. According to the ANSR, in 2015 there was an increase of 2.5% in serious injuries resulting from traffic accidents on Portuguese roads, compared to 2014. These figures require an effort from the health system to provide a more adequate response, covering the needs of the severely poly-traumatized patient, from the pre-hospital emergency phase to the rehabilitation phase (both physical and psychological) and the respective social reintegration.

The Direção Geral de Saúde (DGS) translated and adapted the existing national and international guidelines, publishing, in 2010, the «*Norma de Organização dos Cuidados Hospitalares Urgentes ao Doente Politraumatizado*»[4], to implement the «*Via Verde do Trauma*»[5], considering that the success of its functionality might be crucial to the individual's life. This is a decisive factor that has contributed to increase the life span of severely poly-traumatized patients. However, in many situations, the quality of that life span is compromised (Haas, 2010; Aitken, et al., 2012). The «*Plano Nacional de Saúde 2011–2016*»[6], in discussion, came to admit that there is still a worrisome variability in the practice of rehabilitation care in Portugal, and that better results can certainly translate into gains in life span, either by reducing the situations of temporary or permanent disability, or by increasing physical and psychosocial functionalities, and also by reducing suffering and improving the quality of life related to, or conditioned by, health. In this sense, according to Mafra (2012) and Lobello (2003) it is necessary to promote, not only programs to improve the quality of the approach and treatment among the different levels of care of the severely poly-traumatized patient (since an early and appropriate intervention may improve the prognosis), but also a sustainable therapeutic model of rehabilitation that allows a greater efficiency in treatment (with functional and emotional recovery), ensuring quality standards in care and, consequently, an improvement in the quality of life.In 2008, the Rehabilitation Foundation Limburg, Hoensbroek, together with Netherlands' Department of Rehabilitation, Department of Health Organization and Trauma Centre Limburg, presented a pioneering and experimental study concerning rehabilitation, entitled «*Supported Fast Track Multi-Trauma Rehabilitation Service*» (Dutch Research Database, 2008), which has attracted an increasing attention from the scientific community.

This experimental study, in addition to proposing a reduction of the proportion of health problems resulting from trauma itself, crucial to the loss of functionality and independence, presents a set of other ideal characteristics that support the development and implementation of evaluation processes of the disabled patient's/family's needs, thereby allowing the early and timely planning of the most appropriate solutions, support and compensation interventions (Hoffman, et al., 2014; Siddiqui, Woanwui & Kwong Fah, 2014; Paiva, et al., 2012; Van Horn, 2009; Alves, et al., 2009;. Kosar, et al., 2009; De Carlo, et al., 2007). These actions enable several intervention strategies — for education, re-education, information, guidance, management and mediation —, promoting the satisfaction of human needs, better functional results at hospital discharge, shorter length of stay in hospital, reduction in hospital readmission rates, reduced costs and, thus, increased quality of life. In this perspective, unlike most conventional models, in which the rehabilitation process is viewed as a problem of the people, directly caused by disease, accident or other health condition, likely to improve through interventions exclusively centred on the individual, the experimental study.

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[4] «*Organization Standards for Urgent Hospital Care to Poly-traumatized Patients*», freely translated.

[5] «*Fast Track for Trauma*», freely translated.

[6] « National Health Plan for 2011–2016», freely translated.

«*Supported Fast Track Multi-Trauma Rehabilitation Service*» proposes a model which aims at a more integrated, flexible and cross-functional approach, focused on the needs of the patient/family (from the hospital admission Stage, to the full reintegration in the community) and, therefore, at an improved quality of life (Kosar, et al., 2009).

However, the absence of a reference "element", which allows the management, coordination and liaison between the various actors of the multidisciplinary team, in the various healthcare stages with the patient/family-caregiver/family, in order to facilitate the therapeutic relationship, promote a greater empowerment of the patient/family-caregiver/family and minimize the fragmentation and/or duplication of efforts from team members, is, in our view, an aspect that deserves to be reconsidered.

In this sense, considering that nursing focuses on the promotion of the health projects that each person lives and pursues, trying, throughout the life cycle, to meet the basic human needs, and to attain the maximum independence in carrying out daily activities and the functional adaptation to the deficits (Hoeman, 2000; Ordem dos Enfermeiros, 2003), we questioned if, from the various fields that make up the multidisciplinary team, the nurse is not in a privileged position, as a facilitator in the planning and coordination of the therapeutic intent, as well as in the guidance and anticipatory management of therapeutic consensus between the patient/family and the multidisciplinary team of rehabilitation, thus allowing a convergent intervention in the different therapeutic actions of the various fields needed for the complete rehabilitation and functional independence of the patient. Meleis, et al. (2000) emphasize that nurses can influence transition processes, if their practice is centred on the person and his/hers real needs. The transition to reliance on self-care is a factor that is modifiable by improving the person's learning potential, to which nurses can contribute significantly, promoting self-care and ensuring the quality of the transitions processes experienced by the patients, through continuous actions in which the whole health team should be involved and where the rehabilitation nurse can be an asset.

Objectives

To identify the nursing interventions in the therapeutic process of rehabilitation, between the patient/family carrier of impairment, or disability, resulting from trauma, and the multidisciplinary team.To understand the nurse's position in the intermediation of complex therapeutic interventions (focused on the patient/family) and as a *continuum* in the coordination of the therapeutic rehabilitation process, between the patient/family and the multidisciplinary team.

Methodological Path

An integrative literature review was conducted, in order to perform a critical analysis of a set of relevant publications in the field of research. Since it is an experimental study, it was not possible to integrate directly, in the research protocol, information regarding the results of the study «*Supported Fast Track Multi-Trauma Rehabilitation Service*». However, it was possible to identify similar elements in other studies, which converge in the methods proposed by the model, allowing a reflection about the contribution of nursing in the therapeutic process of rehabilitation, not implying the validity of specific approach models, for a particular type of trauma.

For the definition of selection criteria and the consequent sample, the PI[C]OD method was used: participants (and clinical situation), intervention, outcomes and design (type of study), which are presented below, in Table 1. According to the paradigm of «*Prática Baseada em Evidência*» (PBE)[7], these four components are the key elements of the research's question, and are also fundamental to the construction of a guiding line for the literature review. Thus, the inclusion of relevant information contained in different databases is maximized, focusing on the object of research and avoiding unnecessary searches (Santos et al., 2007).

[7] «Evidence Based Practice», freely translated.

Table 1

Acronym	Definition	Description	Descriptors
P	Specific population that will be investigated	Patients who experience severe trauma.	Trauma Rehabilitation Quality of life Nursing
I	Intervention that will be assessed	Interventions to promote the rehabilitation process of the patient who experienced trauma, the contribution of nurses in the therapeutic process of rehabilitation of the patient/family with disability or impairment, and multidisciplinary coordination/interconnection.	
C	Standard intervention	Improved care in the rehabilitation processes, from the admission phase, to the full reintegration into the community. Contribution of nurses in the planning and therapeutic intentionality of the therapeutic process of rehabilitation.	
O	Outcomes or desirable results	Independence, social integration and improvement of the quality of life of the patient/family.	

Respecting rigorously all the steps required by this method, in the time period between January and February 2016, a protocol for the identification of the studies relevant to this work was developed, consisting of a search using the following national and international search engines: Ebsco and B-on; and in the following databases: CINAHL Plus, PubMed/MEDLINE, LILACS, Scielo, Web of Science, Science Direct, Cengage Learning, Academia Search Complete, Phsychology and Behavioral Sciences Collection, John Wiley & Sons, Sport Discus, The Joanna Briggs Institute, US National Library of Medicine, Directory of Open Access Journals, Springer Science & Business Media and RCAAP (*Repositório Científico de Acesso Aberto de Portugal*)[8].

For the identification of the relevant studies, a research strategy was used, based on the following descriptors: Trauma; Rehabilitation; Quality of life; Trauma Manager and Nursing (MeSH). The Boolean elements «AND» and «OR» were used to combine the various descriptors related to each component of the PICO scale, in order to be able to perform a search using the following Boolean operators: (P) Trauma AND (I) Rehabilitation AND Nursing; (C) Rehabilitation, Nursing AND Quality of life, (O) Nursing AND Rehabilitation AND Quality of Life; to obtain all the documents which included the words initiated by the aforementioned terms and, thus, achieve the desired scientific knowledge. After applying the protocol's assumptions the articles that did not meet the requirements were gradually eliminated, leading to the methodical development of a reductive process. In a first stage of analysis, many articles were excluded right from the start, after the title or abstract was read, following the inclusion/exclusion criteria (Table 2).

Table 2

Inclusion Criteria	Exclusion Criteria
- Language: Portuguese, English or Spanish; - Time span: between 2005 and 2016; - Full text; - Primary or secondary research study; - Adult sample or participants; - Studies that include critical patients.	- Instrument validation studies; - Works of epidemiological nature; - Announcements and interviews; - Reports, dissertations and book reviews; - Opinion articles and works of military nature; - Studies that do not fit the subject; - Repeated studies; - Validity of specific approach models to a particular type of trauma.

A set of 165 scientific papers was obtained, from which, after careful analysis, and in accordance with the previously established criteria, a subset of 9 papers was selected for this integrative review (Table 3).

[8] «Scientific Open Access Repository of Portugal», freely translated.

Table 3 Studies Included in the Review

Title, Authors, Magazine and Year	Type of Study Methodology	Results
Hoffman, K., Cole, E., Playford, E. D., Grill, E., Soberg H. L. & Brohi, K. (2014). Health Outcome after Major Trauma: What Are We Measuring? PLOS ONE, July, Vol. 9, Issue 7.	Systematic review of literature (n = 34 articles).	The measurement of the current rehabilitation processes, regarding the quality of life and social reintegration, which are mostly insufficient and inadequate to meet the real needs of the deficiency carrying patient/family, as a consequence of severe trauma.
Siddiqui, S., Woanwui, Land Kwong, F. K. (2014). Six Month Quality of Life Trauma Patients from a Non-Trauma Regional Hospital in Singapore. International Journal of Anesthetics and Anesthesiology, 1:2.	Exploratory study, qualitative method, (n = 167 patients).	The rehabilitation models, centered on the patient's/family's needs (post-hospital phase, until full reintegration in the community), are ineffective in promoting the quality of life.
Paiva, L., Rossi, L. A., Costa, M. C. S. & Dantas, R. A. S. (2012). Qualidade de vida na perspetiva de vítimas de traumas múltiplos e seus familiares. Revista Enfermagem UERJ, Rio de Janeiro, Out./Dez.; 20(4): p. 507-12.	Exploratory study, qualitative method, (n = 34 patients).	The development, planning, and early and timely implementation of solutions, supports and appropriate compensation measures, to meet the needs of the disability carrying patient/family, are key to improving the quality of life.
Gomes, J. A. P., Martins, M. F. P. S., Gonçalves, M. N. C., Fernandes, C. S. N. (2012). Enfermagem de Reabilitação: Percurso para a avaliação da qualidade em unidades de internamento. Revista de Enfermagem Referência, Vol. III, nº. 8, Coimbra, Dez.	Exploratory study, qualitative method, (n = 12 nurses).	Research is referred to as an essential tool for the support of the profession, although it does not exist; In the context of action protocols, it is visible the recognition of the applicability of these instruments, which, however, are still used in a poorly supported way; Despite considering relevant the production of metrics that highlight the effectiveness of rehabilitation nursing, these are not applied.
Andrade, L. T., Araújo, E. G., Andrade, K. R. P., Soares, D. M., Cianca, T. C. M. (2010). Papel da enfermagem na reabilitação física. Revista Brasileira de Enfermagem, Vol. 63, nº. 6, Dez., p. 1056-1060.	Systematic review of literature (n = 48 articles).	In the care paradigm, the nurse is, within the therapeutic process of rehabilitation, due to his/her skills and the characteristics of his/hers professional performance, the healthcare professional with the level of experience, training, skills and confidence required to bring out the fundamental elements to the quality of health care in the rehabilitation field.
Alves, A. L. A., Zangiacomi, F. M. S., Passos, E., Costa, A. D., Carlo, M. R. P. & Scarpelini, S. (2009). Qualidade de vida de vítimas de trauma seis meses após a alta hospitalar. Rev. Saúde Pública, 43 (1): p.150-60.	Exploratory study, qualitative method, (n = 35 patients).	The clinical approaches offered to the disability carrying patient/family, as a consequence of trauma, have not been sufficient to restore the quality of life.
Kosar, S., Seelen, H. A. M., Hemmen, B., Evers, S. M. A. A. & Brink, P. R. G. (2009). Cost-effectiveness of an integrated "fast track" rehabilitation service for multi-trauma patients involving dedicated early rehabilitation intervention programs: design for a prospective, multi-center, non-randomized clinical trial. Journal of Trauma management & Outcomes, 3:1.	Experimental clinical non-randomized study (n = 934 patients).	Rehabilitation model that aims at reducing the proportion of health problems resulting from trauma itself, crucial to the loss of functionality and independence, as well as developing and implementing evaluation processes, regarding the needs of the disabled patient/family, thus allowing early and timely planning of solutions, supports and adequate compensation interventions.
Van Horn, E. R. (2009). Loss and Depression After Traumatic Injury: The importance of case management in the recovery process. PubMed US National Library of Medicine. Mar/Apr; 14 (2): p. 66-73.	Descriptive exploratory study, qualitative method (n = 50 patients).	The society lacks some changes, in order to promote the quality of life of accident survivors with injuries and some degree of incapability or dependence, as well as to respond to the requests and needs of those who become totally dependent. Although this physical experience is often associated with suffering, guilt, responsibility and possible situations of subsequent litigation related to the accident, are all important factors that contribute to the perception of the event and the meanings attributed to it, that can lead to psychological trauma and may be associated with various consequences in different spheres: economical, social and legal.
De Carlo, M. R. P., Elui, V. M. C., Santana, C. S., Scarpelini, S., Alves, A. L. A. & Salim, F. M. (2007). Trauma, Reabilitação e Qualidade de Vida. Simpósio: Cirurgia de Urgência e Trauma Capítulo IV. Medicina, Ribeirão Preto, 40 (3), p. 335-44, Jul./Set.	Systematic review of literature (n = 37 articles).	The effectiveness of the rehabilitation process depends, fundamentally, on a more integrated, flexible and transversal approach, focused on the needs of the patient/family, initiated at the admission stage and prolonged until the full reintegration, in the community, of the disability carrying patient.

Presentation and Discussion

The history of rehabilitation in nursing is not something new. In 1859, Florence Nightingale made it clear, in her written works, the appropriate nursing interventions for the care and the rehabilitation of patients with trauma, namely victims of war. Therefore, one of the focuses of nursing is the care of people during the rehabilitation process, both in the acute phase of the disease and in its chronic phase. The interventions are directed towards favouring recovery and adaptation to the limitations imposed by the disability and towards meeting the needs of each patient/family, among which stand out the functional, motor, psychosocial and spiritual spheres. Due to this, nurses are recognized as essential elements in the integration of multidisciplinary rehabilitation teams. This commitment allows to produce knowledge and strategies, and to optimize resources that enable the occurrence of positive transitions (Gomes, et al., 2012; Andrade, et al., 2010; Van Horn, E. R., 2009; De Carlo, M. R. P., et al., 2007). In this perspective, according to the same authors, nursing in the context of the therapeutic process of rehabilitation cannot be understood as individual acts, consisting, instead, in acts of reciprocity, through which the health project is built in partnership, thus contributing decisively to the self-determination of the person, regarding the free and responsible construction of his/her health project. Rabiais (2014, p. 27) states that, *these changes in the field health have been decisive in society, with regard to the care needs of the recipients, gradually ceasing to be centred on the disease to become directed towards prevention, concern for the well-being, comfort, quality of life and empowerment.*

In this context, as an aiding professional, the nurse has to mobilize key competences for the relationship of care, namely the true ability to help the person, contributing to his/her well-being. In nursing, the care marks the interest in others and has a meaning to those whom it concerns, in order to meet their needs with the distinctive availability of a commitment, mutual respect and motivation. This relationship has an inherent complexity of emotions, feelings and values, shared by the nurse and the patient/family, which is supported by a common goal: the establishment of a relationship of trust (Honoré, 2004; Bowren, 2008).

Lopes (2006), highlights that the crucial factor for nursing care to be therapeutic is the quality of the relationship. Thus, it appears that *the quality of the contact has a direct effect on the velocity with which a trust climate is established, on the pertinence of the established diagnosis, on the interventions to be performed and on the nature of the change that the patient/family will carry for life (...)* (Chalifour, 2008, p. 83). In this sense, the relationship of trust with the disability carrying person, who needs help, facilitates the success of the care relationship and the consequent attainment of therapeutic results. As stated by Mendes (2006), the trust promotes the acceptance and the expression of feelings (both positive and negative), mediated by congruence, empathy, non-possessive affection and effective communication.

This relationship, when properly applied, translates a quiet strength in the patient/family that benefits from the nursing care. On the other hand, this conceptualization of the therapeutic relationship represents a new power transfer paradigm from the nurse to the patient. The empowerment can thus be used, intentionally, by the nurse, as a catalytic tool of the therapeutic relationship, since through that partnership, the empathy and the commitment, the patient acquires power; self-determination and the ability to use his/her own resources. According to Anderson et al., (1995), this process allows the patient/family, on the one hand, to develop new skills and, on the other, to be able to accept his/her disease, enabling the acquisition of a new meaning for his/her life.

Thus, in the care paradigm, we can assume that the nurse is, within the therapeutic process of rehabilitation, due to his/her skills and the characteristics of his/hers professional performance, the healthcare professional with the level of experience, training, skills and confidence required to bring out the fundamental elements to the quality of health care in the rehabilitation field, constituting a vital element in the multidisciplinary team of rehabilitation, who can, and should, contribute to the prevention of disease and the reduction of complications, and who faces enormous challenges in promoting the transition processes (Gomes et al., 2012;. Andrade, et al., 2010; Van Horn, E. R., 2009; De Carlo, M. R. P., et al., 2007). Besides that, the therapeutic relationship promoted by the nurse, characterized by the partnership established with the patient, with respect for his/her capabilities, allows the nurse to understand what is the best moment to intervene, to convey a particular message, and to adjust it, depending on the circumstances.

As stated by Chalifour (2008 p. 9, 10), "*it is in the conscious expression of their personal and professional qualities that lies the basis for all their interventions. In several help situations, it will be their human qualities that will constitute the main tools*". On the other hand, given the evidenced skills and performance standards, it seems consensual to us that the nurse is in a unique position to play an intermediation role in therapeutic actions (more focused on the patient/family) and of *continuum* in the coordination of the therapeutic process of rehabilitation, between the patient/family and the multidisciplinary team. Since multiple health professionals provide care to the same patient/family, the amount and complexity of information and interpersonal relations can be potentially confusing to the patient/family, and may constitute a problem for the different elements of the multidisciplinary team, who depend on information conveyed, and actions performed, by the other elements, to pursue the objectives that reflect the needs of the patient and the family. As stated by Mitchell et al, (2012), this intervention of the nurse may provide an opportunity for:

— improving systemic problems, related to the shared and defined objectives, which must be clearly articulated, understood and supported by all members of the multidisciplinary team, as well as the patient and his/her family;

— allowing clearer interventions, in terms of roles and responsibilities of each element of the team, optimizing its efficiency and, consequently, enabling the team to take advantage of the workload division;

— establishing mutual trust between all parties, making it possible to create standards, a strong reciprocity, a better therapeutic relationship and, thus, more opportunities for shared achievements;

— establishing consistent channels, for a more effective, sincere and thorough communication, between all the members of the multidisciplinary team and the patient/family, allowing a reliable and timely transmission of information, regarding the successes, and failures, of both the functioning of the team/patient/family, and the achievement of the team's/patient's/family's goals, which makes it possible to control and improve the performance, both immediately and over time.

It is, therefore, obvious that, in addition to the dimensions of prevention, treatment and promotion of the readjustment processes, the nurse may present, in this particular context, a powerful and dynamic intervention field, where the actions of planning, and therapeutic interconnection and coordination, between the various areas and the needs of the patient/family with disability or incapacity, can be maximized and, thus, provide an asset to the model presented by the experimental study «*Supported Fast Track Multi-Trauma Rehabilitation Services*».

Conclusion

Trauma is considered a problem and a growing public health concern, due to the functional impact it has on the person's quality of life, and to the social and economic implications related to both the hospitalization and the need for rehabilitation. The implementation of the model presented by the experimental study «*Supported Fast Track Multi-Trauma Rehabilitation Service*» is a reflection of that concern. A simple model, which aims, above all, at being a proposal of change, that can contribute to health gains and the improvement of the quality of health and life, since it allows us to identify the specific needs of the disability carrying patient/family, more efficiently and effectively.

In the professional field, this research also provides an opportunity to reflect to what extent the interventions of the nurse are essential, as part of a multidisciplinary team of rehabilitation. The obtained results, sensitive to the nursing interventions, show that the rehabilitation field, as a domain for nursing care, presents a huge development potential, regarding the identification of the true gains to the health of the disability carrying patients/families, as well as an opportunity for greater assertion among other health professionals, *since,due to the current needs, it is required a new professional profile, more affectively committed to the results of the interventions, which translates into the humanization of care and, consequently, into the satisfaction of the client* (Rabiais, 2014, p. 278).

On the other hand, the findings allow us to consider that, in this line of investigation, the following future implications appear:

— The need for greater knowledge concerning the results sensitive to nursing interventions, in the context of rehabilitation processes of the deficiency carrying patient/family;

— The understanding of the relation between the structural factors of the reality of the contexts, the characteristics of patients/families and nurses, the performed interventions and the attained results;

— Also, the quality, complexity and indispensability of the nursing care process in the field of rehabilitation, regarding the disability carrying person/family, compared to the other professional areas.

Conflicts Of Interest and Ethical Considerations

We recognized that, in performing this review, there were no conflicts of interest. We further clarify that, throughout its development, we have identified the authors used to scientifically support our work, citing them as references, in order to acknowledge their intellectual property.

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