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IDENTIFICATION OF NURSING DIAGNOSES AND INTERVENTIONS AMONG NEUROLOGICAL PATIENTS ADMITTED TO A TEACHING HOSPITAL

Jéssica Rosin*
Fabiana Gonçalves de Oliveira Azevedo Matos**
Débora Cristina Ignácio Alves***
Ariana Rodrigues da Silva Carvalho****
Janaína Verônica Lahm*****

ABSTRACT
This is a documental, cross-sectional, retrospective study with quantitative data analysis. The objectives were to identify the most frequent nursing diagnoses and interventions for neurological patients admitted to a public teaching hospital and to verify the correspondence between stated nursing diagnoses and prescribed nursing interventions. We assessed 292 medical records of neurological patients, clinical and surgical, admitted in 2014 to the Neurology unit, with 12 meeting the inclusion criteria for the study. Nineteen nursing diagnoses were identified stated 94 (100%) times. The most frequent were: Impaired mobility in bed (n = 11; 11.70%); deficient self-care for showering (n = 11; 11.70%); deficient self-care for eating (n = 10; 10.64%) and impaired physical mobility (n = 10; 10.64%). A total of 18 nursing interventions were identified, prescribed 143 (100%) times. The most frequent were: positioning (n = 16; 11.19%) and mechanical ventilation (n = 16; 11.19%). Among stated nursing diagnoses, 57.44% had correspondence with prescribed nursing interventions. To optimize the interrelationship between diagnoses and interventions, it is necessary to assess carefully the clinical conditions of neurological patients and establish desirable goals, obtained through a prescribed nursing care.

Keywords: Nursing assessment. Nursing diagnosis. Nursing care. Nursing process. Neurology.

INTRODUCTION

Caring is the essence of Nursing and from which derive all roles. In addition, Nursing, as a science, needs to use specific theoretical and methodological frameworks to guide the care provided in its clinical practice[1]. In this sense, Nursing Care Systematization (NCS) is a work method that promotes a quality assistance aimed at meeting real and/or potential needs of individuals, being an important instrument to direct decision making[2]. Based on this, it lets nursing teams develop the Nursing Process (NP), a nurse's mandatory and privative attribution, organized in interdependent stages, namely: nursing history (composed of anamnesis and physical exam), nursing diagnoses, care prescription and implementation, assessment and recording of performed activities[3].

The NCS generates benefits to the three spheres involved in care: patient, health institution and profession. The benefit for the patients is in the quality of the assistance provided by the nursing team. For the institution, the benefit is in the organization of the working process, which allows the use of tools that facilitates internal controls, in addition to promoting the achievement of setting quality goals. As for profession, the benefit is in its own valuation, once it permits nurses to develop their intellectual potential, make assertive decisions and establish assistance parameters[2], granting autonomy and professional support[3].

For the development of NCS, nurses need to make use of tools that help them conduct this caregiving process. Thus, standardized languages aim to improve communication between professionals, streamlining the time spent on the elaboration of nursing diagnoses and interventions[1,4]. Standard languages used by nursing include the classification of nursing

*Nurse. Residency in Nursing Management at Medical and Surgical Clinic. Assistant Nurse for Toledo's City Government, Paraná, Brazil. E-mail: rosin.je@gmail.com
**Nurse. PhD in Sciences. Adjunct Professor at the State University of Western Paraná. Cascavel, Paraná, Brazil. E-mail: fabianamatos@hotmail.com
***Nurse. PhD in Sciences. Adjunct Professor at the State University of Western Paraná. Cascavel, Paraná, Brazil. E-mail: dcialves@gmail.com
****Nurse. PhD in Sciences. Adjunct Professor at the State University of Western Paraná. Cascavel, Paraná, Brazil. E-mail: arianacarvalho@outlook.com
*****Nurse. Master in Health Technology. Nurse at Western Paraná University Hospital. Cascavel, Paraná, Brazil. E-mail: janainaveronica@gmail.com

diagnoses by the North American Nursing Diagnosis Association International (NANDA-I)(4), and the Nursing Interventions Classification (NIC)[5].

Concerning organization, the classification by both the NANDA-I and the NIC are composed of domains and classes, from which nursing diagnoses (ND) and nursing interventions (NI) emerge, respectively[4,5].

A nurse's knowledge about neurological dysfunctions assists in the identification of more accurate nursing diagnoses, in the determination of expected results, in the planning of prescribed interventions and in the re-assessment of obtained results, enabling a better guiding for the provided nursing assistance[6].

Thus, the objectives of this study were to identify the most frequent nursing diagnoses and interventions for neurological patients admitted to a public teaching hospital and to verify whether there was correspondence between stated nursing diagnoses and prescribed nursing interventions.

METHODOLOGY

This is a documental, cross-sectional and retrospective research with quantitative data analysis.

The study was conducted with the medical records of neurological patients, clinical and surgical, admitted to a public teaching hospital located in the state of Paraná. The hospital admission unit where data were collected had 27 beds distributed into three specialties: neurology (12 beds), orthopedics (12 beds) and vascular (three beds).

The assessed records referred to neurological patients, clinical and surgical, admitted from 01/01/2014 to 31/12/2014, totaling 292 medical records. Criteria for inclusion in the study were presence of ND and NI information in the records, deriving from the assessment of the patient. After the assessments, 12 medical records met the established requirements.

For data collection and analysis purposes, it was settled that the first ND and NI records contained in the documents would be assessed, regardless of the time lapse since the patient's admission.

Data were collected from May to August 2015. The nurses who were working at the sector in the period set for the conduction of the study (five assistant nurses and four resident nurses) were consulted and authorized the analysis of the information contained in the patients' medical records by signing an informed consent form. Data collection used an instrument prepared by the authors containing items that sought to explore the subject at hand. The organization and storing of collected data were done on a database built on Microsoft Excel 2010. For data analysis, tables of relative and absolute frequencies were constructed.

The research project was approved by the ethics committee of the State University of Western Paraná [Universidade Estadual do Oeste do Paraná] – UNIOESTE, CAAE: 19704613.1.0000.0107, legal opinion No 1.025.721, of April 16, 2015.

RESULTS AND DISCUSSION

In total, 292 (100%) medical records were analyzed; however, only 12 (4.11%) complied with the inclusion criteria and composed the study.

About the characterization of the sample, most participants were men (n=08; 66.67%), and the average age was 42.67 years old. The main cause for hospitalization was traumatic aggravations (n=08; 66.67%), and the average time lapse between the patient's admission at the specialized unit and the recording of the first information of NP stages (ND and NI) in the document was 8.42 days, with variation of 01 to 45 days.

A study that analyzed the profile of patients with traumatic brain injury (TBI) also identified the predominance of male patients (63.3%) among the victims[7]. As for the most affected age group, the same study points higher occurrence of traumatic cases among individuals younger than 30 years old (69.3%)[7], diverging from the finding of this investigation. The time lapse between the patient's admission to the hospitalization unit and the performance of the initial assessment of the patient by the nurse was 8.42 days on average. The nursing assessment, consisting of anamnesis and physical exam, is

vital so that nursing diagnoses and interventions are elaborated. However, the literature recommends that this assessment should be performed and documented by the nurse in the first 24 hours after the patient is admitted[3,8].

A small number of patients (n=12; 4.11%) was cared for according to a structuration based on NP standards. Little compliance with this work method can be justified by the fact that the NP had not been effectively implemented at the health institution researched during the period when data were collected. NP performance requires nurses to commit to its utilization in clinical practice, as well as to take responsibility for its execution, constantly improving themselves, in addition to guiding their team[2] about this work method that supports nursing care. In this way, managers and heads of health institutions have a vital role to NP implementation, being co-responsible for the effectuation of this process[2].

It is important to highlight that the study results were accessed by means of information contained in the patient's electronic records (PER). A study that assessed the usability of the PER with the nursing team, using specifically the "NCS" and "Evolution/Anamnesis" modules, points that these professionals come across difficulties posed mainly by the absence of training for the use of this new tool[9]. These difficulties can hinder assistance to patients, in addition to interfering with the quality and efficacy of healthcare[9]. Thus, considering the insertion of this technology into the work environment of nursing professionals and its operationalization difficulties, it is possible that these are factors that interfered with NP performance.

The study identified 19 nursing diagnoses, stated 94 (100%) times. The average of stated diagnoses per patient was 7.83, with variation of 03 to 12. A recent study[10] found an average of 8.5 ND per patient admitted to an Intensive Care Unit (ICU), value close to that found in the present study, which, despite referring to patients admitted to an infirmary, were neurological patients, which demanded intense nursing care.

The ND identified in the study and their respective frequencies are displayed in Table 1.

The identification of ND related to the neurological system lead to interventions that seek the preservation and recovery of affected vital functions such as consciousness, motor power, swallowing and speech[6]. Besides, depending on the extension and location of the neurological damages, systemic abnormalities may be associated[6].

For analysis purposes, the ND that presented frequencies higher than 10% were considered.

Table 1. Stated nursing diagnoses for neurological patients admitted to a public teaching hospital, according to NANDA-I classification. Cascavel, 2015.

Stated nursing diagnoses	**nº**	**%**
Impaired mobility in bed	11	11.70%
Deficient self-care for showering	11	11.70%
Deficient self-care for eating	10	10.64%
Impaired physical mobility	10	10.64%
Impaired skin integrity	09	9.57%
Deficient self-care for dressing	08	8.51%
Risk of aspiration	07	7.45%
Inefficient airway clearance	06	6.38%
Risk of impaired skin integrity	06	6.38%
Ineffective respiratory pattern	05	5.32%
Constipation	02	2.13%
Ineffective thermoregulation	02	2.13%
Urinary retention	01	1.06%
Impaired verbal communication	01	1.06%
Acute confusion	01	1.06%
Ineffective protection	01	1.06%
Impaired gas exchange	01	1.06%
Acute pain	01	1.06%
TOTAL	**94**	**100%**

A study conducted at a hospital emergency unit of reference in traumatology[11] identified significant frequency of the "impaired mobility in bed" ND in victims of multiple traumas (68.2%), number higher than that found in the present investigation (11.70%). This difference can be explained by the fact that the study mentioned was conducted at an emergency care unit, which was performed right after the trauma occurred, moment when, most of the times, the patient is immobilized due to pain, injury or mechanical containment.

It is understood that the "impaired mobility in bed" ND can be closely related to other ND that refer to physical mobility in general. Individuals with affected mobility may present physical limitations that can trigger a series of health problems, interfering with their physical and emotional wellbeing, in addition to impact directly on their quality of life[12]. Complementarily, for bedridden subjects, restricted physical mobility may favor the development of innumerous nursing diagnoses such as deficit in self-care, impaired skin integrity, constipation, impaired urinary elimination, impaired sleeping pattern, and others.

About the "deficient self-care for showering" ND (11.70%), a recent study conducted with victims of trauma pointed that in 100% of analyzed cases deficient self-care for showering related to the "pain" ND", and in 80.4% of the cases this diagnosis showed association with neuromuscular abnormalities[11]. In the present study, the records do not corroborate these findings, since the (acute) "pain" ND obtained low frequency (1.06%). Such a fact draws attention to the sub-assessment of pain, raising questions related to how it is measured, or even to the attention that has been given to it. Such findings reinforce the need for a correct handling of nursing history, which is the first NP phase.

In addition to being boosted by pain, the "deficient self-care for showering" ND can be intensified by the presence of spasms, spasticity, hypotonia, paralysis and paresthesia, frequent signs present in patients with neurological changes[6].

The "deficient self-care for eating" ND may be caused by cognitive and neuromuscular aggravations frequently associated with stroke sequels. It is important to stress the need to adopt measures that minimize deficiencies as to a patient's nutrition and that promote self-care[13].

A study conducted among patients with affected need for locomotion showed that bedridden individuals with locomotion issues presented high frequency (74.6%) of the "deficient self-care for eating" ND[13]. Nevertheless, the present study identified that only 10.64% of the hospitalized neurological patients showed said diagnosis. We infer that the low frequency of the "deficient self-care for eating" ND is related to the time elapsed since the occurrence of the physical aggravation and data collection (average of 8.42 days, with variation of 01 to 45 days), since the longer the time, the greater the individual's recovery chances.

The "impaired physical mobility" ND can compromise the performance of daily activities. A study involving patients with limited mobility evidenced that around 60% of them were dependent for the execution of such activities[13]. In the present study, the "impaired physical mobility" ND was identified in 10.64% of the patients. Although this number is not quite expressive, nurses need to make an assertive decision in order to prevent the "impaired physical mobility" ND from being an etiological factor of other diagnoses.

The "acute pain" ND is closely related to the presence of harmful agents[11]. It consists of a subjective experience and can be perceived through facial expressions, abnormal pressure levels and heart rates[11]. A study conducted with polytraumatized patients identified that the "acute pain" ND showed 100% of frequency[11]. However, in the present study, even though traumatic events were the main cause for the hospitalization of the researched patients, the "acute pain" ND was stated only once (1.06%). Such finding reinforces the idea that there may be flaws in the initial assessment of the patient, underestimating important information that leads to the sub-assessment of pain.

A ND classification is concerned about arranging diagnosis focuses of interest to nursing, according to their natural relations[4]. In our study, the totality of stated ND belonged to six of the 13 domains that compose NANDA-I

Taxonomy II. The most frequently stated domains were: Domain 04 - Activity/Rest (n=57; 60.64%) and Domain 11 – Security and Protection (n=30; 31.91%). Such results corroborate a study involving patients with multiple traumas[11], which found that Domain 4 (48%) and Domain 11 (28%) were the most frequent ones as well.

Regarding NI, the present investigation identified that out of the 542 contained in the NIC, 18 were prescribed 143 times. The average of NI per patient was 11.92, with variation of four to 20. A study conducted with critical patients identified an average of 16 prescriptions per patient, with variation of 11 to 22[14]. Although it does not refer to the same population, we believe that the care needs of neurological patients may be comparable to the care needs of critical patients.

For analysis purposes, the NI regarded as the most frequent were those with frequencies higher than 5%. The NI identified in the study and their respective frequencies can be seen in Table 2.

Table 2. Nursing interventions prescribed for neurological patients admitted to a public teaching hospital according to the NIC. Cascavel, 2015.

Prescribed nursing interventions	**n°**	**%**
Positioning	16	11.19%
Mechanical ventilation	16	11.19%
Assistance in self-care	14	9.79%
Respiratory monitoring	14	9.79%
Skin care: topical treatments	12	8.39%
Pressure sore prevention	12	8.39%
Aspiration of airways	11	7.69%
Care with intubation: gastrointestinal	10	6.99%
Precaution against aspiration	07	4.89%
Oral health promotion	07	4.89%
Care with injuries	06	4.20%
Skin supervision	05	3.50%
Neurological monitoring	03	2.10%
Care with drains: thoracic	03	2.10%
Assistance in self-care: shower and hygiene	02	1.40%
Physical containment	02	1.40%
Pain control	02	1.40%
Cough stimulation	01	0.70%
TOTAL	**143**	**100%**

The NI more frequently prescribed were grouped into four analysis units, namely: 1) "*ventilation needs*" (n=41; 28.67%), which grouped the "*mechanical ventilation*", "*respiratory monitoring*" and "*aspiration of airways*" NI; 2) "*skin care*" (n=40; 27.97%), grouping the "*skin care: topical treatments*", "*pressure sore prevention*" and "*positioning*" NI; 3) "*assistance in self-care*" (n=14; 9.79%) and 4) "*care with intubation: gastrointestinal*" (n=10; 6,99%).

About the *ventilation needs* analysis unit, which encompassed 41% of the prescribed NI in the present study, a recent research showed that a big portion of polytraumatized patients (51.2%) required nursing interventions aimed at meeting such needs, and the authors point out that, if gas exchange occurs inadequately, the patient will be more likely to develop a secondary brain injury[11], which reinforces the idea that nursing care should be thoroughly planned so as to prevent eventual clinical complications.

Concerning the *skin care* analysis unit, the present study found that 27.97% of the prescribed NI sought to prevent or treat skin injuries. A recent research evidenced that cerebrovascular diseases were identified as being the main causes for the development of pressure sores in hospitalized patients[15], and among actions prescribed to serve this clientele care with the adequate positioning of the latter[12]. It is important to highlight that simple care actions present in daily nursing routine, such as the

postural alignment of the patient, keeping sheets straight beneath them, periodic change of lying position, can prevent the onset of skin aggravations.

As for the *assistance in self-care* analysis unit, the present investigation identified that 9.79% of the NI were aimed at the patient's self-care and at care actions that will extend until the post-discharge period. A recent study that investigated nursing care prescribed for patients that had suffered a stroke highlighted that the planning of hospital discharge favors the continuity of care and communication between hospital and household, emphasizing that most stroke victims demanded home care[16]. The way patients take care of themselves or are cared for others in their homes needs to be structured on scientific bases to direct the correct decision-making and favor their recovery. As educators, nurses should equip patients and/or families on the correct execution of healthcare actions that will be performed at home.

The *care with intubation: gastrointestinal* analysis unit accounted for 6.99% of the NI prescribed in the present research. A study conducted at a hospital showed that around 70% of patients using an alternative way for eating presented as primary disease neurological conditions, and 82.53% of the investigated patients used nasogastric intubation[17]. Bearing in mind that neurological patients frequently make use of gastrointestinal intubation, nursing care should be planned to ensure that the positioning, the fixation and the handling of the intubation are effective in preventing possible clinical complications derived from the inadequate use of these instruments.

Only three of the seven domains that compose the NIC were identified in the present study. There was concentration of prescribed NI in "Domain 2 – Complex physiology" (n=78; 54.55%), which contemplates care actions that support homeostatic regulation[5] and in "Domain 1 – Basic physiology" (n=63; 44.06%), which contemplates care actions that support physical functioning[5]. Likewise, an investigation carried out with critical patients[10] identified that 55% of the prescribed NI belonged to the "Complex physiology" domain and that 33% belonged to the "Basic physiology" domain. In general, nursing care aims to meet mainly an individual's biological needs, evidencing the difficulty nursing has in expanding its care and including actions turned to meeting emotional and psycho-spiritual needs of patients[18].

The low frequency of care prescriptions contained in psychosocial domains can be attributed to the poor working conditions of nurses, who encounter excessively crowded units, reduced staff and long work hours. Such factors contribute to nurses prescribing only care actions that meet the patients' immediate biological needs[18].

The third objective of this study was to analyze the correspondence between stated ND and prescribed NI. In total, 195 (100%) relations between stated ND (n=94,100%) and prescribed NI (n=143; 100%) were assessed. The study identified that relations between stated ND and prescribed NI corresponded in 57.44% of the cases (n=112).

Analyzing the relations that showed no correspondence between ND and NI (n=83; 42.56%), it was possible to verify that the main cause for lack of correspondence was the absence of NI for stated ND (n=51; 61.44%). It is important to stress that there is no point in enunciating nursing diagnoses if this phase is not followed by the prescription of actions that meet identified care needs.

A recent literature review identified that, although a nurse's formation encompass content referring to NCS, the difficulties found in practice are expressive, showing the theoretical fragility of professionals face this process[2]. Corroborating these findings, a study conducted with the aim of identifying difficulties found by nurses during NP execution shows that, at times, the phases are carried out in an independent manner. It was evidenced that the big difficulty is in executing the phase of ND identification and that, although nurses take as important the NP performance, this instrument in practice is little employed in the routine of assistance[19]. Such findings can justify the results found in the present study, which identified lack of correspondence between NP stages and the execution of said stages arbitrarily, which fragments and weakens the nursing care provided.

In order to streamline NP execution and the

inter-relation between the phases that compose it, it is necessary to assess carefully the clinical conditions of patients and, based on collected data, establish goals (expected results) that can be achieved with the prescribed nursing care[1].

The execution of the NP is part of a nurse's work routine and needs to be faced as such. Even though it is a mandatory attribution, many nurses still fail to incorporate this activity into their work routine. Individual and institutional efforts are required to change this scenario.

FINAL CONSIDERATIONS

Learning the most frequent nursing diagnoses and interventions for specific groups, as it is the case of neurological patients, favors decision making and provides adequate and effective nursing care actions aimed at meeting the real needs of these clients.

It is important to stress the reduced number of patients that had their care planned in accordance with NP standards, since out of 292 medical records analyzed within the study period (12 months) only 12 had information about both phases of the process (ND and NI) that were the focus of this investigations. There is an evident need for the healthcare institution to offer conditions so that nurses can perform the NP in their daily work routine, and there is a need for greater commitment on the part of nurses so that this practice is made concrete effectively, granting the profession a greater scientific character and qualifying the care provided.

IDENTIFICAÇÃO DE DIAGNÓSTICOS E INTERVENÇÕES DE ENFERMAGEM PARA PACIENTES NEUROLÓGICOS INTERNADOS EM HOSPITAL DE ENSINO

RESUMO

Trata-se de uma pesquisa documental, transversal, retrospectiva, com análise quantitativa dos dados. Os objetivos do estudo foram: identificar os diagnósticos e as intervenções de enfermagem mais frequentes para pacientes neurológicos internados em um hospital público de ensino e verificar a correspondência entre os diagnósticos de enfermagem enunciados e as intervenções de enfermagem prescritas. Foram avaliados 292 prontuários de pacientes neurológicos, clínicos e cirúrgicos, internados no ano de 2014 na unidade de Neurologia, sendo que 12 deles atenderam aos critérios de inclusão no estudo. Foram identificados 19 diagnósticos de enfermagem, enunciados 94 (100%) vezes. Os mais frequentes foram: mobilidade no leito prejudicada (n=11; 11,70%), déficit no autocuidado para banho (n=11; 11,70%), déficit no autocuidado para alimentação (n=10; 10,64%) e mobilidade física prejudicada (n=10; 10,64%). Foram identificadas 18 intervenções de enfermagem, prescritas 143 (100%) vezes. As mais frequentes foram: posicionamento (n=16; 11,19%) e assistência ventilatória (n=16; 11,19%). Entre os diagnósticos de enfermagem enunciados, 57,44% deles tiveram correspondência com as intervenções de enfermagem prescritas. Para otimizar a inter-relação entre diagnósticos e intervenções, faz-se necessário avaliar criteriosamente as condições clínicas dos pacientes neurológicos e estabelecer as metas desejáveis, obtidas por meio dos cuidados de enfermagem prescritos.

Palavras-chave: Avaliação em enfermagem. Diagnóstico de enfermagem. Cuidados de enfermagem. Processos de enfermagem. Neurologia.

IDENTIFICACIÓN DE DIAGNÓSTICOS E INTERVENCIONES DE ENFERMERÍA PARA PACIENTES NEUROLÓGICOS INTERNADOS EN HOSPITAL ESCUELA

RESUMEN

Se trata de una investigación documental, transversal, retrospectiva, con análisis cuantitativo de los datos. Los objetivos del estudio fueron: identificar los diagnósticos y las intervenciones de enfermería más frecuentes para pacientes neurológicos internados en un hospital público y de enseñanza y verificar la correspondencia entre los diagnósticos de enfermería enunciados y las intervenciones de enfermería prescriptas. Fueron evaluados 292 registros médicos de pacientes neurológicos, clínicos y quirúrgicos, internados en el año de 2014 en la unidad de Neurología, siendo que 12 de ellos atendieron a los criterios de inclusión en el estudio. Fueron identificados 19 diagnósticos de enfermería, enunciados 94 (100%) veces. Los más frecuentes fueron: movilidad en el lecho perjudicada (n=11; 11,70%), déficit en el autocuidado para ducharse (n=11; 11,70%), déficit en el autocuidado para alimentación (n=10; 10,64%) y movilidad física perjudicada (n=10; 10,64%). Fueron identificadas 18 intervenciones de enfermería, prescriptas 143 (100%) veces. Las más frecuentes fueron: posicionamiento (n=16; 11,19%) y asistencia ventilatoria (n=16; 11,19%). Entre los diagnósticos de enfermería enunciados, 57,44% de ellos tuvieron correspondencia con las intervenciones de enfermería prescriptas. Para optimizar la interrelación entre diagnósticos e intervenciones, es necesario evaluar cuidadosamente las condiciones clínicas de los

pacientes neurológicos y establecer las metas deseables, obtenidas por medio de los cuidados de enfermería prescriptos.

Palabras clave: Evaluación en enfermería. Diagnóstico de enfermería. Cuidados de enfermería. Procesos de enfermería. Neurología.

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Corresponding author: Jéssica Rosin. Endereço: Rua Aimorés,187. CEP: 85806330. Cascavel, PR, Brasil. Telefones (46) 9976 6570. Email: rosin.je@gmail.com

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