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NURSING CARE SYSTEMATIZATION IN THE IMMEDIATE POSTOPERATIVE PERIOD AFTER ORTHOPEDIC SURGERIES

SISTEMATIZAÇÃO DA ASSISTÊNCIA DE ENFERMAGEM NO PÓS-OPERATÓRIO IMEDIATO DE CIRURGIAS ORTOPÉDICAS

SISTEMATIZACIÓN DE LA ASISTENCIA DE ENFERMERÍA EN EL POSTOPERATORIO INMEDIATO DESPUÉS DE CIRUGÍAS ORTOPÉDICAS

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ABSTRACT

Objectives: to describe the main nursing diagnoses in the light of the theory of basic human needs, proposed by Wanda de Aguiar Horta, according to the NANDA-I taxonomy, and propose interventions and outcomes according to the Nursing Interventions Classification (NIC) and the Nursing Outcomes Classification (NOC) for the 5 nursing diagnoses more frequently documented in a post-anesthetic recovery service at a reference hospital in traumatology. **Method:** quantitative, cross-sectional, retrospective, descriptive study of the main nursing diagnoses identified in medical records, consisting of 3 steps: preparation of the data collection instrument; data collection; and data processing and analysis. **Results:** the 5 most frequent diagnoses were: Risk of infection (100%); Impaired skin integrity (96.9%); Impaired tissue integrity (93.8%); Acute pain (87.9%); and Self-care deficit for bath/hygiene (69.2%). **Conclusion:** the diagnoses contributed to a better applicability of the nursing process in an individual and holistic way, so that interventions with more specific outcomes can be implemented and aimed at the priority needs of these patients. **Descriptors:** nursing diagnoses; perioperative nursing; orthopedic nursing; nursing care.

RESUMO

Objetivos: descrever os principais diagnósticos de enfermagem à luz da teoria das necessidades humanas básicas, proposta por Wanda de Aguiar Horta, segundo a taxonomia da NANDA-I, e propor intervenções e resultados de acordo com a Nursing Interventions Classification (NIC) e a Nursing Outcomes Classification (NOC) para os 5 diagnósticos de enfermagem mais frequentes documentados em um serviço de recuperação pós-anestésica de um hospital de referência em traumatologia. **Método:** estudo quantitativo, transversal, retrospectivo, descritivo de registro dos principais diagnósticos de enfermagem identificados em prontuários, sendo constituído por 3 etapas: construção do instrumento de coleta de dados; coleta de dados; e processamento e análise dos dados. **Resultados:** os 5 diagnósticos mais frequentes foram: Risco de infecção (100%); Integridade da pele prejudicada (96,9%); Integridade tissular prejudicada (93,8%); Dor aguda (87,9%); e Déficit no autocuidado para banho/higiene (69,2%). **Conclusão:** os diagnósticos contribuíram para melhor aplicabilidade do processo de enfermagem de forma individual e holística, para que possam ser implementadas intervenções com resultados mais específicos e direcionados às necessidades prioritárias desses pacientes. **Descritores:** diagnósticos de enfermagem; enfermagem perioperatória; enfermagem ortopédica; cuidados de enfermagem.

RESUMEN

Objetivos: describir los principales diagnósticos de enfermería a partir de la teoría de las necesidades humanas básicas, propuesta por Wanda de Aguiar Horta, según la taxonomía de la NANDA-I, y proponer intervenciones y resultados según la Nursing Interventions Classification (NIC) y la Nursing Outcomes Classification (NOC) para los 5 diagnósticos de enfermería más frecuentemente documentados en un servicio de recuperación post-anestésica de un hospital de referencia en traumatología. **Método:** estudio cuantitativo, transversal, retrospectivo, descriptivo de registro de los principales diagnósticos de enfermería identificados en prontuarios médicos, que consta de 3 pasos: preparación del instrumento de recogida de datos; recogida de datos; y procesamiento y análisis de datos. **Resultados:** los 5 diagnósticos más frecuentes fueron: Riesgo de infección (100%); Integridad de la piel dañada (96,9%); Integridad tisular dañada (93,8%); Dolor agudo (87,9%); y Déficit de autocuidado para baño/higiene (69,2%). **Conclusión:** los diagnósticos contribuyeron a una mejor aplicabilidad del proceso de enfermería de manera individual y holística, para que puedan ser implementadas las intervenciones con resultados más específicos y dirigidos a las necesidades prioritarias de estos pacientes. **Descriptores:** diagnósticos de enfermería; enfermería perioperatoria; enfermería ortopédica; atención de enfermería.

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INTRODUCTION

Nursing, throughout the historical journey, has sought to respond to phenomena inherent to the profession and, this way, to develop its knowledge space based on holistic attention to individuals in accordance with the health-illness process.¹

Since the 1950s, Nursing theories emerged as a resource for scientific clarification of health-related events.² The theory of basic human needs, proposed by Wanda de Aguiar Horta, is linked to the laws of equilibrium (homeostasis), adaptation, and holistic principles.³ The inclusion of theories takes place through the nursing process (NP), which consists of a problem-solving proposal to fully meet individual demands by means of 5 stages: history, diagnosis, prescription, implementation, and nursing evolution.⁴

These steps contribute to promote key actions through nursing diagnoses, interventions, and outcomes that make the NP integrated on the basis of the links between the North American Nursing Diagnosis International (NANDA-I) classification, the Nursing Interventions Classification (NIC), and the Nursing Outcomes Classification (NOC)⁵, in order to relate diagnoses to nursing interventions seeking to obtain desirable outcomes for the patient. Through these connections, there is some ease for diagnostic reasoning and clinical decision making by a nurse, in line with the outcomes expected and the interventions needed to achieve them.⁶

It is known that there are drawbacks in the effective applicability of the NP when providing care, in order to achieve this effectiveness, it is key that a nurse uses instruments that allow the operationalization of care based on a theory with continued renewal of concepts, definitions, models, and propositions that, on their turn, reflect the assumptions.^{7,8}

Applying the NP, a model of care named as systematization of perioperative nursing care (SPNC), used according to the surgical experience phases.⁵ Among these phases, the immediate postoperative period (phase initiated at the post-anesthetic recovery room - PARR), which represents an opportunity for SPNC applicability, aimed at maximizing patient care within this critical period, since some surgical interventions require differential nursing care, such as orthopedic surgeries.⁹

OBJECTIVES

- To describe the main nursing diagnoses in the light of the theory of basic human needs, proposed by Wanda de Aguiar Horta, according to the NANDA-I taxonomy.
- To propose interventions and outcomes according to the NIC and the NOC for the 5 nursing diagnoses more frequently documented in a post-anesthetic recovery service at a reference hospital in traumatology.

METHOD

Quantitative, cross-sectional, retrospective, descriptive study carried out at a reference hospital in traumatology in Recife, Pernambuco, Brazil, within the surgical center, more specifically in the PARR.

We defined as study sample all medical records of patients in the immediate postoperative period after orthopedic surgery, over 18 years, of both sexes, with a hospital stay up to 24 hours in the PARR. For data collection, these medical records, available at the medical archive service (MEAS) were read, referring to orthopedic surgeries performed in April 2014.

This study consisted of 3 steps: preparation of the data collection instrument, grounded in Wanda de Aguiar Horta's conceptual model, i.e. the theory of basic human needs; data collection; and data processing and analysis.

The first research phase began by preparing records through bibliographical survey about the theory of basic human needs.¹⁰ A search was made for scientific studies using data collection instruments associated with the theory of basic human needs, as well as the most frequent nursing diagnoses in patients in the PARR based on this conceptual model.

In the second stage, the instrument that met the basic human needs was applied to each patient, as well as the main nursing diagnoses and the interventions and outcomes based on Wanda de Aguiar Horta's conceptual model. Next, a list was prepared with the most frequent and specific nursing diagnoses for patients in the immediate postoperative period.

The documentation of nursing diagnoses has been based on nursing history and on medical and nursing evolutions described in the medical records, at the patient's admission to the PARR. The nursing diagnoses evidenced were analyzed according to the NANDA-I diagnostic classification system and correlated with the connections of the

international classification systems NIC and NOC.

Data was analyzed using the software *Epi Info*, version 7.0, and the descriptive statistical analysis was expressed in percentage, according to the frequency of each diagnosis related to the domain to which it belongs. The proposal of interventions and outcomes was grounded in the NIC and NOC systems.

The study complied with the standards of the Resolution of the Brazilian National Health Council (CNS) no. 466/2012 and it has been approved by the Research Ethics Committee of the Federal University of Pernambuco (UFPE), under the Brazilian Certificate of Submission for Ethical Assessment (CAAE) no. 34350814.4.0000.5208 and the Expert Opinion no. 777,606.

RESULTS

A total of 121 medical records from the trauma and orthopedics sector were registered by means of the book of admissions to the PARR during April 2014. Out of these,

thirty six medical records that were not found in the MEAS due to incorrect registration were excluded, seven had a surgical specialty different from this study, four belonged to patients under 18 years of age, six had incomplete nursing history, and 3 did not refer to the study period.

In the end of the study, 65 medical records of patients with an average age of 37.2 years were evaluated, 47% of them were aged between 18 and 30 years, with a higher frequency of men 57 (87.6%).

We identified 70 nursing diagnoses distributed into 19 classes belonging to 9 domains. The 5 most frequent diagnoses were: Risk of infection (100%); Impaired skin integrity (96.9%); Impaired tissue integrity (93.8%); Acute pain (87.9%); and Self-care deficit for bath/hygiene (69.2%) (Table 1).

Table 1. Distribution of the most frequent nursing diagnoses according to the NANDA-I diagnostic classification of the 65 patients hospitalized in the post-anesthetic recovery sector for April 2014.

Nursing diagnosis	N	%
Risk of infection	65	100
Impaired skin integrity	63	96.9
Impaired tissue integrity	61	93.8
Acute pain	57	87.9
Self-care deficit for bath/hygiene	45	69.2
Impaired physical mobility	41	63
Risk of injury perioperative positioning	36	55.3
Impaired comfort	35	53.8
Risk of bleeding	33	50.7
Anxiety	30	46.1
Impaired transferability	26	40

Source: Prepared by the authors.

As for the NANDA-I domain distribution, the domain Security and protection obtained the highest frequency (38%), followed by Activity

and rest (28.2%), Comfort (12%), and Stress coping/tolerance (11%). The average number of diagnoses per patient was 13.5.

Table 2. Distribution of nursing diagnoses by NANDA-I domains.

Nursing domain	%
Safety and protection	38
Activity and rest	28.2
Comfort	12
Stress coping/tolerance	11

For the 5 most frequent nursing diagnoses in this study, the respective care plans were drawn up, which comprise nursing

interventions based on the NIC and the nursing outcomes in the NOC (Figures 1, 2, and 3).

Domain 11 - Safety and protection		
Nursing diagnoses (NANDA-I) ¹¹	Nursing interventions (NIC) ¹²	Nursing outcomes (NOC) ¹³
Risk of infection	• Infection control: Transoperative; • Hydroelectrolytic control; • Care of injuries, catheters; • Positioning; • Protection against infection; • Skin supervision.	• Risk control; • Risk detection; • Tissue integrity: skin and mucous membranes; • Wound healing: first and second intention; • Knowledge: infection control.
Impaired skin integrity	• Care of injuries, with pressure ulcers; • Care of incision place; • Care of traction/immobilization; • Drug administration: topics; • Bath; • Skin supervision.	• Tissue integrity: Skin and mucous membranes; • Wound healing: first and second intention; • Self-care: hygiene; • Water balance; • Tissue perfusion: peripheral.
Impaired tissue integrity	• Care of injuries; • Care of incision site; • Care of traction/immobilization; • Protection against infection; • Monitoring of vital signs.	• Tissue integrity: skin and mucous membranes; • Wound healing: first and second intention; • Peripheral tissue perfusion; • Thermoregulation.

Figure 1. Nursing interventions and outcomes for the nursing diagnoses in the Safety and protection domain, in patients admitted to the post-anesthetic recovery sector for April 2014, according to the NANDA-I, NIC, and NOC.

Domain 12 - Comfort		
Nursing diagnoses (NANDA-I) ¹¹	Nursing interventions (NIC) ¹²	Nursing outcomes (NOC) ¹³
Acute pain	• Administration of analgesic drugs; • Care of patient-controlled analgesia (PCA); • Pain control; • Sedation control; • Reduction of anxiety; • Improved sleep.	• Pain control; • Pain level; • Comfort level; • Anxiety level; • Client satisfaction: symptom control; • Sleep.

Figure 2. Nursing interventions and outcomes for the nursing diagnoses in the Comfort domain, in patients admitted to the post-anesthetic recovery sector for April 2014, according to the NANDA-I, NIC, and NOC.

Domain 4 - Activity and rest		
Nursing diagnoses (NANDA-I) ¹¹	Nursing interventions (NIC) ¹²	Nursing outcomes (NOC) ¹³
Self-care deficit for bath/hygiene	• Self-care assistance: bath/hygiene; • Care of the perineum; • Foot care; • Ease of self-responsibility; • Self-care assistance: daily life activities; • Positioning; • Prevention of falls; • Promotion of exercise.	• Self-care: daily life activities (DLAs); • Self-care: bath, hygiene and oral hygiene; • Performance of body mechanics; • Comfort level; • Directing one's own care.

Figure 3. Nursing interventions and outcomes for nursing diagnoses in the Activity and rest domain, in patients in the post-anesthesia recovery sector for April 2014, according to the NANDA-I, NIC, and NOC.

DISCUSSION

It was observed that the study population had an age between 18 and 30 years, with a predominance of men.

These data denote precocity in seeking health services with trauma and orthopedics support, motivated by high morbidity and mortality due to external causes, in victims of

traffic accidents, mainly involving motorcycles, warning about the current epidemiological profile of accidents involving automotive vehicles in the state of Pernambuco, Brazil, which are more frequent in men and young individuals.¹⁴ Considering that the use of motorcycles as a means of transport and work increases considerably and rapidly and, as a consequence, this increases the number of hospitalizations because of

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accidents, we have a possible explanation for this finding.¹⁴

The average number of nursing diagnoses per patient was 13.5, higher than other studies; one of them¹⁵ analyzed 144 patients in a medical clinic unit in the state of Pernambuco and found an average of 4.8 diagnoses per patient, where the diagnosis of acute pain (66.7%) stood out. The results of this study suggest a greater need to implement the nursing process in care, something which refers to the great potential and influence of a nurse's role in a patient's recovery after the surgical experience.

Identifying the nursing diagnoses described in this study showed a great relevance of the theme for a nurse's practice within the surgical center, more specifically in the PARR. It is already known that the SPNC is an indispensable work tool for organizing and consolidating nursing care for patients undergoing the orthopedic surgical experience.^{9,16}

The diagnosis Risk of infection, belonging to the domain Safety and protection, was the most frequent, it is defined as "being at increased risk to be invaded by pathogenic organisms."¹¹ This diagnosis has a common attribute that follows the post-surgical client, especially when the individual is affected by musculoskeletal trauma with bone exposure. In these circumstances, hospitalization time is likely to increase, with a greater probability of performing multiple surgeries or reoperations, something which may increase patient's stay in a hospital environment with a greater exposure to the risk of infection. Such data corroborate a study¹⁷ that evaluated 60 patients in a male medical and surgical hospitalization unit and found that 83.3% of its population had a diagnosis of Infection risk.¹⁷

Also in the domain Safety and protection, Impaired skin integrity, defined as "change in epidermis and/or dermis"¹¹, stands out as the second most frequent diagnosis, followed by impaired tissue integrity, whose definition refers to "damage to mucous membranes, cornea, skin, or subcutaneous tissues."¹¹ Perhaps, most patients in this study had excoriations and cutaneous lesions due to accidents and falls, and especially because all of them had undergone surgical procedures and other invasive procedures, which in turn cause injury to the skin and underlying tissues that may trigger another diagnosis, the Risk of bleeding. These findings corroborate another study, which also found cutaneous involvement in its patients caused by pressure

foci and in areas submitted to physical trauma.¹⁸

These results warn about the need for periodicity in the evaluation of lesions, surgical incision sites, insertion of traction, catheters, and drains, as well as the adequacy of dressing prescription in line with client evolution, which need to be a priority in the nursing practice.¹⁷

The diagnosis Acute pain, belonging to the Comfort domain, which according to the NANDA-I is defined as "unpleasant sensory and emotional experience arising from actual or potential tissue injury or described in terms of such injury, with a sudden or mild to severe intensity, with an anticipated or predicted outcome and duration of less than six months"¹¹, was also included among the 5 most frequent diagnoses. In another study, with 50 patients submitted to orthopedic surgery, this diagnosis was evidenced throughout the sample.¹⁹

The presence of pain is due to the surgical incision, as well as to stimuli of nerve endings provoked by chemical products used in the surgery, ischemia due to interference in tissue blood support, pressure, muscle spasm or edema, the latter also caused by trauma that generate injuries due to falls, automobile accidents, and accidents at the workplace.^{17,19}

The significant number of clients who had this diagnosis points out that pain deserves repeated attention by the nurse through commitment and improvement in the nursing team's professional qualification, looking for the elucidation of ways to identify and eliminate pain and consequently improve the quality of care provided to clients. Improving pain-related care will also bring positive effects for other diagnoses that are also frequent in this study, Impaired comfort and Anxiety.

The diagnosis Self-care deficit for bath/hygiene also stands out, which means "impaired ability to perform or complete bathing or intimate hygiene activities on her/his own."¹¹ This diagnostic category has a direct relationship with mobility, where this is a determinant factor for a patient's independence preservation, which in turn is often depreciated due to orthopedic, surgical, trauma, and pain conditions. Due to this interconnection, the diagnosis Impaired physical mobility was also quite frequent, as well as Impaired transferability. A possible explanation for this finding is that the surgical treatment itself requires resting and restricting some movements.¹⁷

A nurse's role in the execution of nursing interventions to treat Impaired physical mobility, which cover the prevention, promotion, maintenance, and rehabilitation levels, aiming to prevent the installation of new morbidities, in order to improve quality of life and provide a patient with physical well-being.^{20,21}

CONCLUSION

This study allowed the identification of the basic human needs and the care procedures needed by patients in the immediate postoperative period of orthopedic surgeries, contributing to outline the relevance of a nurse's role in trauma and orthopedics assistance in the scope of the surgical center.

This study made it possible to identify 70 nursing diagnoses (19 classes) in 9 domains of the NANDA-I taxonomy. For the 5 most frequent diagnoses, nursing outcomes and interventions were proposed, according to the basic human needs affected in each patient.

The results achieved in this study warn nursing professionals about working under a theoretical framework capable of improving their skills and correlating knowledge in an interdisciplinary way. These results may contribute to strengthen the teaching-learning process between the academy and the professional practice in care provided in specific fields. Prior knowledge of the most frequent diagnoses favors rather concise and direct evaluations, as well as more effective interventions.

The nursing care provided in a systematized way to patients allows improving their assistance, making it possible that they evolve satisfactorily after completion of the nursing process, which proposes resources for organizing and systematizing care by providing the nursing practice with means.

A nurse, when using nursing diagnoses, seeks to serve the clientele by resorting to comprehensive care, in order to provide good quality in her/his work, having theoretical and scientific basis, since nursing diagnoses identify the main needs with which a nurse should intervene.

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