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DIAGNOSES, RESULTS AND NURSING INTERVENTIONS FOR PEOPLE SUBMITTED TO ORTHOPEDIC AND TRAUMATOLOGICAL SURGERIES

DIAGNÓSTICOS, RESULTADOS E INTERVENÇÕES DE ENFERMAGEM PARA PESSOAS SUBMETIDAS A CIRURGIAS ORTOPÉDICAS E TRAUMATOLÓGICAS

DIAGNÓSTICOS, RESULTADOS E INTERVENCIONES DE ENFERMERÍA PARA PERSONAS SOMETIDAS A CIRUGÍAS ORTOPÉDICAS Y TRAMATOLÓGICAS

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ABSTRACT

Objective: to identify the main nursing diagnoses, outcomes and interventions of people based on the North American Nursing Diagnosis Association (NANDA-I), Nursing Outcomes Classification (NOC) and Nursing Interventions Classification (NIC) in the Trauma-Orthopedic perioperative period. ***Method***: this study is descriptive-exploratory, and with a quantitative approach carried out in the surgical hospitalization units of a public hospital. There were 160 clients participating in the study. Data collection was performed anamnesis, clinical examination, and medical records. ***Results***: the prevalence was of men, with a mean age of 45.2 years old. There were 13 nursing diagnoses, 11 outcomes, and 12 nursing interventions highlighted. ***Conclusion***: from this study, it was perceptible that the nursing classifications guided the construction of nurses´ knowledge and skills to direct the actions, with consequent improvement of the quality of care provided. ***Descriptors***: Nursing Assistance; Traumatology; Orthopedics; Nursing.

RESUMO

Objetivo: identificar os principais diagnósticos, resultados e intervenções de enfermagem de pessoas, com base na *North American Nursing Diagnosis Association* (NANDA-I), *Nursing Outcomes Classification* (NOC) and *Nursing Interventions Classification* (NIC), no período perioperatório de cirurgias traumato-ortopédicas. ***Método***: estudo descritivo-exploratório, de abordagem quantitativa, realizado nas unidades de internação cirúrgica de um hospital público. Participaram do estudo 160 clientes. Para a coleta dos dados, realizou-se anamnese, exame clínico e verificação dos prontuários. ***Resultados***: a prevalência foi de homens, com média de idade de 45,2 anos. Destacaram-se 13 diagnósticos de enfermagem, 11 resultados e 12 intervenções de enfermagem. ***Conclusão***: a partir deste estudo foi perceptível que as classificações de enfermagem nortearam a construção do conhecimento e da habilidade do enfermeiro a fim de direcionar as ações, com consequente melhoria da qualidade da assistência prestada. ***Descritores:*** Assistência de Enfermagem; Traumatologia; Ortopedia; Enfermagem.

RESUMEN

Objetivo: identificar los principales diagnósticos, resultados e intervenciones de enfermería de personas, con base en la *North American Nursing Diagnosis Association* (NANDA-I), *Nursing Outcomes Classification* (NOC) and *Nursing Interventions Classification* (NIC), en el período perioperatorio de cirugías traumatológias-ortopédicas. ***Método***: estudio descriptivo-exploratorio, de enfoque cuantitativo, realizado en las unidades de internación quirúrgica de un hospital público. Participaron del estudio 160 clientes. Para la recolección de los datos se realizaron anamnesis, exámen clínico y, verificación de los prontuarios. ***Resultados***: la prevalencia fueron los hombres, con media de edad de 45,2 años. Se destacaron 13 diagnósticos de enfermería, 11 resultados y 12 intervenciones de enfermería. ***Conclusión***: a partir de este estudio fue perceptible que las clasificaciones de enfermería guiaron en la construcción del conocimiento y de la habilidad del enfermero para dirigir las acciones, con consecuente mejoría de la calidad de la asistencia prestada. ***Descriptores***: Cuidados de Enfermeira; Traumatología; Ortopedia; Enfermería.

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INTRODUCTION

Trauma is one of the leading causes of death in the age group from 5 to 40 years old, and it is still responsible for the loss of the greatest number of years of life than any other condition.[1] One of the conditions of greatest morbidity in contemporary society is Orthopedic trauma, which can compromise the individual´s function, his economic participation in society and his family and community integration.[1-2]

Orthopedic trauma continues to victimize thousands of people every year in the world, resulting in fractures due to a series of accidents, such as accidents and falls at work, sports, traffic accidents, among others. These accidents occupy a prominent place, both due to the high prevalence of injuries, which result in hospitalizations, high costs, as they require specialized care, as well as extensive rehabilitation periods after discharge from hospital[3]. Another important factor is the increase in the number of elderly individuals in the world population; national data indicate that 30% of the elderly fall at least once a year, and of all falls, 5% result in fracture.[4]

Orthopedic and Traumatology nursing is a specialized area, related to assistance in situations of diseases, congenital and developmental processes, traumas, infections, degenerative diseases, and other compromises that affect the musculoskeletal, joint and supporting connective tissue. It includes clinical, rehabilitative and surgical health problems, including the perioperative period, which involves the phases: immediate and preoperative, intraoperative, anesthetic and postoperative recovery. It comprises care, prevention, and rehabilitation of individuals in all ages, families and communities.[3,5]

Traumatic disorders and injuries that affect the musculoskeletal system cause pain, loss of function and deformities, and have been prominent in the last years in frequency, becoming an important health problem because they cause personal and social costs.[5] Like most of the orthopedic and traumatological disorders, it has long-term development; the nurse must be able to provide a systematic assistance, identifying clinical evidence, implementing interventions early and evaluating results, as this will improve the quality of care provided to patients.[3]

The nurse uses the Nursing Process to systematize care. It is the scientific method that guides the actions of the profession, allowing to identify, understand, describe human needs, proposing which aspects of these needs require nursing interventions and obtaining satisfactory results in the implementation of care.[6] It is based on scientificity, in clinical reasoning, aiming to provide humanized care and involving five moments: research, nursing diagnosis, planning, implementation, and evaluation.[6-7]

In Brazil, through Resolution No. 358/2009, the Federal Nursing Council regulated the Systematization of Nursing Assistance (SAE), and this presupposes the use of the Nursing Process. This should be implemented in all public and private healthcare institutions in the Brazilian territory.[8]

Standardized nursing languages were developed to reach the sciences and to meet this need and the American Nurses Association (ANA). With this, the nursing could define its body of knowledge and evaluate its contribution, both in quality and in cost-benefit.[7] The use of standardized languages in nursing care and documentation, such as the NANDA-I (North American Nursing Diagnosis Association),[9] Nursing Outcomes Classification (NOC)[10] and Nursing Intervention Classification (NIC-Nursing Interventions Classification),[11] enable to capture all the contextual elements of the nursing care process provided to patients.[7,12]

Standardized nursing languages/terminologies, such as NANDA-I[9], NOC[10], and NIC[11], play an important role in describing and defining nursing care.[7] They provide clear concepts and definitions of nursing phenomena and improved nursing care, allowing nurses to use the same terminology to describe clients´ diagnoses, outcomes, and nursing interventions in many contexts, both nationally and internationally.[6-7]

Critical reasoning provides nurses with a basis for their planning to assist and cares for the patient, family, or community.[6] Nursing diagnosis is an instrument that provides a clinical judgment of the individual´s responses to current or potential health problems or health problems. In this way, it allows establishing elements for the identification of the nursing interventions that best reach the health outcomes for which the nurse is responsible.[7,12]

The use of the nursing diagnosis allows the identification of the answers given by the individual, as well as the analysis and interpretation, enabling the exercise of nursing science and approaching its theoretical basis. In addition to the nursing

diagnosis, the NANDA-I, NIC and NOC classifications are effective methodologies used to systematize care better.[7]

Nursing interventions and outcomes can provide adequate foundations for evidence-based guidelines. Each NOC[10] outcome contains a list of indicators that can be measured to document progress towards the desired goal.[7] Each NIC[11] intervention contains a list of activities or interventions nurses can choose. Appropriate references are provided for all nursing outcomes and interventions, and they have been reviewed by clinical specialists, and surveys have been used in their development. However, the level of evidence is not specified in the texts, and it is not possible to determine whether it is the opinion of experts, either clinically based or research-based.[12]

Considering the complexity of the issue, the question is: what are the diagnoses, results and nursing interventions present in patients with perioperative orthopedic trauma?

The motivation for this research came from being an unexplored topic of great importance. The lack of publications in the orthopedic and trauma nursing area, involving the nursing process, indicates the need to establish the mapping of the main diagnoses, results and nursing interventions to reach a better care for patients with orthopedic trauma, enabling nurses to more clearly identify the care needs of the people for whom they are responsible. From this perspective, this study is of great importance for the nursing professional.

The aim of this study was to identify the main nursing diagnoses, outcomes and interventions of people based on the North American Nursing Diagnosis Association (NANDA-I), Nursing Outcomes Classification (NOC) and Nursing Interventions Classification (NIC), in the perioperative period of orthopedic surgeries.

METHOD

This study is descriptive-exploratory with a quantitative approach, performed in the medical-surgical hospitalization units in a public hospital located in the southern region of the state of Bahia, Brazil. Based on convenience sampling, patients with orthopedic trauma in the perioperative period admitted to the referred hospital from September 2013 to March 2014 were chosen as the selection criteria, and who agreed to participate in the study by completing and signing the Free and Informed Consent Term (TCLE). There were 160 patients participating in the study.

The inclusion criteria in the research were people aged over 18 years old who underwent conscious orthopedic surgeries, and the level of consciousness was verified by applying the Glasgow Coma Scale, with a score equal to 15.

Anamnesis and clinical examination and as a secondary source of data the patients´ medical records, in particular the history (research form), the evolution and the nursing annotations were carried out to collect data, since they provide information addressing the requirements of actions of nurses provided, those related to the development of the health condition, containing questions related to sociodemographic data, surgical and disease antecedents, as well as laboratory data.

The study was submitted and approved by the Research Ethics Committee of the State University of Santa Cruz/UESC, opinion nº 436.807/2013. Before the collection, a formal request for authorization was made to the person responsible for the medical-surgical unit to collect the data.

The study participants were informed about the purpose of the study, the confidential nature and the possibility of interrupting their participation without any harm, after the acceptance, they signed the TCLE.

The diagnoses, results and interventions/activities were compared with the literature and evaluated by five experts with expertise in the area, that is more than ten years of practice in the profession, with a master's and/or doctorate degree, publications in congresses, or journals indexed in the area of diagnosis, results and nursing interventions in the last five years. Only five specialists were established, considering the difficulty to find nurses with the necessary expertise at the time of data collection.

The data treatment was performed in EpiInfo software version 7, with double entry, to ensure database consistency. The analysis was performed in the Statistical Package for Social Science (SPSS), version 20.0, by absolute and relative frequencies to obtain the frequency of nursing diagnoses, results and interventions to obtain a profile of the nursing process. The titles of the diagnoses, results and interventions/activities formulated for more than 50.0% of the study participants were considered as main. The titles of nursing diagnoses were presented according to the NANDA-I[9] domains to favor the identification

of the care areas to the orthopedic lesion patient.

RESULTS

Tables were elaborated and described in text form for the presentation of the results, according to the socioeconomic data of the 160 researched participants. Most of the patients (67.0%) were male, with a mean age of 45.2 years old, ranging from 21 to 80 years old, with 37.5% (n=60) over 60 years old. Regarding the reason for orthopedic surgeries, 72.0% (n=115) was related to polytrauma, 10% (n=16) was for femoral fracture, 8.65% (n=14) due to forearm fracture, 7.5% (n=12) due to hip injury, 1.85% (n=3) related to gunshot injury.

Table 1 shows the nursing diagnoses and their respective defining characteristics, related factors or risk factors associated with the domains: Safety and Protection, Coping and Stress Tolerance.

Table 1.Defining characteristics, related factors or risk factors of nursing diagnoses of patients with perioperative orthopedic trauma associated with the domains: Safety and Protection, Coping and Stress Tolerance. Itabúna (BA), Brazil, 2014.

Nursing Diagnostics	n=160	%
Domain 11 - Security and Protection		
Risk of infection	160	100
Risk factors: Inadequate primary defenses (traumatized tissue) and invasive procedures	160	100
Impaired tissue integrity	112	70
Defining characteristics: Destroyed and injured tissue	128	80
Related Factors: Mechanical and Nutritional Factors	96	60
Hyperthermia	96	60
Definitive characteristics: Increase in body temperature above normal parameters	126	100
Related Factors: Anesthesia/Disease		
Delayed Surgical Recovery		
Defining characteristics: Discomfort report, impaired mobility		
Evidence of interruption in healing of the surgical area	160	100
Need help completing self-care	112	70

Table 2 shows the nursing diagnoses and their respective defining characteristics, related factors or risk factors associated with the domains: Activity and Rest, Comfort, Nutrition and Perception, and Cognition.

Table 2. Defining characteristics, related factors or risk factors of the Nursing Diagnoses of patients with orthopedic trauma in perioperative, associated with the domains: Activity and Rest, Comfort, Nutrition and Perception, and Cognition. Itabúna (BA), Brazil, 2014.

Nursing Diagnostics	n=160	%
Domain 4 - Activity and Rest		
Physical Impairment Defining characteristics: Limited range of motion Postural instability / Slow movements. Related factors: Loss of integrity of bone structures. Musculoskeletal damage/Pain/Joint stiffness	128	80
Impaired Immobility Defining characteristics: Impaired ability to travel the required distances Related Factors: Musculoskeletal/Pain Damage	128	80
Domain 12 - Comfort Acute pain Defining Characteristics: Protective Behavior Expressive behavior (agitation, crying) Diaphoresis/facial expression/Protective gestures/self-report of pain Changes in the physiological pattern. Related factors: Harmful agents (biological, physical)	160	100
Domain 5 - Perception and Cognition Poor Knowledge Defining characteristics: Verbalization of the problem Related Factors: Lack of Exposure	128	80
Domain 2 - Nutrition Liquidity Volume Imbalance Risk Risk factors: Traumatic injury (hip fracture)	128	60

Six diagnoses of Nursing belonging to the Safety and Protection domain were highlighted, with diagnoses of Infection Risk and Impaired Tissue Integrity (100.0%) followed by Hyperthermia and Delayed Surgical Recovery (80.0%) and the less frequently were the Aspiration Risk and Body Temperature Imbalance Risk (60.0%). There were two nursing diagnoses linked to the Facing and Stress Tolerance domain, the diagnosis of Anxiety (100.0%) was more frequently identified, accompanied by the diagnosis of Fear (80.0%). The highest frequency of Acute Pain (100.0%) was evidenced in the Comfort domain; in the domain Perception and Cognition: Knowledge Deficient (80.0%) and, in the Nutrition domain, the Liquidity Volume Imbalance Risk (60.0%).

Table 3 shows the nursing results based on the Nursing Results Classification (NOC) of the patients surveyed with orthopedic trauma in the perioperative period.

Table 3. Nursing Outcomes of patients with perioperative orthopedic trauma. Itabúna (BA), Brazil, 2014.

Nursing outcomes	n=160	%
Pain Level	160	100
Mobility	144	90
Personal Well-Being	144	90
Comfort State	144	90
Wound Healing: First Intent	144	90
Bone Consolidation	128	80
Pain Management	112	70
Joint Mobility	112	70
Knowledge: infection control	112	70
Peripheral Tissue Perfusion	112	70
Self-care: activities of daily living	96	60

The expected nursing results stood out were the level of pain (100.0%), mobility, personal well-being and comfort state (90.0%), wound healing: first intention and bone consolidation (80.0%), followed by pain control, joint mobility, knowledge: infection control, peripheral tissue perfusion and self-care: activities of daily living (70.0%).

Table 4 is composed of the nursing interventions based on the Classification of Nursing Interventions (NIC) of the study participants with orthopedic trauma, perioperative, related to administration of

medications: intramuscular and administration of analgesics frequently, followed by the prevention of falls, Infection control, incisional site care, and pain control.

Table 4. Nursing interventions and their respective activities of patients with orthopedic trauma, perioperative. Itabúna (BA), Brazil, 2014.

Nursing Interventions	n=160	%
Intramuscular Medication Administration	160	100
Following the right nine of drug administration		
Viewing patient´s allergy history		
Administering injection using aseptic technique		
Monitoring the expected and unexpected effects of the drug		
Documenting medication administration		
Administration of Analgesics	160	100
Determining site, characteristics, and severity of pain before medicating		
Administering medication according to medical prescription		
Checking allergy history		
Documenting response to analgesic and all side effects		
Fall Prevention	144	90
Identifying patients´ physical deficits, capable of increasing the potential for falls in an environment		
Identifying environmental characteristics with high potential for falls		
Monitoring gait, balance, and level of fatigue while walking		
Providing auxiliary devices to make the floor firmer		
Using bed sides with adequate length and height		
Infection control	128	80
Teaching proper patient hand washing and visits		
Tricotomizing and preparing the area as indicated		
Changing intravenous and curative accesses, according to institutional guidelines		
Ensuring the use of proper wound care technique		
Promoting adequate nutritional intake		
Guiding patient and family about signs of infection		
Incision site care	128	80
Explaining the procedure to the patient		
Examining the incision site for hyperemia, edema or signs of dehiscence		
Observing the characteristics of any drainage		
Monitoring signs and symptoms of infection at the incision		
Pain Management	128	80
Performing a complete assessment of pain, including location, onset, duration, frequency, intensity and precipitating factors		
Nonverbal indicators of discomfort		
Choosing and implementing measures to facilitate pain relief		
Monitoring patient satisfaction with pain control		

Table 5 is composed of the nursing interventions based on the Classification of Nursing Interventions (NIC) of the study participants with orthopedic trauma, perioperative, related to self-care assistance, embolic care: peripheral and teaching: preoperative, rest in bed and exercise therapy: joint mobility.

Table 5. Nursing interventions and their respective activities of patients with perioperative orthopedic trauma. Itabúna (BA), Brasil, 2014.

Nursing Interventions	n=160	%
Self-care assistance Considering the patient´s age by promoting self-care activities Monitoring the patients´ ability for independent self-care Giving assistance until the patient can take care of self-care Encouraging independence, but interfering when the client has difficulties	112	70
Caring for the embolus: peripheral Monitoring the occurrence of pain in the affected area Keeping the patient in bed and change his position every 2h Monitoring neurological status	112	70,0
Traction/Immobilization Care Positioning correct body alignment Monitoring the external fixation mechanism Monitoring pin insertion locations Administering proper skin care at friction points Guidance on the importance of proper nutrition for bone healing	112	70
Teaching: preoperative Informing about the scheduled date, time, and location of the surgery Determining the level of knowledge related to surgery Assessing anxiety about surgery Allowing time for client to ask questions and discuss concerns Describing preoperative routines	112	70
Bed rest care Keeping bedding clean, dry and free of folds Raising the sides of the bed as appropriate Placing bedside table within reach of the client Monitoring skin condition	96	60
Exercise therapy: joint mobility Determining the limitations of joint movement Initiating pain control measures before commencement of joint exercises Offering positive reinforcement by performing the exercises	96	60

Nursing interventions based on the NIC were: the administration of medications: intramuscular and administration of analgesics with a frequency of 100.0%, followed by prevention of falls (90.0%), infection control, care with incision site and control (70.0%), bed rest nursing and exercise therapy: joint mobility (60.0%), self-care assistance, embolic care: peripheral and teaching: preoperative (70.0%).

DISCUSSION

In this study, male patients with a mean age of 45.2 years old were predominant, similar to a study developed by patients of the orthopedic ward of a public hospital in Salvador, where male predominance was also observed (89.6%)[13] and another study conducted in Minas Gerais with people undergoing orthopedic surgeries had 59.7% males with a mean age of 48.25 years old.[13]

This finding is justified by the greater participation of men as drivers of vehicles, combined with the high speed of traffic, and by the greater exposure to urban violence. Adult and young patients were the most submitted to traumatic orthopedic surgeries, because of the risk behavior of this age group and the increase of hospitalizations due to external causes.[14-16]

During data collection, the lesions of the musculoskeletal system causing the greatest number of hospitalizations were fractures of upper and lower limbs, caused mostly by traffic accidents. The continuous changes in the way of life and behavior of the population, have altered the way we are affected, there is currently an intense accomplishment of orthopedic surgeries due to trauma.

The disorders and injuries of the muscular, osseous and articular system have increased in frequency and relevance, occupying a more important place in the public health area, both by the morbidity and mortality that they cause as by the functional losses in the economically active population. The main etiologies are: car accidents, violence, falls

from the ground and victims of trampling, involving injuries such as bruises, dislocations, stretches, sprains and fractures.[13,17]

SAE is an assistance model proposing to organize nursing care through the adoption of a scientific and systematic method, providing nurses to care for the patient, the family, and the community, and achieving health indicators based on the records.[18] With SAE, it is assumed that the Nursing Process is implemented to provide care that prioritizes individualized care. However, nurses face difficulties in their implementation.[19-21] Nurses formulated interventions for only 20.0% of the 160 charts analyzed, and no diagnosis and nursing outcome. Some causes for non-application of the Phases of the Nursing Process in some institutions have been reported by researchers. These nurses interviewed point out the lack of time, employees in the sector, theoretical knowledge, practical exercise, resources, beyond the customer barrier in giving information and the lack of disposal of places for reflection and discussion of the subject since the graduation period.[19-20]

Regarding the mapping of the established nursing diagnoses, it was observed that 35.7% are diagnosed as risk, and 64.3% are real diagnosis. This mapping of diagnoses is relevant since, in the planning of nursing care, the initial care must be given to the actual diagnoses, which are the human responses to health conditions of the individual. The risks should be identified and preventive interventions implemented. In this point of view, the planning of nursing care must be carried out in a way to make a control of risks, with the goal of safeguarding the security.[21-22]

Diagnostics were identified for patients in six NANDA-I domains. However, no diagnosis was found for patients in the following domains of human responses: Domain 6 - Self-perception, Domain 7 - Roles and Relationships, Domain 8 - Sexuality and Domain, 10 - Life Principles, Domain 13 - Growth and Development, similarly to another study,[21] besides Domain 1 - Health Promotion and Domain 3 - Elimination and Exchange, being probably described by the largest number of respondents being adults without comorbidities.

The Safety/Protection domain was highlighted by the high incidence of nursing diagnoses presented by the study participants. This domain refers to the person being free of threats, physical injury or damage to the immune system; Conservation against damage and protection; [9] typical expressions in the elderly population, due to being more vulnerable to damage and/or physical and immunological lesions due to senescence, a significant number of elderly were found in this study, 37.5% (n=60). They can be aggravated and anticipated in the presence of various chronic and degenerative diseases.[21-22] The safety and protection of these patients need to be supervised and guaranteed by the entire nursing team to attribute quality to the care provided.[21]

The nursing diagnoses identified in 100.0% of the patients were those usually from the perioperative period as Acute Pain, Risk for Infection, Risk of Falls, Impaired Tissue Integrity, and Anxiety. The nursing diagnoses found in this study are corroborated by another study.[23] However, the frequency distribution is not the same in comparative terms.

The nursing diagnosis Risk of Infection is defined as the individual´s increased risk of being invaded by pathogenic organisms.[9] In this study, this diagnosis was related to factors of inadequate primary defenses such as traumatized tissue and invasive procedures. In the traumatic orthopedic patients, surgical site infection can extend the length of hospital stay, and possible for the patient to enter the hospital with an exposed fracture because, with the rupture of the skin, there is the possibility of contamination by exposure to the environment. In the invasive procedures from the puncture of venous accesses until the surgical accomplishment and when the continuity solution is contaminated by microorganism by endogenous or exogenous sources during the surgery or in the care performed with the surgical incision in the postoperative period.

All the patients had the diagnosis of Impaired Tissue Integrity, defined as mucous membranes, cornea, skin or injured subcutaneous tissues.[9] This diagnosis is also identified in the participants in other studies.[6,23] The defining characteristics are the tissue destroyed and damaged, the factors that are related to this diagnosis are the mechanical factors and nutritional factors. The complexity of the injuries of the musculoskeletal system depends on the mechanism of the trauma the person was imposed, being transportation accidents, physical aggression, gunshot wounds, trampling and falls the most frequent mechanisms. These mechanisms can generate compression, friction, abrupt deceleration, collision, resulting in destruction and injury of

skin, muscle and bone tissue, joints and tendons.[13,24] It is also related to possible nutritional factors, calcium and vitamin deficiency D, excess phosphate (carbonated drinks) and the inadequate number of calories cause the development of disorders of the musculoskeletal system such as osteoporosis and osteomalacia, favoring the appearance of fractures.[1-3]

The diagnosis of Anxiety is understood as an uncomfortable feeling of discomfort or fear, accompanied by an autonomic response; a sense of apprehension motivated by the anticipation of danger.[9] The main factors identified were threats and changes in health status. It was found as affective defining characteristics to show being apprehensive, distressed or worried; Behavioral: restlessness, insomnia or nervousness; Physiological: facial tension, increased perspiration or tremors. Studies indicate the need to perform a surgical procedure in the client develops a change in their balance and some degree of anxiety in the face of new situations, the success of the surgery, distancing the family and compromising the body functions.[14,24]

Anxiety is a common manifestation in the surgical patient during hospitalization. The nursing team should play an educational role throughout the perioperative period to minimize patient insecurity. Providing guidelines and initiating a bond of trust, because the individual will be subjected to several situations that can generate discomforts such as the strange environment, the accomplishment of invasive and painful procedures and the evolution of postoperative surgery.[24]

In a significant number of patients (80.0%), the diagnosis of Impaired Physical Mobility was described, described as a limitation in the independent and voluntary physical movement of the body or one or more extremities,[9] corroborating with other studies.[3,21] Related factors such as pain, loss of integrity of bone structures, musculoskeletal damage and joint stiffness were highlighted. The defining characteristics identified were a limited range of motion, postural instability, and slow movements. The musculoskeletal system also provides a rigid skeletal structure to support body structures, protecting essential internal organs, providing support sites for muscle and tendon support, acting as storage for essential blood and mineral cells, and joint two or more bones, enabling the locomotion and the movements of the body. Any injury or disturbance that impairs the integrity of the musculoskeletal system will compromise the performance of functions, causing limitation in physical movement.[1,13]

All patients presented the diagnosis of Acute Pain, defined as an unpleasant sensation that arises from actual or potential tissue injury or described regarding such injury; Sudden or slow onset, from mild to severe intensity, lasting less than six months.[9] Pain is a subjective experience; its perception is made by the personal account or demonstration of the sufferer. Painful sensation occurs because of injury or disturbances in the musculoskeletal system and may be present mainly in the preoperative and postoperative periods. Factors such as previous experience with pain, anxiety, culture, age and gender may influence increasing or decreasing pain perception in the individual.[14,23] The literature reports that orthopedic surgery is the main cause of intense pain in patients undergoing surgery. Also, the pain mentioned by the patient, many of the surgical procedures performed involve a complex pain mechanism,[25] and it is evident that the perioperative pain control still justifies a greater care and attention in its evaluation by the nursing professionals.

The diagnosis of the risk of falls is defined by the increased susceptibility to falls that can cause physical damage.[9] In other studies[21,23] this diagnosis was also raised in the patients surveyed. The occurrence of falls is one of the major health problems faced by the elderly population, in this study 37.5% (n=60) of patients are over 60 years old, physiological changes related to the advancing age can cause functional limitations being more prone to falls.[22] In addition to the sedation that every surgical patient receives contributing to the occurrence of falls if not monitored.

A diagnosis that deserves to be pointed out is Deficient Knowledge, defined as the absence or deficiency of information related to a specific theme.[9] It presented a frequency of 80.0% related to the lack of exposure to the surgical procedure, and the defining characteristic was identified as the verbalization of the problem. The nursing team should be concerned with providing information to patients and promoting family involvement when needed, as guidance is one of the fundamental constituents of nursing care. Engage in addition to the physical preparation, the psychological, emotional and spiritual preparation of the patient for the surgery that will be performed. Mainly, in the

preoperative period, a time that precedes surgery and anesthesia, and is associated with several activities and preoperative routines, and the uncertainty that arises regarding the postoperative period and the appearance of complications.[23]

Nursing diagnoses with a frequency lower than 50.0% were: Hyperthermia (70.0%), Delayed Surgical Recovery (70.0%), Aspiration Risk (60.0%), Body Temperature Imbalance Risk 60.0%), Fear (70.0%), Impaired Deambulation (60.0%) and Liquidity Volume Imbalance Risk (60.0%).

Before proceeding to the nursing outcomes and interventions, it is important to highlight that the studies on nursing diagnoses are diverse. On the other hand, those that investigate the results according to NOC10 and, the interventions according to IAS[11] are still scarce, mainly for certain surgical situations, such as in orthopedic patient care.

Based on NOC,[10] nursing results above 80.0% of patients who underwent traumatic orthopedic surgeries were: Pain Level (100.0%), Mobility (90.0%), Personal Wellbeing (90, 0%), Condition of Comfort (90.0%), Wound Healing: first intention (80.0%) and Bone Consolidation (80.0%). No studies were found to compare the data presented in this study.

Nursing interventions to perioperative patients for orthopedic trauma are comprehensive and justified by the variety and complexity of many surgical interventions. The guidelines are started and according to the needs of the patients.

Nursing interventions with a frequency greater than 50.0% and their respective activities, based on IAS[11], were: Medication administration: intramuscular (100.0%), where activities such as following the nine of medication administration, monitoring patient allergy history, administering injection using aseptic technique, monitoring expected and unexpected drug effects, documenting medication administration. For the intervention of Administration of analgesics (100.0%), activities were identified such as: determining location, characteristics, and severity of pain before medicating; Checking medical prescription for medication, dose and frequency of prescribed analgesic; Checking allergy history; Meeting comfort needs and perform other activities that help to relax; Documenting the response to the pain reliever and all side effects.

The following activities regarding the fall prevention nursing intervention (90.0%) were found: identifying the client´s physical deficits, capable of increasing the potential of falls in a given environment; Identifying environmental characteristics capable of increasing the potential for falls; Monitoring gait, balance and level of fatigue with ambulation; Providing ancillary devices to leave the floor more firm and use sides of the bed of adequate length and height to avoid falls.

Regarding Infection Control (80.0%), the activities of teaching proper hand washing to health professionals, patients and visitors were highlighted; Tricotomizing and preparing the area, as indicated, in preparation for surgical procedures; Exchanging intravenous accesses, as well as dressings, according to Central Disease Control guidelines; Ensuring the use of appropriate wound care technique; Promoting adequate nutritional intake and guiding the patient and the family regarding the signs of infection. Care with incision site (80.0%) were identified activities as explaining the procedure to the patient; Examining the incision site for hyperemia, edema or signs of dehiscence; Observing the characteristics of any drainage, and monitoring signs and symptoms of infection at the incision. The pain control intervention (80.0%) had a complete evaluation of the pain, including location, beginning, duration, frequency, intensity and precipitating factors as its activities; Nonverbal indicators of discomfort; Choosing and implement a variety of measures to facilitate pain relief; Monitoring customer satisfaction with pain control. A study[14] performed to evaluate pain and analgesia in people in the postoperative period of orthopedic surgery, regarding analgesia, there was a prevalence of the joint administration of nonsteroidal anti-inflammatory drugs and opioids, with a predominance of the analgesic schedule with a fixed schedule and “if necessary.”

Nursing interventions with a frequency of less than 50.0% were self-care assistance (70.0%), care for peripheral embolism (70.0%), care for traction/immobilization (70.0%), (70.0%), rest bed care (60.0%) and exercise therapy: joint mobility (60.0%).

There was a notable absence of diagnoses, outcomes and psychosocial interventions as found in other articles dealing with surgical clients.[23-24]

For the elaboration of nursing interventions some skills and knowledge[25], in this study nurses were important: to carry out the activity for the patient or to assist him whenever necessary, to carry out a survey of the needs of the person hospitalized in the unit of this research to Identify new

evidences/problems or monitor the state of living.

The development of this study allowed the identification of the needs of patients hospitalized in the perioperative period for traumatic orthopedic surgery, providing a basis for the nursing care provided to this population and favoring the expansion of scientific knowledge in this area.

The results of this research were presented at a meeting with all the nursing professionals of the medical-surgical unit of the hospital scenario of the study, believing that it needed to propagate and evaluate the attributes of the nursing process to the whole team, because, under certain circumstances, the nurse elaborates the interventions, but does not implement them. It also provided a reflection and changes, both technical and scientific, as well as in the individuality of the people, because it is something possible and needs to be built together between nurses and users of the medical-surgical sector.

The implantation of the stages of the nursing process in the institution where this study was carried out is in the process of being performed, as it will help nurses to plan, improve care practice and obtain greater professional autonomy and recognition by the patients.

It is worth stressing the limitations of the study because, although it covers the nursing process for individuals in the perioperative period of traumatic orthopedic surgeries, this is not an absolute reality for all patients with perioperative orthopedic trauma, the unpredictability of the course of care to the individual, while being unique in the universe, may bring other impositions and conflicts that should be considered and evaluated by nursing professionals. Another limitation is the reduced sample size. Using only one hospital hinders to generalize the study results.

CONCLUSION

This study addressed the NANDA-I, NIC and NOC classifications in an oncological unit of a public hospital in the state of Bahia, Brazil. It was possible to identify how much the SAE can dynamize the assistance using the nursing process and, still, use of instruments of standardized language and efficiency in the results sought during the nursing work, what are more nursing classifications.

The identification of nursing diagnoses, results, and interventions from this study provided new knowledge regarding the care of the orthopedic patient, as well as the reach of the practice of systematized nursing for the authors and nursing professionals of the hospital scenario of this research. Also, the clinical data accumulated using the terminology classified from the NANDA-I, NOC, and NIC can provide information for specialty nursing oncology and support the development of parameters of nursing practice in the care of people with cancer.

Therefore, it was understood that the needs of patients could be met without costs, only with attention and dialogue, since most of the stressors have a psychological and social peak. One of the challenges for nurses is to provide humanized care to men with neoplasia focused on care and dialogue, based on an adequate scientific method.

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