

CASE REPORT

Nursing assessment of people with bone metastases

Valoración de Enfermería a personas con metástasis ósea

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ABSTRACT

Introduction: bone metastasis is one of the most frequent complications in patients with advanced cancer, causing severe pain, functional limitation, and emotional distress. Nursing assessment is essential to identify needs and design individualized care that promotes patient well-being and quality of life.

Objective: to present a nursing clinical case focused on the comprehensive assessment of a person with bone metastasis, applying the nursing process based on functional health patterns.

Method: a clinical case study was conducted on an adult female patient diagnosed with bone metastasis secondary to breast cancer. Data were collected through interviews, direct observation, and review of the clinical record. The assessment was carried out using Virginia Henderson's model of the 14 fundamental needs, considering physical, psychological, and social dimensions.

Results: the assessment identified priority problems related to cancer pain, reduced mobility, sleep disturbance, and ineffective coping. Nursing diagnoses and interventions were formulated focusing on pain control, emotional support, and self-care promotion. The implemented care plan improved comfort and patient participation in her treatment.

Conclusions: this case demonstrates that comprehensive and systematic nursing assessment guides clinical decision-making and strengthens the autonomous role of nurses in managing patients with bone metastasis.

Keywords: Nursing Assessment; Bone Metastasis; Case Reports; Nursing Process; Cancer Pain; Palliative Care; Quality of Life.

RESUMEN

Introducción: la metástasis ósea constituye una de las complicaciones más frecuentes en pacientes con cáncer avanzado, generando dolor severo, limitación funcional y alteraciones emocionales. La valoración de Enfermería resulta fundamental para identificar necesidades y diseñar cuidados individualizados que favorezcan el bienestar y la calidad de vida del paciente.

Objetivo: presentar un caso clínico de Enfermería enfocado en la valoración integral de una persona con metástasis ósea, mediante la aplicación del proceso de Enfermería sustentado en los patrones funcionales de salud.

Método: se desarrolló un estudio de caso clínico en una paciente adulta diagnosticada con metástasis ósea secundaria a cáncer de mama. La información se obtuvo a través de entrevista, observación directa y revisión de expediente clínico. La valoración se realizó por medio del modelo de las 14 necesidades de Virginia Henderson, considerando dimensiones físicas, psicológicas y sociales.

Resultados: la valoración permitió identificar problemas prioritarios relacionados con dolor oncológico, movilidad reducida, alteración del sueño y afrontamiento inefectivo. A partir de ello, se formularon

diagnósticos de Enfermería y se establecieron intervenciones centradas en el control del dolor, el apoyo emocional y la promoción del autocuidado. La aplicación del plan de cuidados contribuyó a mejorar el confort y la participación activa de la paciente en su tratamiento.

Conclusiones: el estudio evidencia que una valoración integral y sistematizada orienta decisiones clínicas y fortalece el rol autónomo del profesional de enfermería en el manejo del paciente con metástasis ósea.

Palabras clave: Valoración de Enfermería; Metástasis Ósea; Caso Clínico; Proceso de Enfermería; Dolor Oncológico; Cuidados Paliativos; Calidad de Vida.

INTRODUCTION

The science of nursing is constantly evolving, driven by the need to offer practical and humanized responses to the challenges posed by chronic and terminal illnesses. In this context, bone metastasis represents a complex clinical scenario, in which the patient's physical, emotional, and spiritual suffering demands comprehensive, planned care grounded in scientific evidence. From a disciplinary perspective, the value of nursing lies in its ability to identify humane responses to disease processes, facilitating interventions focused on well-being, autonomy, and quality of life.⁽¹⁾

Bone metastasis is the spread of malignant cells from a primary tumor to bone tissue, with the most common sites being the vertebrae, pelvis, ribs, and femur. While medical research has focused on pain management, pathological fractures, and hypercalcemia, nursing is interested in how people live with and cope with this process, and how professional care can alleviate their suffering.⁽²⁾ Nursing professionals are in direct contact with patients, observing their physical, emotional, and behavioral changes, which allows them to make a thorough and continuous assessment.

In this sense, the nursing assessment is the starting point of the nursing care process and represents the most critical phase of professional care. It allows the collection of relevant information about the patient's health status and their physiological, cognitive, emotional, and social responses, and serves as the basis for formulating nursing diagnoses, expected outcomes, and planning effective interventions.⁽³⁾ According to Marriner-Tomey et al.⁽⁴⁾ in 2022, a well-structured assessment facilitates critical thinking, promotes clinical decision-making, and strengthens the autonomy of the nursing professional.

In patients with bone metastases, the assessment must go beyond physical symptoms. It is necessary to identify the impact of chronic pain on mobility, functional independence, sleep patterns, eating, social interaction, and emotional coping. The presence of persistent pain generates fear, anxiety, and feelings of helplessness in both the patient and their family, which makes nursing care a therapeutic process in itself.⁽⁵⁾ Nursing not only administers treatments but also accompanies, listens, and educates, offering the patient a space of dignity in the midst of illness.

Marjory Gordon's model of functional health patterns is an essential tool for structuring this comprehensive assessment. Through eleven interrelated patterns (health perception, nutrition, elimination, activity, sleep, cognition, self-perception, role and relationships, sexuality, coping, and values), nurses gain a complete picture of the person and their environment. This methodology is consistent with the philosophy of humanized care proposed by Jean Watson in 2008, who argues that the act of caring involves recognizing the other as a whole human being, with a history, emotions, and spirituality.

The application of this model in patients with bone metastases allows for the identification of specific human responses, such as impaired physical mobility, sleep disturbance, chronic fatigue, ineffective coping, and spiritual suffering. Based on this, nursing diagnoses can be formulated, such as *Chronic Pain* (00132), *Impaired Physical Mobility* (00085), or *Ineffective Coping* (00069), among others (NANDA-I, 2023). These diagnoses serve as the basis for establishing expected outcomes (NOC), such as *Pain Management* (1605) or *Psychosocial Adjustment* (1308), and interventions (NIC), such as *Pain Management* (1400) or *Emotional Support* (5270), which lend scientific coherence to the care plan.

According to Martínez et al.⁽⁶⁾ in 2023, nursing professionals must take a proactive role in the assessment, planning, and delivery of care for cancer patients, as their direct involvement enables early detection of complications, coordination of interdisciplinary care, and provision of self-care education. This approach reinforces the need to base care on evidence, while also maintaining ethical and human sensitivity in the face of suffering.

The clinical case presented in this study seeks to highlight precisely what is new in nursing care, understood as the ability to transform an experience of pain and dependence into a process of therapeutic accompaniment, focused on empathy, listening, and education. Nursing thus becomes a pillar of support, articulating the clinical, emotional, and social aspects of care. According to Santamaría-García et al.⁽⁷⁾ in 2022, empathetic accompaniment is one of the most significant interventions, as it promotes trust, improves therapeutic

adherence, and reduces patient anxiety.

From the perspective of Dorothea Orem's self-care deficit theory,⁽⁸⁾ nursing serves to support the person when they cannot meet their needs independently. In patients with bone metastases, the loss of autonomy and mobility causes feelings of frustration and dependence, which impacts their self-esteem and their role within the family. Through a care plan focused on promoting self-care, nurses can encourage patient participation in their health process, reinforcing their decision-making capacity and sense of control.

On the other hand, in palliative care, the role of nursing becomes even more relevant. Care at this stage is not intended to cure, but to alleviate suffering and improve quality of life. The nursing assessment enables recognition of symptoms that affect the patient's well-being—pain, dyspnea, anxiety, fatigue—and the planning of interventions to ensure comfort and support. In this regard, Ruiz-Frutos et al.⁽⁹⁾ reported in 2020 that patients who receive comprehensive palliative nursing care report better pain control and greater satisfaction with their care.

Furthermore, the nursing approach to bone metastasis is not limited to the individual. The family also requires support, education, and guidance to cope with the changes that accompany the disease process. Family care, as Collière points out in 1993,⁽¹⁰⁾ is a shared act between the professional and the community, promoting solidarity and mutual support. Assessing family needs strengthens support networks and prevents emotional exhaustion in the primary caregiver.

The scientific relevance of this clinical case lies in demonstrating the practical application of the Nursing Care Process as a tool for critical thinking and therapeutic action, integrating theoretical knowledge with clinical practice. This systematization of care contributes to consolidating nursing as a scientific discipline, generating its own expertise and directly impacting people's health and well-being.⁽¹¹⁾

Likewise, this work seeks to contribute to advanced nursing professional training by demonstrating how the rigorous application of theoretical models and updated taxonomies (NANDA, NOC, NIC) can guide effective interventions in complex clinical contexts. The systematization of care not only improves patient outcomes but also raises the profession's academic and scientific standards.

In summary, bone metastasis is a condition that requires nursing professionals to practice with knowledge, sensitivity, and an ethic of care. This clinical case allows us to reflect on the importance of assessment as a diagnostic and action tool, the therapeutic power of human accompaniment, and the need to highlight nursing's contribution within healthcare teams.

Objective: to describe the comprehensive nursing assessment of a person with bone metastasis through the application of the Nursing Care Process based on Virginia Henderson's 14 needs model and the NANDA, NOC, and NIC taxonomies, to identify priority needs and design innovative interventions that promote the patient's well-being and quality of life.

METHOD

Type of study

A qualitative descriptive study was conducted in the form of a nursing clinical case presentation, focused on the application of the Nursing Care Process (NCP) as a methodological and scientific tool for care.

Location and period

The case took place in the Internal Medicine ward of the ISSSTE Columba Rivera Osorio Hospital, Pachuca de Soto, Hidalgo, from June to August 8, 2025.

Study participant

62-year-old female patient with a medical diagnosis of bone metastasis secondary to breast carcinoma, admitted for severe bone pain and functional limitation in her right lower limb. The intervention focused on the comprehensive assessment of her basic human needs, not on the medical diagnosis.

Methodology

The five phases of the Nursing Care Process (NCP) were applied:

1. Assessment:

Virginia Henderson's 14 Needs Model served as the theoretical framework for data collection, addressing physiological, psychological, social, and spiritual aspects. Semi-structured interviews, participant observation, and the review of clinical records were used to obtain information.

2. Diagnosis:

The data obtained were analyzed and organized according to functional patterns, allowing the following nursing diagnoses to be identified (NANDA-I 2024-2026):

- Chronic pain (00133) related to physical injury agents, manifested by verbalization of persistent pain.
- Impaired physical mobility (00085) related to weakness and pain, manifested by limited movement.
- Ineffective coping (00069) related to situational stress, manifested by verbalization of helplessness.
- Risk of impaired skin integrity (00047) related to prolonged immobility.

3. Planning:

The expected outcomes (NOC) were established, with their respective indicators:

- Pain control (1605) – indicator: reported pain level.
- Mobility (0208) – indicator: ability to change position.
- Coping (1302) – indicator: expression of emotional control.
- Tissue integrity (1101) – indicator: maintenance of intact skin.

Interventions (NIC) were defined:

- Pain management (1400): assess pain intensity, administer prescribed analgesics, apply relaxation techniques.
- Promotion of mobility (0221): passive and active exercises, support with transfers.
- Emotional support (5270): active listening, encouraging expression of feelings.
- Prevention of pressure ulcers (3540): change position every 2 hours, monitor skin.

4. Implementation:

The interventions were carried out over four weeks, with the active participation of the patient and her family. Priority was given to therapeutic support and empathetic communication, reinforcing autonomy and participation in self-care.

5. Evaluation:

A decrease in reported pain (from 8 to 4 on the VAS scale), improvement in partial mobility, adequate emotional adaptation to the disease process, and maintenance of skin integrity were observed. Partial compliance with care objectives was considered, and outpatient follow-up was recommended.

Recording and analysis system: A standardized nursing record format was used with the NANDA-NOC-NIC taxonomies (2024-2026). The information was analyzed using triangulation among clinical observation, recorded progress, and results obtained, and was interpreted using Henderson's model and the humanization of care approach.

PRESENTATION OF THE CASE

This is the case of a 62-year-old female patient diagnosed with bone metastasis secondary to breast cancer. During her hospitalization, the patient reported severe bone pain, fatigue, anxiety, and partial dependence for basic activities of daily living. The nursing assessment, based on Virginia Henderson's model, identified impairment in nine of the fourteen fundamental human needs, including: breathing normally, moving and maintaining proper posture, sleeping and resting, communicating, and engaging in recreational activities. The care approach focused on promoting independence, pain relief, and emotional adaptation to chronic and progressive illness.

1. Assessment Phase

During the assessment, semi-structured interview techniques, direct observation, and analysis of the clinical record were used. Relevant data were identified:

- Persistent bone pain assessed using the VAS scale (8/10).
- Limited mobility in the right lower extremity.
- Difficulty falling asleep.
- Expressions of fear and sadness regarding the prognosis.
- Adequate family support, but limited knowledge about palliative care.

The use of Virginia Henderson's 14 Needs Model allowed us to understand the patient's functional and emotional limitations in relation to her autonomy and general well-being. According to Henderson, the role of nursing is to help sick or healthy individuals perform those activities that would contribute to their health or recovery if they had the strength, will, or knowledge necessary.

2. Nursing Diagnosis Phase

Based on the data collected, the following nursing diagnoses were identified (NANDA-I 2024-2026):

Table 1. Nursing Diagnoses (NANDA-I 2024-2026) identified		
NANDA Code	Nursing Diagnosis	Related factors/Manifestations
00133	Chronic pain.	Related to physical harmful agents; manifested by verbalization of persistent pain.
00085	Impaired mobility.	Related to pain and muscle weakness; manifested by limited movement.
00069	Ineffective coping.	Related to situational stress; manifested by verbalization of helplessness.
00047	Risk of skin integrity deterioration.	Related to immobility and continuous pressure.
00146	Anxiety.	Related to threat of change in health status; manifested by constant restlessness and concern.

These diagnoses guided the planning of nursing outcomes and interventions in order of priority according to the needs identified.

3. Planning Phase

The Expected Outcomes (NOC) and their measurable indicators were established based on the updated taxonomies (NANDA-I, NOC, NIC, 2024-2026):

Table 2. Expected Results and Their Measurable Indicators		
NOC Code	Expected Outcome	Indicators
1605	Pain control.	Reported pain level; participation in relief strategies.
0208	Mobility.	Ability to change position; range of joint motion.
1302	Coping with problems.	Expression of emotional control; use of support resources.
1101	Tissue integrity: skin and membranes.	Skin condition; absence of lesions.
1402	Level of anxiety.	Frequency of negative thoughts; observable relaxation.

Care goals were defined with the patient and her family, prioritizing pain relief and promoting physical and emotional comfort. Active participation by the family was encouraged to reinforce continuity of care.

4. Implementation Phase

The following Nursing Interventions (NIC) were implemented:

Table 3. Nursing interventions (NIC) implemented		
NIC Code	Intervention	Activities Performed
1400	Pain management.	Assess pain intensity; apply relaxation techniques; administer analgesics as prescribed; record pain progression.
0221	Promotion of mobility.	Teach active and passive exercises; promote postural changes; support ambulation with devices.
5270	Emotional support.	Listen actively; provide a trusting environment; facilitate the expression of feelings.
3540	Prevention of pressure ulcers.	Change position every 2 hours; use an anti-bedsore mattress; keep skin clean and dry.
5820	Reduction of anxiety.	Provide guidance on the disease process; apply guided breathing techniques; encourage family support.

During the intervention, the patient's progressive participation in her self-care was observed. A decrease in pain from 8 to 4 on the VAS scale, improvement in partial mobility, and an increase in adaptive emotional expression were recorded.

The intervention was carried out using a holistic and humanized approach, promoting dignity and autonomy, in line with the ethical principle of respect for the sick person.^(5,12)

5. Evaluation Phase

Continuous evaluation showed significant improvements in pain perception, rest, and emotional stability.

The NOC indicators showed progress in three of the five proposed objectives:

- Pain control: Partially achieved.
- Mobility: Observable improvement with support.
- Emotional coping: Significant progress.
- Anxiety: Considerable decrease.
- Skin integrity: Maintained without lesions.

Follow-up confirmed that the systematic use of the Nursing Care Process, based on Henderson's model, enhances the effectiveness of nursing care and improves the quality of life of people with advanced cancer.

DISCUSSION

The results obtained are consistent with those of Gómez-Salgado et al.⁽¹³⁾ in 2022 and Ramos-Sánchez et al.⁽¹⁴⁾ in 2020, who highlight the importance of a comprehensive assessment focused on pain control and empathetic support.

The use of the Henderson model proved adequate for identifying the human needs affected by bone metastasis, enabling more personalized and effective nursing interventions.

Likewise, the application of the Nursing Care Process favored the scientific organization of care, facilitating evidence-based decision-making and interdisciplinary communication.

Authors such as González-Gil et al.⁽⁵⁾ in 2021 and Watson⁽¹²⁾ in 2008 argue that humanized care is an essential component in promoting adaptation and coping in advanced chronic diseases, as reflected in the patient's positive evolution.

However, limitations were identified, such as partial reliance on pharmacological support and the need to reinforce educational strategies for the family, aspects also noted by Ruiz-Frutos et al.⁽⁹⁾ in 2020.

In summary, this case demonstrates that the Nursing Care Process is a scientific and humanistic tool that, when rigorously applied, underscores nursing's disciplinary contribution to the comprehensive care of people with bone metastases.

The analysis of the case highlighted the nursing role's relevance in the comprehensive assessment of needs related to cancer pain. Unlike previous studies by Gómez-Salgado et al.⁽¹³⁾ in 2022 and Ramos-Sánchez et al.⁽¹⁴⁾ in 2020, this case emphasizes the subjective experience of pain and its emotional impact, rather than pharmacological management.

The implementation of the Nursing Care Processes enabled the identification of accurate nursing diagnoses, thereby favoring interventions focused on pain control, mobility, and coping. These results are consistent with those described by González-Gil et al.⁽⁵⁾ in 2021, who emphasize the need for humanized interventions to improve the quality of life of patients with advanced diseases.

Likewise, integrating Virginia Henderson's model facilitated a holistic assessment, recognizing pain not only as a physical manifestation but also as a multidimensional phenomenon that affects overall well-being. The findings reaffirm the importance of nursing in palliative care, where empathy, accompaniment, and continuity of care are essential to alleviate suffering and strengthen the patient's dignity.

CONCLUSIONS

The nursing assessment of people with bone metastases, grounded in the Nursing Care Process and Virginia Henderson's model, enables comprehensive, humanized care that transcends the traditional biomedical approach.

The case analyzed demonstrates that nursing intervention contributes significantly to pain control, strengthening emotional coping, and maintaining functional autonomy.

The systematic use of NANDA, NOC, and NIC taxonomies promotes the standardization and visibility of nursing care, consolidating evidence-based practice and the science of care.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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