



RESEARCH ARTICLE

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## THEORETICAL STUDY OF NURSING PERFORMANCE IN OSTEOSARCOMA CANCER

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### ABSTRACT

To analyze nursing performance in the care of osteosarcoma cancer patients. **Methodology:** Integrative literature review study conducted from the survey and bibliographic analysis in scientific journals, following the recommendations to increase the level of transparency in the review reports, using the Main Items for Reporting Systematic Reviews and Meta-analyses (PRISMA), from the search for the descriptors “osteosarcoma”, “cancer” and “nursing”, which resulted in 14 studies included in the sample. **Results and Discussion:** Intending to extract the evidence that made up the discussion of the study, two analytical categories were elaborated called: Osteosarcoma and its repercussions in the patient's life and Nursing Care to the osteosarcoma patient. **Conclusion:** Osteosarcoma leaves visible marks on the body, caused by therapeutic procedures, leading to social seclusion of the patient. In this sense, the nursing staff acts to recognize the main stressors to which patients are submitted, developing coping behaviors and mood improvement, providing support for reducing the patient's psychological distress, acting in pain management and control and especially as educators in health.

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## INTRODUCTION

Cancer is the generic name given to a group of more than 100 diseases, which have in common the rapid and intense disordered growth of cells, which tend to invade neighboring tissues and organs<sup>1</sup>. Of the new cases of neoplasms that affect individuals annually in the At least one third of the world could have been avoided. In accordance with estimates of cancer incidence in Brazil, recent years have shown evident changes in the social and economic context, which directly reflect the population's health. However, there is an increase in life expectancy and improved cancer diagnosis in the country, based on technological advances and professional improvements<sup>2</sup>. Osteosarcoma (OS) is considered a primary bone tumor, most malignant among bone sarcomas, affecting mainly the extremities of long bones that make up the arms

and legs, although it can develop in any bone of the body. It tends to occur in any age group, however, mainly affects children, adolescents and young adults in the second decade of life, during which time bone growth still occurs. Characterized by the presence of mesenchymal malignant cells located in loose connective tissue, these cells have a high power of differentiation. They produce osteoids characterized by bone-like tissue forming an affected immature bone<sup>3</sup>. The epidemiological history of health in Brazil shows a transition, which affects the reduction of mortality with increasing life expectancy and changing the epidemiological profile. Mortality that was previously evidenced by infectious diseases is now marked by cardiovascular diseases, extrinsic causes, neoplasms and other chronic degenerative diseases<sup>1</sup>. In Brazil, OS is the third most common cause of cancer among young people and adolescents, but it can occur in any age group,

behind only leukemias and lymphomas. The incidence rate is still difficult to determine precisely due to the lack of adequate records. However, it is estimated that 350 new cases per year will be reported<sup>1</sup>. Care for patients with osteosarcoma is complex and should be based on bonding, appreciation of well-being, enlightenment, comfort and relief for the patient<sup>4</sup>. The nursing team is the one that has the closest proximity to the patient, especially in specialized units. Nurses excel in health education, teaching and guiding patients and their families to perform daily care and repair, which help in quality of life<sup>5</sup>. Considering the relevance of the theme, the objective of the study is to analyze the nursing performance in osteosarcoma cancer care<sup>6</sup>.

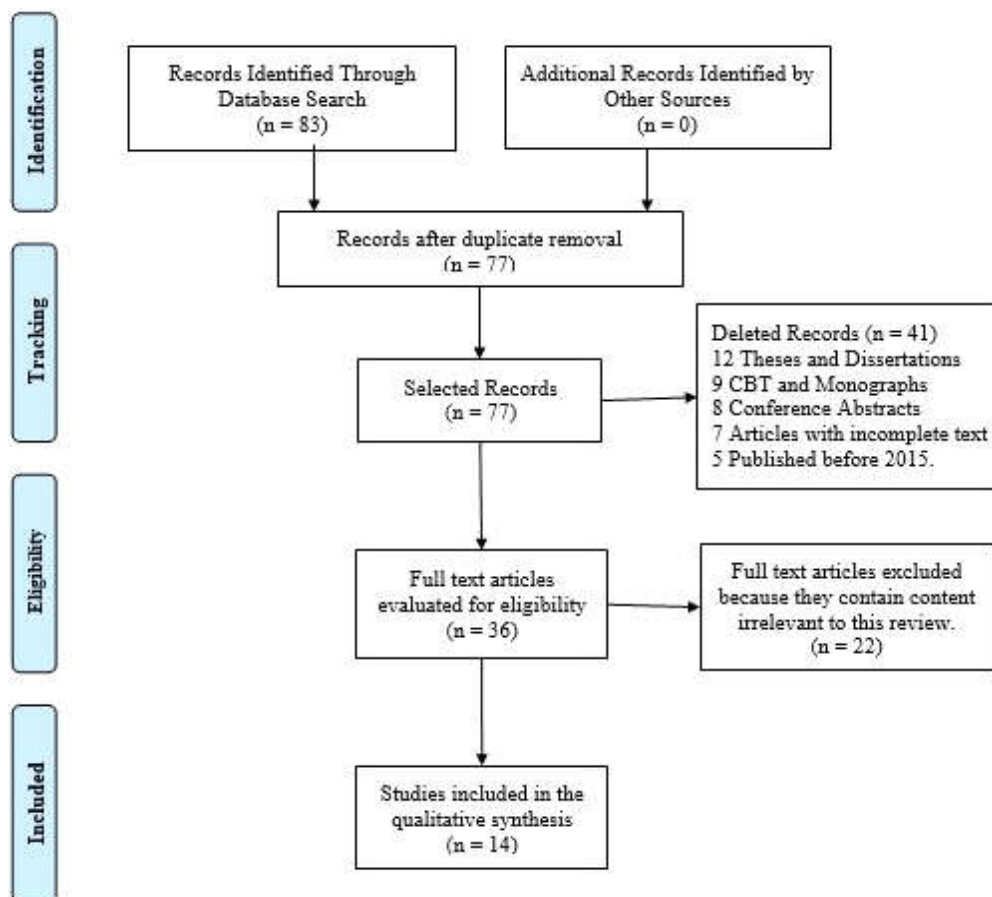
## MATERIALS AND METHODS

This is a bibliographic, descriptive study, integrative literature review method with survey in scientific journals made available electronically through the platforms PubMed, LILACS (Latin American and Caribbean Health Sciences Literature), SciELO Brazil (Scientific Electronic Library Online), BDENF (Nursing Database) and Google Scholar. Inclusion criteria were based on original articles, published in Portuguese, from January 2014 to September 2019, with full text. Exclusion criteria were publications in journals prior to 2014, reviews, monographs, dissertations, theses, official documents, books and gray literature as conference proceedings, articles with incomplete texts and articles in languages other than Portuguese. The descriptors used in the search for articles were: "osteosarcoma", "neoplasms" and "nursing", "Oncology", "Cancer Pain" and "Nursing Care" associated with Boolean operators "e", "or" and "not" To perform different combinations.

The following steps were taken: definition of the guiding question, inclusion and exclusion criteria, search for articles, reading of titles, reading of abstracts, selection in the collections, analysis of the content of the selected studies, categorization of works and writing of the manuscript. Chart 1 shows the delimitation flowchart of the studies included in the sample for analysis and literature review. The bibliographic survey followed the recommendations to increase the level of transparency in review reports, using the main items for systematic analysis and meta-analysis reports (PRISMA). We found 83 articles in the databases; After reading the titles and abstracts, 14 articles were excluded due to duplication. Of the 77 articles selected, 41 records were excluded because 13 did not contain relevant content for the analysis of this study, 9 were from gray literature, 6 were incomplete and 13 were in English; However, 36 full-text articles remained, of which 22 were excluded because they did not present evidence of interest for this study. Finally, 14 articles were included in the qualitative analysis.

## RESULTS

After surveying the descriptors in the databases, selecting the articles and applying the inclusion and exclusion criteria, delimiting the sample, the studies were organized. Table 2 presents the 14 selected articles, distributed by year, authors, title and purpose. The emergence of the discussion categories was based on the reading of the extracted objectives in which 6 journals were mainly concerned with the repercussions that osteosarcoma had on the lives of their patients and 8 aimed in their research the main nursing care offered to patients with osteosarcoma. We exhaustively read the articles in order to extract the evidence that made up the discussion of this study,



Fonte: Cruz AB; Wanzeler KM; Bastos LBR; Simão RC; Castro JT; Bastos DAS. 2019.

**Table 1. Flowchart of the bibliographic survey**

Table 2. Articles eligible for study by year, authors, title and purpose, from 2014 to 2019

Nº	ANO	AUTORES	TÍTULO	OBJETIVO
01	2014	DUARTE, I. V.; GALVÃO I. A.	Adolescent cancer and its psychosocial repercussions: patients' perception.	Understand the process of illness and the psychosocial repercussions from the perception of patients who underwent cancer treatment during adolescence.
02	2014	FERMO, C. V. et.al	Early diagnosis of childhood cancer: the path taken by families.	Describe the pathways taken by children, adolescents and their families, from the onset of signs and symptoms to the definitive diagnosis of cancer.
03	2015	SUEIRO, I. M. et. al	Nursing facing the challenges faced by the family in feeding children on chemotherapy.	Identify the challenges faced by the family in feeding children in antineoplastic chemotherapy and describe the strategies employed to overcome the challenges of nursing.
04	2016	CASTRO, J. R. L. et. al	Clinical and epidemiological characteristics of adolescent osteosarcoma patients.	To know the clinical and epidemiological characteristics of the adolescent patient with OS, treated at the Cancer Hospital in Ceará (HCC) in the city of Fortaleza.
05	2016	VIEIRA, B. S. A. M. P.	Review of osteosarcomas, illustrated with a case report.	To evaluate the current state of the osteosarcoma study and therapy paradigm, and future research perspective.
06	2017	CAVALCANTE, L. F. S. et. al	Osteosarcoma: a review article.	Reveal the clinical and epidemiological characteristics of osteosarcoma.
07	2017	SILVA, T. M. R.; SOUZA, S. R.; COUTO, L. L.	Therapeutic itinerary of adolescents with osteosarcoma: implications for early diagnosis.	To describe the therapeutic itinerary of three adolescents with osteosarcoma.
08	2017	SAMPAIO, J. F.; COSTA, M. F.	Methods for the treatment of pain in children with cancer.	Identify the most used pain relief methods in children with cancer; describe the use of existing methods for total pain relief of children with cancer.
09	2018	ALBUQUERQUE, G. M.; SILVA, J. M.; LIMA, S. A.	Nurse's conception of care for patients with terminal cancer.	To analyze the knowledge exposed in the literature related to professional nursing practice in the care of terminally ill cancer patients.
10	2018	LARA, H. C. A. A. et. al	Knowledge of nursing professionals in pain management of cancer patients.	To identify the knowledge of nursing professionals about pain management of patients with malignant neoplasms in clinical and surgical treatment.
11	2019	SILVA, A. S. C.; RAMOS, E. P.; SILVA, R. M. R. C. A.	Role of nurses with osteosarcoma patients and their families.	Identify the role of nurses in the process of unhealthy education with patients and their families.
12	2017	SANTANA, M. E. et. al	Caring for pediatric oncology: a study based on the nursing process.	Describe nursing diagnoses and care provided to patients with childhood cancer.
13	2018	JÚNIOR, W. A. A. et. al	Laser therapy in the prevention and treatment of oral mucosa in pediatric oncology.	Understand playing as a strategy for coping with chemotherapy treatment in children.
14	2018	SPOSITO, A. M. P. et. al	The best of hospitalization: contributions of play to coping with chemotherapy.	Understand playing as a strategy for coping with chemotherapy treatment in children.

Fonte: Cruz AB; Wanzeler KM; Bastos LBR; Simão RC; Castro JT; Bastos DAS. 2019.

thus emerged 2 analytical categories called: Osteosarcoma and its repercussions in the patient's life and Nursing care to patients with osteosarcoma.

## DISCUSSION

### 1st Category: Osteosarcoma and its repercussions in the patient's life

The occurrence of cancer in the juvenile phase permeates several psychosocial issues such as: distorted perception of the diagnosis, in which there is a need for the physician to adjust his language so that the patient clearly understands his disease<sup>8</sup>. Due to its predominance in the lower limbs, the change in gait is one of the main complaints of the patient. The best prognosis develops when the diagnosis is made in the early stage of the disease, where responses to treatments are most effective<sup>2</sup>. Characterized by producing an immature bone matrix or osteoid tissue by its neoplastic cells, osteosarcoma is classified in its origin as primary and secondary. The primaries originate from bone, the secondary originate in distinct regions of the body and spread to the bone structure, characterizing metastasis<sup>7</sup>. The disease has symptomatic conditions, the most common being progressive pain, progressive local edema, altered local sensitivity, redness, usually with limited movement, soft tissue infiltration, inflammatory signs and impaired circulation<sup>6</sup>. From the onset of signs and symptoms of various types of cancer to the moment of diagnosis, family members and patients face a true pilgrimage in offices of numerous specialties.

The lack of differential diagnoses and the prescription of ineffective treatments lead to a delay in the definitive diagnosis and beginning of treatment that can take months and years, generating a growing feeling of sadness and hopelessness among family members<sup>9,2</sup>. Regarding treatment, the patient's lack of clarity regarding the therapeutic procedures to which they will be submitted is often observed. Changes in social relations and long-term repercussions are common as the feeling of stigmatization and social exclusion and later the feeling of social resumption and reinsertion<sup>8</sup>. High-dose methotrexate chemotherapy treatment + doxorubicin + cisplatin + ifosfamide (MAPI), established in early stages of disease staging, adequate hydration, antiemetics and haematopoietic growth factors, may result in extended resection surgeries and prosthesis reconstruction, with a minimum of sequelae and post-cure clinical surveillance time that exceeds 11 years without neoplastic manifestations of the disease<sup>10</sup>. In a study it was observed that the therapeutic itinerary of 3 cases of adolescents with osteosarcoma occurred after the onset of signs and symptoms, in which there was a progressive change in the patients' routine, due to frequent complaints of pain and edema in the affected limb, with search for emergency services. It was also evidenced repercussions of social life as the removal of school activities and impairments in the self-esteem of adolescents as a shame in relation to amputation<sup>2</sup>.

### 2nd Category: Nursing care for osteosarcoma patients

Nursing staff are the closest to hospitalized cancer patients and actively participate in recognizing the main stressors to which

patients are exposed. They play important roles in the development of coping activities and behaviors and improve the patient's mood aiming at positive repercussions on the continuity of treatment<sup>11</sup>. Nursing is the professional class that best fits the practice of health education, due to the prolonged hospitalization and treatment of OS patients. The results of a research that investigated nursing care for patients with OS showed that nurses are professionals who offer more time to establish dialogues with patients and family, between 11 and 15 minutes and less frequently over 16 minutes, teaching and guiding mainly on strategies and interventions to cope with the side effects of chemotherapy<sup>12-13</sup>. In a retrospective documentary study of patients with juvenile cancer, the sample found 16 cases of osteosarcoma, which demonstrated the use of the nursing process based on nursing diagnoses and interventions to implement qualified care. The main diagnoses found were: Risk for infection, Impaired comfort and Impaired physical mobility, others directly related to adverse effects of chemotherapy such as: Impaired oral mucosa. The main interventions mentioned were vital signs measurement, prevention of vascular injury, wound dressing, stimulating acceptance of diet, pain assessment and stimulation of ambulation<sup>14</sup>. Oral mucositis, arising from chemotherapy treatment, is characterized by a very common adverse reaction and may be conducted by nurses with approaches in teaching the patient to self-care and also by interventions using laser therapy during chemotherapy treatment<sup>5,15</sup>.

Nursing acts by providing protective measures and daily care with cancer patients, especially children, where the feeding factor is often impaired by oral mucositis. The nurse can establish direct verbal communication with the patient so that there is a feeling of maturity and accountability regarding the transition to new eating habits without severe impositions, and family members are responsible for this transition<sup>5</sup>. Importantly, oral mucosa care includes the use of soft-toothed brushes, care plan design, child-friendly food considering the restrictions, these are positive ways to improve food acceptance<sup>5</sup>. A case-control study, involving 60 patients undergoing chemotherapy, used two research groups, one case group and one control group. The case group received daily oral mucosal laser therapy sessions performed by doctors and nurses, and within this longer period of oral mucositis remission, a common side effect of chemotherapy. The results promoted an optimization of antineoplastic treatment, since the non-postponement of sessions due to oral mucositis and the improvement of the patient's eating conditions make the treatment more effective. The study worked with 4 osteosarcoma patients<sup>15</sup>. The nursing team in pain management of cancer patients, acting mainly in the implementation of pharmacological medical prescription, however, develops adjunctive pain relief methods, such as: Position change, psychological support, therapeutic massage, therapeutic touch and relaxation exercises. Nursing professionals have knowledge about types of pain and pharmacological and non-pharmacological methods of pain relief, however, this knowledge is not yet mastered by most nursing professionals, where there is a need for qualification and training of teams in nursing institutions. health<sup>16</sup>. A study conducted with 10 patients, including children and adolescents, found that nurses can use strategies to cope with idleness caused by treatment and hospitalization of patients with interventions based on the promotion of toy therapy in care practice, encouraging the use of available recreational spaces, using the hospital's own toys and encouraging the family and the patient to bring their own

toys to the hospital in order to bring the hospital environment closer to home and promote the patient's recreation. In this study 3 participants were osteosarcoma patients<sup>17</sup>.

## Final Considerations

Osteosarcoma leaves visible marks on the body, constantly caused by therapeutic procedures, leading to social seclusion of the patient. In this sense, the nursing team recognizes the main stressors to which patients are submitted, developing coping behaviors and improving mood, providing support for reducing the patient's psychological distress, acting in the management and control of pain, and especially as due to health educators being responsible for establishing enlightening dialogues and contributing to the knowledge of patients and families about the disease and the procedures that will be performed.

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