Nurses' performance in the face of oncological emergencies: An integrative review

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ABSTRACT

Objective: to identify, in the scientific production, the role of nurses in the face of oncological emergencies. Method: Descriptive study, qualitative approach, of the Integrative Literature Review type. PubMed/Medline, LILACS, SciELO, CINAHL, Google Scholar and Web of Science were used as a database and library. For the categorization and lexical analysis of the selected data, the software IRaMuTeQ was used. Results: The formation of 5 correlated classes emerged. There was a limited amount of materials aimed at nursing care, with a small number of articles published in the last 5 years. Conclusion: The role of nurses in oncological emergencies, supported by scientific knowledge, makes a significant difference in the early detection of oncological emergencies, preventing complications and improving quality of life. The limitations of this review refer to the scarcity of current studies that address the role of nurses in oncological emergencies.

Keywords: Oncology Nursing, Emergency Nursing, Nursing care.

1 INTRODUCTION

Neoplasms are defined as a disease that has the great potential for multiplication and disordered differentiation of cells, which can invade adjacent tissues or distant organs (INCA, 2019/1). Currently, cancer is considered a serious public health problem due to its high incidence and also its social and economic importance (SOUZA, 2021/2).

In Brazil, estimates indicate that for each year of the triennium (2020-2022) there will be 625 thousand new cases of neoplasms, which is responsible for more than 230 thousand deaths in the year 2019 (INCA, 2019/1). Thus, cancer should be considered an emergency, considering that it is a condition of aggravation to health that puts at risk of complications, permanent serious damage and death of affected users, requiring specific, fast and efficient actions of professionals (Barbosa, 2020/ 3).

Oncological emergencies are acute conditions of sudden or late onset related to antineoplastic treatment or also to complications resulting from the disease, since they can be classified as hematological, structural, metabolic and secondary to treatment emergencies. Thus, it is necessary that

nursing care in oncological emergencies be performed quickly in order to provide immediate control of neoplastic changes and assist in the stabilization of the organism (Vieira, 2020/4).

Nursing care comprises the physiological and psychological perspectives of the disease in which the psychological aspect of the patient is related to cognitive function, degree of anxiety and emotional state. In this way, nursing professionals should not only identify an oncological emergency situation, but also proceed in a technical, competent and reassuring way in situations at the psychological level (Kesbakhi, 2020/5).

In relation to the physiological aspects, it is essential to evaluate the main complaint, physical examination, clinical reasoning of health professionals and analysis of the results of laboratory reports (Silva, 2019/6). In view of the above, this study aimed to identify the nurse's performance in the face of oncological emergencies described in the literature.

2 METHODOLOGY

This is a descriptive study, with a qualitative approach, of the Integrative Literature Review type. The review aims to synthesize and critically analyze the identified studies, being developed from six stages: Elaboration and definition of the guiding question, organization and determination of the inclusion and exclusion criteria, (3) definition of the selected studies, categorization of the selected data, analysis and interpretation and presentation of the review (SOUZA; SILVA; CARVALHO, 2010).

The guiding question of the review was elaborated from the PICo strategy (P: Patient- "Users with cancer", I: Interest- "Nursing Care" and Co: Context- "Oncological Emergencies") (GUIMARÃES *et al*., 2019). Thus, it obtained as a guiding question: How is the nursing care provided to patients in situations of oncological emergencies?

The search for the studies obtained was carried out in September 2022 by consulting the databases and electronic databases being: National Library of Medicine and National Institutes of Health/ Medical Literature Analysi Sand Retrieval System (*PubMed/ Medline*), Latin American and Caribbean Literature in Health Sciences (*LILACS),* Scientific Electronic Library Online (*SciELO*), Google Scholar, BDENF, CINAHL and Science Citation Index Expanded (*Web of Science*). The strategy used in the research was through the combination of the descriptors controlled and registered in the DeCS / MeSH (Descriptors in Health Sciences/Medical SubjectHeading) in Portuguese and English being: "Oncological Nursing" AND "Emergency Nursing" AND "Nursing Care".

This review included complete studies contained in the gray literature, published from 2012 to 2022, articles available in journals with online and free access in Portuguese, Spanish and English, and that had relevance to the theme. Out-of-period studies, incomplete studies, reflective studies, letters to the editor, paid studies, editorials and those that were not related to the guiding question were excluded.

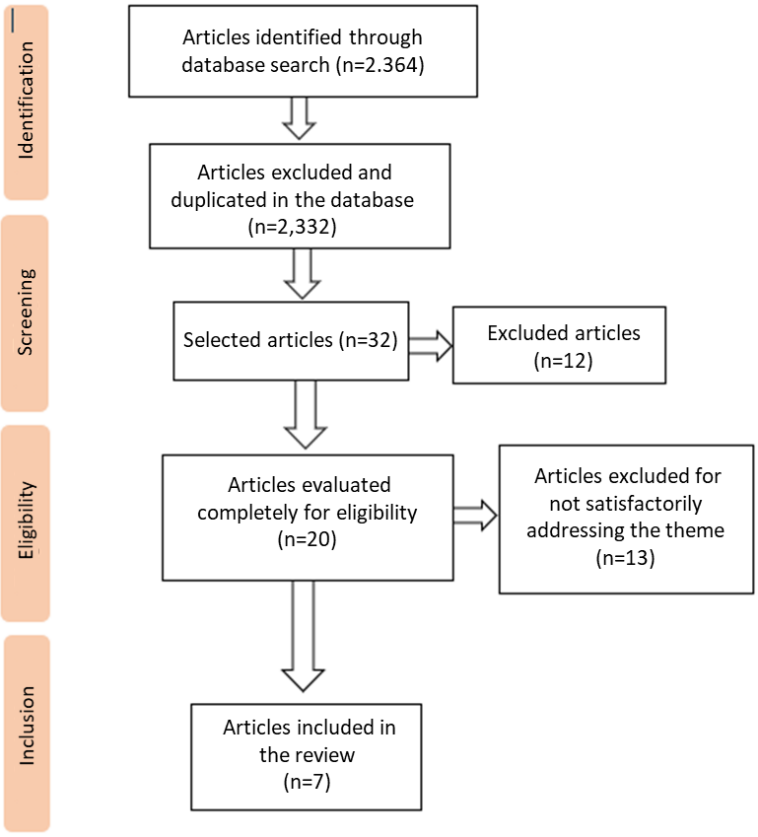
To elaborate the data collection, based on the inclusion and exclusion criteria, the form adapted from Ursi was used in order to remove pertinent data, minimize errors in transcription and ensure the information contained in the selected studies. This instrument contains article code/database, title/author/year, type of study/level of evidence, objective and synthesis of the main results (URSI; GALVÃO**,** 2005).

The content analysis was performed from the content proposed by Lawrence Bardin which is subdivided into three stages in which are: pre-analysis, exploration of the material and the approach of the results found. The objective of this method is to enable the critical appreciation of content analyses in quantitative and qualitative research (BARDIN, 2016). To establish the quality and reliability of the information of the studies, the degree of evidence was determined (GALVÃO, 2006).

Subsequently, for the categorization and lexical analysis of the selected data, the software *IRaMuTeQ (Interface de R pour lês Analyses Multidimensionnelles de Textes et de 101 Questionnaires)* was used, which was developed in France by Pierre Ratinaud (2009). The software is anchored in the statistical program R which generates data from texts (textual corpus). This program groups the words and offers several possibilities of analysis (KLAMT; SAINTS, 2021). The type of analysis used in the *IRaMuTeQ* tool was the Descending Hierarchical Classification (CHD), which is important to correlate the terms of the same corpus.

The process of presentation and selection of the studies found was carried out through the flowchart adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) as shown in **Figure 1:**

Figure 1: Detailed flowchart of studies adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2009)



Source: Research Authors, 2022

3 FINDINGS

In this review, a total of 2,364 studies were obtained in the databases and databases. After this phase, the inclusion criteria were applied, and 2,332 duplicate studies and those that did not fit the delimited criteria were eliminated, leaving only 32 studies to be read in full. After reading, 25 articles were excluded. The final sample was the inclusion of 7 studies in this review, as shown in Chart 1.

Table 1: Studies included in the review

Item Code/ Database	Title/ Authors/ Year	Type of study and Level of evidence	Goal	Summary of the main results
E1/ BDENF	Nursing Care in Oncological Emergency Care: an integrative review Ramos LGA, Savoy VM, Fortini RG. (2018)	Integrative review study Tier 6	To highlight the knowledge about nursing care in the care of people living with neoplasms and are in an oncological emergency situation.	Most nursing studies related to oncological emergencies were limited to describing the specific interventions for each situation.
E2/ LILACS	Oncological emergency: nurses' role in the extravasation of antineoplastic	Cross-sectional study Level 5	To investigate the role of nurses in the extravasation of antineoplastic chemotherapy.	Nurses show sufficient knowledge about risk factors, prevention and recognition of signs and symptoms.

	chemotherapy drugs Souza NR, Bushatsky M, Figueiredo EG, Melo JTS *et al.* (2017)			
E3/ SciELO	Prevention and management in the face of extravasation of antineoplastic agents: scoping review Melo JMA, Oliveira PP, Souza RS *et al.* (2020)	Scope review study Tier 6	Identify and synthesize the scientific evidence on prevention and management of extravasation of antineoplastic agents in adult patients performed by nurses	Most of the studies dealt with prevention and management of chemotherapy extravasation in adult patients
E4/Google Scholar	Extravasation of chemotherapy drugs: the role of the nurse in the oncological emergency Faria LP, Fagundes TR. (2020)	Integrative literature review study Tier 6	To review the scientific production focused on the role of nurses in the management and prevention of extravasation of chemotherapy drugs	Nurses have limited information about the risks involved in handling, administration and disposal of antineoplastic drugs, as well as the conducts after extravasation.
E5/Google Scholar	Nursing care in oncological emergencies: an integrative review Lopes GMJ, Simino GPR, Rocha PRS *et al.* (2022)	Integrative literature review study Tier 6	To identify the nursing care described in the literature for the management of oncological emergencies	Nursing care involves physiological and psychological aspects.
E6/Google Scholar	Nursing care in oncological emergencies: an integrative literature review from 2008 to 2016 Junior SRAM, Matos SSMS. (2018)	Integrative literature review study Tier 6	To identify the performance of nursing care in oncological emergencies, in the period from 2008 to 2016	The nurse is responsible for providing adequate care in the care of cancer patients in clinical, surgical and hematological diseases throughout the life cycle.
E7/Google Scholar	Nursing care for neutropenic cancer patients: scoping review Oliveira PP, Freitas ATS, Maia PA *et al.* (2019)	Integrative literature review study Tier 6	Identify nursing care related to risk factors for febrile neutropenia; prevention of infection and neutropenic sepsis; protocols for the use of colony-stimulating factors and the introduction of antibiotic therapy for neutropenic cancer patients	The main nursing care found were: standard precautions, evaluation of risk factors for febrile neutropenia; education about self-care, among others;

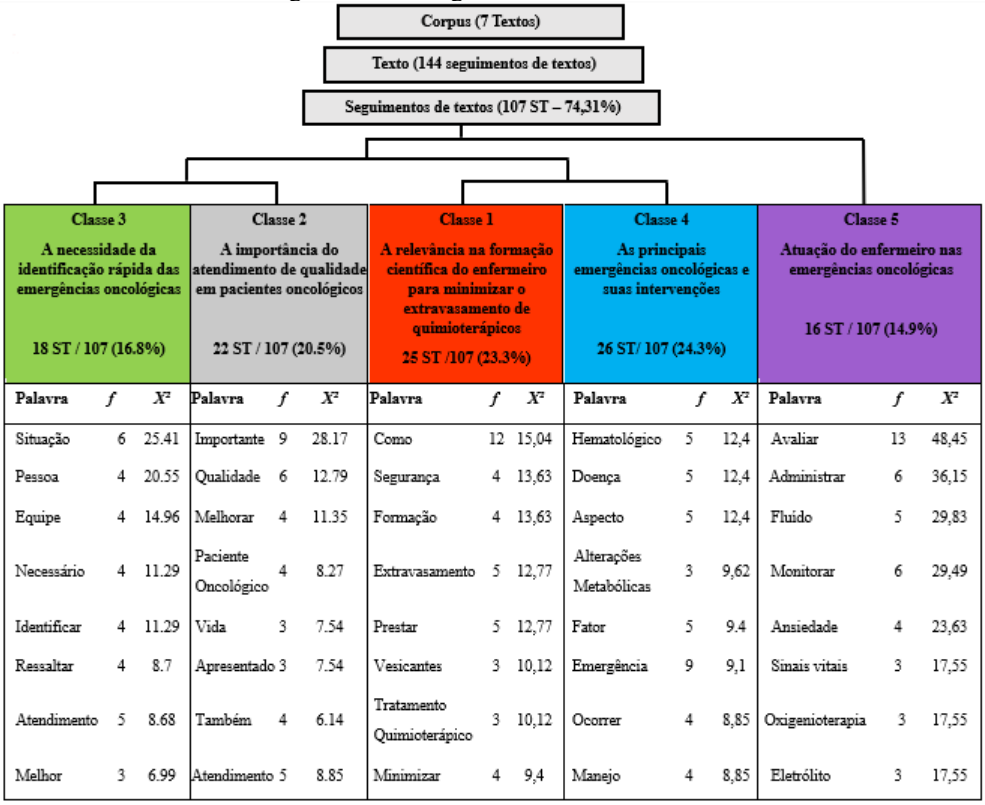
Source: Adapted from Ursi, 2022

In the search for scientific studies, a limited amount of materials focused on nursing care was found, and there was also a small number of articles published in the last 5 years. Among the studies

included in this review, 6 of them were integrative reviews, 1 of which was a scope review, with the level of evidence being 6 (E1, E3-E7). The risk of bias is high for the 6 studies and only 1 study has the risk of moderate bias (E2).

Moreover, through the CHD, the formation of 5 classes was emerged, which evidenced the correlation of the words and the representation on the theme studied, having the frequency and chi-square of the words described in the dendrogram **(figure 2).**

Figure 2: Dendrogram created from CHD.



Palavra	f	X²	Palavra	f	X²	Palavra	f	X²	Palavra	f	X²	Palavra	f	X²
Situação	6	25.41	Importante	9	28.17	Como	12	15,04	Hematológico	5	12,4	Avaliar	13	48,45
Pessoa	4	20.55	Qualidade	6	12.79	Segurança	4	13,63	Doença	5	12,4	Administrar	6	36,15
Equipe	4	14.96	Melhorar	4	11.35	Formação	4	13,63	Aspecto	5	12,4	Fluido	5	29,83
Necessário	4	11.29	Paciente Oncológico	4	8.27	Extravasamento	5	12,77	Alterações Metabólicas	3	9,62	Monitorar	6	29,49
Identificar	4	11.29	Vida	3	7.54	Prestar	5	12,77	Fator	5	9.4	Ansiedade	4	23,63
Ressaltar	4	8.7	Apresentado	3	7.54	Vesicantes	3	10,12	Emergência	9	9,1	Sinais vitais	3	17,55
Atendimento	5	8.68	Também	4	6.14	Tratamento Quimioterápico	3	10,12	Ocorrer	4	8,85	Oxigenioterapia	3	17,55
Melhor	3	6.99	Atendimento	5	8.85	Minimizar	4	9,4	Manejo	4	8,85	Eletrólito	3	17,55

Source: Dendrogram created in word from *IRaMuTeQ software*, 2022.

In summary, the formation of the classes is verified through the reading of the fragments of texts, studies included, more characteristic of each class (corpus in color) generated by *the IRaMuTeQ software* and the main findings according to table 2. In addition, it is important to emphasize that the classes correlate with each other, observing the relationship lines in the dendrogram.

Table 2: Presentation of class titles and their main findings

Class 1: The relevance in the scientific education of nurses to minimize the extravasation of chemotherapy drugs. It is of great relevance to seek new knowledge and strategies that assist in nursing care in oncological emergencies	E1, E2,
Lack of studies with a higher level of evidence that address the problem of extravasation of antineoplastic drugs	E3
The limited knowledge of oncology nurses through the conducts and management of extravasation of chemotherapy	E4

Class 2: The importance of quality care in cancer patients. Provide patient comfort and control of the evolution of the clinical picture	E1
Assists in the identification of intercurrences, reducing the harm to the patient and favoring safety	E2, E5
The nurse offers the first care and needs to be able to recognize oncological emergencies	E6
Class 3: The need for rapid identification of oncological emergencies Recognize oncological emergencies and the various warning signs for each situation	E1
Rapid intervention of oncological emergencies prevents death and permanent injury to the patient	E1
Class 4: The main oncological emergencies and their interventions The prevalent oncological emergencies found in the studies were: Superior vena cava syndrome, tumor lysis syndrome, spinal cord compression syndrome, hypercalcemia, hyponatremia, febrile neutropenia and extravasation of antineoplastic drugs (tissue changes)	E1, E2, E7
The interventions related to oncological emergencies, according to the specificity of each emergency, are: respiratory rate assessment, headboard elevation, attention to hydration, electrolyte replacement, venous access monitoring, lower limb elevation, among others	E1, E4, E5, E7
Class 5: Nurses' performance in oncological emergencies Act in the execution of the physical examination to identify infectious foci in patients with febrile neutropenia	E1,
Manage the anxiety of patients and families, monitor laboratory tests and the implementation of protocols	E5, E7

Source: Research Authors, 2022

4 DISCUSSION

The proposed review is pertinent to the investigation of the nurse's performance in relation to oncological emergencies and also to the identification of the main oncological emergencies discussed in the literature. It is observed that the professional training of the nurse is important to avoid complications to the patient, thus it was identified in a study found in the literature that nurses were attentive to the care provided at the time of extravasation or shedding of chemotherapy (COSTA, 2019).

However, it was found in a cross-sectional study that the knowledge of nursing professionals regarding the management of adverse events related to neutropenia and extravasation of chemotherapy drugs was insufficient, given that some answers of the interviewees were limited to the request of the doctor (GOZZO, 2015). The literature highlights febrile neutropenia as the most frequent problem in oncological emergency care, since it is the main cause of infections, being responsible for the mortality and morbidity of cancer patients (CASTRO, 2018).

Thus, it is of great relevance to seek new knowledge and strategies that help in the identification of manifestations related to oncological emergencies. In this way, establishing systematized and individualized strategies will provide the recovery of health or the improvement of the well-being of cancer patients. The nurse, as a strategy, can make use of the nursing process, as it is addressed in the literature (BOAVENTURA 2015).

Despite this, it was observed that few studies address the systematization of nursing care (NCS) in oncological emergencies, with only one study that addressed that the main difficulties encountered by nurses in performing the NCS is the lack of knowledge, lack of time and lack of encouragement from the organization, since organizations are increasingly reducing the number of nurses (CASTRO, 2018).

Another point that we had as a result is that the nurse is the professional who offers the first care to the patient, so he needs to be able to recognize the oncological emergencies, but the care to these patients must be carried out in a multiprofessional way, since the harmonious relationship between the functions developed by the different professionals will provide the best results (SILVA, 2021).

For example, the nurse who is responsible for the overall planning of care and for recognizing the signs and symptoms of the patient, intervenes quickly with competence to avoid complications as well as offering support and adequate information to patients and caregivers. In this way, this information should about the main signs and symptoms and also the numbers and places that can request assistance (PIRSCHEL, 2018).

It was observed that among the oncological emergencies most discussed in the scientific literature were the Medullary Compression Syndrome (MCS), Superior Vena Cava Syndrome (SVCS), Tumor Lysis Syndrome (TLS) and febrile neutropenia (NF) having a quantitative of studies that address the concepts, management and clinical signs. In addition, the main nursing interventions were highlighted (MANZI, 2012; Smith, 2019).

SCM is determined by compression of the spinal cord and its nerves by tumor cells. The syndrome is one of the main causes of paralysis in a patient with bone metastasis, being able to become irreversible if treatment is not carried out immediately. For this reason, it is necessary to carry out the rapid identification of signs and symptoms and consequently early diagnosis (KAMENO, 2018).

The main signs and symptoms of MCS are related to hypersensitivity in the region of the injury, pain and motor dysfunction that is evidenced through symptoms of bilateral asthenia in the legs and motor difficulties (THANTA, 2020). The synthesis of nursing interventions described according to scientific studies are: Continuous evaluation of pain, elaboration of care plan according to individual needs, skin care during radiotherapy, monitoring of breathing pattern, offering guidance and emotional support to the user and family members and detecting signs of infection (MANZI, 2012; CASTRO, 2018).

SVCS is a set of symptoms that occurs due to direct compression or obstruction of the superior vena cava, a vein that transfers blood from the head, neck, chest to the myocardium. Therefore, it is verified in the literature that the most common signs and symptoms of the syndrome are: edema of the face, neck and upper extremities, cough and dyspnea (SHAIKH, 2013).

According to the study of Lopes (2022) the obstruction of blood flow can provide increased intracranial pressure and impairment of respiratory flow. Thus, the nursing interventions will be elaborated from the complications, being necessary to monitor and maintain the breathing pattern: to evaluate signs of respiratory distress, to maintain supplemental oxygen and to keep the headboard elevated in the Fowler position, to perform fluid and electrolyte balance, to look for signs of facial edema, to evaluate the neurological system and to calm the patient and minimize anxiety.

With regard to research focused on oncological emergencies, TLS is part of the emergencies classified as metabolic, in which it is characterized as a severe electrolyte disturbance resulting from the destruction of neoplastic cells, which may arise spontaneously or after the beginning of treatment. The most common complication of TLS is acute kidney injury (GANDA, 2017). The clinical signs of TLS are nonspecific and edema, lethargy, nausea, vomiting, pain in the lumbar region of the colic type, arrhythmias can be identified (SILVA, 2019).

The important nursing interventions highlighted for TLS include monitoring biochemical parameters (serum levels of potassium, phosphate, calcium and creatinine, uric acid, arterial blood gas and urine pH, arterial blood gas analysis), performing hydration, evaluating renal function , and preventing the user from ingesting potassium-rich foods and being aware of other drugs administered that may cause renal impairment (MANZI, 2012; LOPES).

Neutropenia is also highlighted, which is defined as an absolute neutrophil count and may occur due to the effects of treatment. Febrile neutropenia is characterized as the presence of a fever of ≥38.0°C sustained during 30-minute intervals in a neutropenic user. Fever indicates a sign of infection, which if left untreated can be fatal, however even if there is no occurrence of fever the presence of sore throat, diarrhea, swelling and cough can be signs of infection and need to be treated immediately (CAMPOS, 2017).

Thus, the nurse is responsible for the orientations and care related to the prevention of infection, evaluation of laboratory tests (blood culture, urine culture and chest X-ray) and monitoring of the patient in the time elapsed between the application of the medications and the picture of lower value of the hematological count (FERREIRA, 2017). In addition, it was contacted in the study by Oliveira (2019) that the implementation of protocols for the introduction of antibiotic therapy in neuropenic patients are effective and safe, as they improve quality of life and enable a better clinical outcome.

5 CONCLUSION

The review, when analyzing the importance of recognizing the main oncological emergencies and their clinical manifestations, showed that despite the need for early identification of these manifestations, some nursing professionals are not qualified for this function. Thus, the need for training of nursing professionals is highlighted, in order to provide better care to these patients.

Thus, it is evident that the nurse's performance in oncological emergencies, supported by scientific knowledge, makes a significant difference in the early detection of oncological emergencies, prevention of complications and consequently in the improvement of the quality of life and comfort of cancer patients.

The limitations of this review refer to the scarcity of current studies that address the role of nurses in oncological emergencies and also the realization of new studies that bring reliable scientific evidence to have a better foundation of nursing practices.

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