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NURSES' VIEW ABOUT VENOUS ACCESS FOR CHEMOTHERAPY ADMINISTRATION

A VISÃO DOS ENFERMEIROS ACERCA DOS ACESSOS VENOSOS PARA ADMINISTRAÇÃO DA QUIMIOTERAPIA

LA VISIÓN DE LOS ENFERMEROS ACERCA DE LOS ACCESOS VENOSOS PARA ADMINISTRACIÓN DE LA QUIMIOTERAPIA

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ABSTRACT

Objective: to analyze nurses' view on the use of venous access for chemotherapy administration. ***Method***: descriptive study with a qualitative approach was undertaken at Hospital Universitário Clementino Fraga Filho, Rio de Janeiro/RJ, Brazil, involving ten nurses. To produce the data, a semistructured interview was used and, for the analysis, thematic analysis. Approval from the Research Ethics Committee was obtained under protocol 177/11. ***Results:*** three categories emerged: Evidencing the main problems related to venous access for chemotherapy administration; The nurse's view interfering in safe or unsafe actions in intravenous chemotherapy administration; Identifying care management flaws and the need to systemize the actions. ***Conclusion:*** greater attention should be paid to the adverse experiences related to the chemotherapy administration route. The nurses need to recycle their knowledge constantly, engage in research and work integrated with the health team. ***Descriptors:*** Oncology Nursing; Antineoplastic Agents; Patient Care Planning.

RESUMO

Objetivo: analisar a visão dos enfermeiros acerca da utilização dos acessos venosos para administração da quimioterapia. ***Método:*** estudo descritivo, com abordagem qualitativa, realizado no Hospital Universitário Clementino Fraga Filho, Rio de Janeiro/RJ, Brasil com dez enfermeiras. Para a produção de dados utilizou-se a entrevista semiestruturada e para análise a análise temática. Obteve aprovação do Comitê de Ética em Pesquisa, protocolo 177/11. ***Resultados:*** três categorias emergiram: Evidenciando as principais intercorrências relacionadas aos acessos venosos para administração da quimioterapia; A visão do enfermeiro interferindo em ações seguras ou inseguras na administração da quimioterapia via endovenosa; Identificando falhas na gerência do cuidado e necessidade de sistematizar as ações. ***Conclusão:*** maior atenção deve ser dispensada às experiências adversas relacionadas à via de administração da quimioterapia. O enfermeiro precisa estar em constante educação continuada, envolvido com pesquisa e integrado com a equipe de saúde. ***Descritores:*** Enfermagem Oncológica; Agentes Antineoplásicos; Planejamento de Assistência ao Paciente.

RESUMEN

Objetivo: analizar la visión de los enfermeros acerca de la utilización de los accesos venosos para administración de la quimioterapia. ***Método:*** estudio descriptivo, con aproximación cualitativa, desarrollado en el Hospital Universitario Clementino Fraga Filho, Rio de Janeiro/RJ, Brasil con diez enfermeras. Para producir los datos se utilizó la entrevista semiestructurada y para análisis el análisis temático. Recibió aprobación del Comité de Ética en Investigación, protocolo 177/11. ***Resultados:*** tres categorías emergieron: Evidenciando los principales problemas relacionados a los accesos venosos para administración de la quimioterapia; La visión del enfermero interfiriendo en acciones seguras o inseguras en la administración de la quimioterapia vía endovenosa; Identificando fallas en la gestión del cuidado y necesidad de sistematizar las acciones. ***Conclusión:*** mayor atención debe ser dada a las experiencias adversas relacionadas a la vía de administración de la quimioterapia. El enfermero necesita estar en constante educación continuada, involucrada con investigación e integrado con el equipo de salud. ***Descriptores:*** Enfermería Oncológica; Agentes Antineoplásicos; Planificación de Atención al Paciente.

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INTRODUCTION

Individuals' greater exposure to carcinogenic risk factors and population aging are factors that contributed to the epidemiological representativeness of cancer today, which is responsible for more than 12% of all causes of death around the world.[1]

There are different types of treatment for cancer, including chemotherapy. It involves the use of chemical agents that act systematically, interfering in the cell division, in order to eradicate the tumor. It has contributed to the patients' cure and enhanced survival,[2] but its action is systemic, provoking an indiscriminate attack of rapidly proliferating cancer or normal cells, producing collateral effects, chronic toxicities and adverse experiences. The collateral effect of a pharmaceutical product is not intentional, but related to the pharmacological properties of the drug, and happens with doses normally used on man. Adverse experiences, on the other hand, comprise any unfavorable medical event, which can happen during the chemotherapy for example, but without a direct causal relation with it. The harmful characteristics of the treatment, however, like the vesicant and/or irritant nature of the drugs, can exacerbate these experiences, often related to nursing care, which includes technical procedures to access the client's venous network and to safely maintain this administration route.[3]

Many clinical problems during chemotherapy administration, like in the case of drug extravasation, can be prevented or minimized. Therefore, systemized, individualized nursing care is needed, which is capable of constructing a care plan that favors the client's self-management. It is highlighted that the nursing team administers the chemotherapy and that the nurse is responsible for care management. This practice is regulated in Federal Nursing Council (COFEN) Resolution 210 from 1998.[4]

In this study, the nurses' responsibility in the feasibility of the chemotherapy administration route is highlighted. It is known that the parenteral route is the main chemotherapy administration route, through venous access, whether using the peripheral network or, less frequently, using deep veins with different short-term or indwelling devices.[5]

Nurses' compliance with their competences, especially regarding care organization and planning, nursing team training and client education, can facilitate the identification of problems during intravenous chemotherapy administration, as well as their prevention and management, reducing client damage and contributing to patient safety. Hence, the study was guided by the following question:

How do nurses see the use of venous access for chemotherapy administration?

This study aims to contribute to scientific production in nursing with a view to enhancing the quality of care delivery and provide directions for further research. Addressing the theme from the nurses' perspective is important, as they perform different actions related to nursing care management in the hospital and outpatient context. Among these actions, chemotherapy administration or supervision of this care are highlighted, the latter if performed by other nursing team members. This justifies the need for discussion on the theme, in combination with the epidemiological profile of cancer and the therapeutic importance of chemotherapy.[5]

OBJECTIVE

- To analyze the nurses' view on the use of venous access for chemotherapy administration
- To discuss the actions implemented to reduce damage and maintain client safety based on this view.

METHOD

Descriptive study with a qualitative approach, undertaken at Hospital Universitário Clementino Fraga Filho (HUCFF), Universidade Federal do Rio de Janeiro (UFRJ). The hospital includes a High Complexity Care Center in Oncology (CACON), which is part of the national cancer care network of the Ministry of Health.

Two sectors served as the scenario for data collection, which were: the chemotherapy outpatient clinic and the onco-hematology hospitalization service. In the first, care is delivered to cancer patients in general. In the second, the specialty hematologic cancer is attended to.

Nurses participated in the study who attended to the following inclusion criteria: having an employment bond with the institution and at least six months of experience in one of the sectors.

All nurses at these sectors were interviewed, totaling ten, four of whom worked at the outpatient clinic and six at the onco-hematologic hospitalization unit, between October 2012 and February 2013. During this period, five nurses worked at the outpatient clinic, including the head, but one

of them was on medical leave. Seven nurses worked at the onco-hematological service, including the head, who refused to participate in the study. Hence, these two professionals were excluded.

The data collection technique used was the semistructured interview, following the script: What is your view on the use of venous access for chemotherapy administration? Based on that view, what actions can be implemented to reduce damage related to venous access and, consequently, to improve the patient's safety in this kind of therapy?

Before the interviews, the study participants' profile was characterized based on the following variables: gender, age, time since graduation, length of experience in oncology, length of experience in the sector, and type of job contract with the institution.

The team responsible for the data collection was duly trained and consisted of one nurse faculty and one scientific initiation student.

The interviews were audio-recorded with the study participants' consent and fully transcribed. All interviews were held individually, at a private room, in the work environment.

The collected material was analyzed in compliance with the phases of thematic analysis, that is, pre-analysis, exploration of the material and interpretation of the results.[6] The latter was based on the scientific articles surveyed in the literature review, representing the conceptual foundations in the nursing knowledge area, with a view to understanding the true sense of the categories constructed.

The study received approval from the Research Ethics Committee at HUCFF, under opinion 177/11.

RESULTS

The ten nurses were female. Concerning the age range: three were between 20 and 30 years old; one between 31 and 40; one between 41 and 50 and five between 51 and 60 years old. The mean time since graduation in nursing was 19 years, the mean length of experience in oncology nine years, and the mean length of experience at the respective sectors six years. As regards the job contract with the institution, 70% of the nurses worked on a permanent and 30% on a temporary contract. This profile demonstrates the group's great practical experience.

The results indicated three conceptual categories: Evidencing the main problems related to venous access for chemotherapy administration; The nurse's view interfering in safe or unsafe actions in intravenous chemotherapy administration; Identifying care management flaws and the need to systemize the actions.

Evidencing the main problems related to venous access for chemotherapy administration.

The nurses' view about the use of venous access for chemotherapy administration was concentrated on potential problems. This concern is due to the characteristics of the chemotherapeutic agents or unwanted consequences, mainly of the peripheral venous access (PVA) technique, such as: ardor, pain, hyperemia and infiltration/extravasation.

> *The most concerning are the problems related to the puncture. To give an example, he started to feel ardor, irritation at the venous access, hyperemia, or pain, we had to maintain direct observation so as to immediately interrupt the chemotherapy administration in cases of extravasation and take the other measures.* (N1 – outpatient clinic).

> *Some patients are here for the third time, so they've already taken I don't know how many chemotherapy sessions. And the venous access is already fragile, the veins are already tired, and can no longer handle that other access. And over here, there are few patients with deep catheters. We are still working based on the peripheral access, on thin veins. So that is why our main problems are also related to peripheral venous access.* (N1 - outpatient clinic).

> *The incidence rate of extravasation is high. It is not always due to the drug, you see? It can be just the saline solution, but the rate of patients who lose the access is high. Also because of the venous weakness, not all patients have a catheter.* (N5 - outpatient clinic)

The representativeness of these problems related to venous access varied between the sectors, especially due to the specificity of the clients' profile under hematology cancer treatment and long chemotherapy cycles. Most of these clients use a central venous catheter (CVC), which implies the preservation of their peripheral veins. It demands specialized nursing care though, with a view to its appropriate handling, preventing infections and obstructions.

> *When we are going to apply heavy drugs, the doctor knows the protocol and already inserts the deep catheter in the patient. Therefore, extravasation is not common here. The type of deep catheter can vary. The patients who need a long chemotherapy*

cycle have an indwelling catheter. (N10 – onco-hematology).

At the outpatient clinic, as there are few clients with CVC, most chemotherapies are applied using peripheral veins, which increases the risk of venous access-related problems.

The nurse's view interfering in safe or unsafe actions in intravenous chemotherapy administration

In view of the problems, mainly related to PVA, the nurses emphasize the activities to prevent chemotherapy extravasation. The concern with the previous PVA status is constant. And the clients themselves are advised to maintain this attention, with a view to a safe practice.

> *To avoid any problem, we orient the patient about it. Any problem, if he feels burning, any change on the site, he immediately needs to warn us.* (N6 – onco-hematology)

Besides problem prevention, the nurses indicated the need for fast action in cases of extravasation for example, as well as the importance of case management.

> *We had a situation here and what orientation was provided? It was to do an assessment, register it in the patient history as completely as possible, advise on home care and do an assessment once or twice per week until the problem has been solved. Today, an infiltration happened, involving only saline solution. And then, what do we do? We advise correctly to apply ice to the infiltration site and monitor, and put ourselves at the patient's disposal. Always that, and schedule the patient's return, to continue the assessment*. (N5 - outpatient clinic).

The nurses' experience at the onco-hematology sector is marked by solid communication with the medical team on the indication of the CVC. Hence, communication is considered fundamental for the development of safe actions, based on shared views and teamwork.

> *We assess this patient, if he really has no access, we don't do the procedure and talk to the doctor for him to do a deep access*. (N7 – onco-hematology).

The nurses are responsible for performing the PVA technique or act in its supervision and, therefore, combine support for the appropriate assessment of the client's venous network conditions. The tightening of the relation with the medical team for the indication of the CVC starts at the outpatient clinic and patient history records should be one of the main tools to provide input.

> *We are drawing a direct line with the medical team to indicate CVC to the patient who is in no peripheral access condition. That is joint work with the nursing team. If the patient is in no conditions for a peripheral access, don't try to puncture a capillary vein! Because the risk is larger. And, when an extravasation happens, we are responsible. Because we end up assuming something which not only the nursing team should assume, but the group. People have to know that, at certain times, the patient will be in no peripheral access conditions*. (N5 - outpatient clinic).

The refusal to perform the procedure in case of a lack of peripheral veins in safe conditions for chemotherapy administration has been a currently observed behavior at the clinic. This change derives from the head's orientations, who started working at the sector recently. Practices against this orientation can still be detected though, which are considered unsafe.

> *Over here, we try, try, try, until the end, and people have a lot of practice, so they normally manage*. (N3 - outpatient clinic).

Besides the multiple PVA attempts, which contribute to the client's emotional exhaustion in this treatment phase, at the outpatient clinic, one problem is related to the choice of the PVA device. This is a moment of transition, with new practical orientations linked to the change of the service head.

> *That is an ongoing discussion here at the clinic, because we have a new head now, who came from onco-hematology, and there at 8F they use the jelco a lot. Before, we always used the scalp in our practice, and now we are using the jelco sometimes. But, in our view, I don't know if the jelco is the best option*. (N2 - outpatient clinic).

The presence of the CVC for chemotherapy administration preserves the client's safety and prevents the occurrence of further vascular and tissue damage. It implies changes though, more specifically at the outpatient sector.

> *For us, the peripherally inserted central catheter would be a great solution. For patients at the start of treatment, you would be able to preserve the peripheral veins. And it is in our interest. And we are working for that too. Because, with that, we also reduce the incidence of extravasation, phlebitis, the cost, because phlebitis treatment is expensive, without considering the discomfort for the patient*. (N5 - outpatient clinic).

Identifying care management flaws and the need to systemize the actions

The testimonies revealed errors in the systemization process of nursing actions at the sectors, which can negatively affect the

quality of client care, particularly with regards to measures that often need to be standardized with a view to appropriate prevention or damage minimization. In case of human error, for example, the factor lack of attention can put the client's safety at risk.

> *Many complications that happen to the patient are due to a lack of attention, or sometimes to a lack of valuation of a complication.* (N5 - outpatient clinic).

The errors in care management, particularly in the orientation of PVA-related actions for chemotherapy administration and appropriate resource use may be related to a lack of knowledge.

> *Because the people had a mistaken orientation, and thought the drug could damage the jelco material, to the extent of thinking that a steel needle is more indicates. Besides the problem of few deep catheters here at the clinic, there is a great theoretical shortage, so that the people prefer puncturing with a scalp for example. Because most people have been here a long time. And things have changed, and some people still maintain the old concepts* (N5 - outpatient clinic).

> *Here, our practice has always been with a scalp but, since January, sometimes, we are using the jelco. Our other head did not stimulate that, but this one is. She is starting to meet, put the ideas in practice* (N2 - outpatient clinic).

The testimonies reveal that the current period is marked by changes, whether through training or the (re)construction of standard operating protocols (SOP). The nurses need to access and follow these though and, therefore, they need to feel part of the change and systemization process of the actions.

> *People are in doubt about the dilution, about what drugs are actually vesicant, and about many other things. But it is no use for you to write and not work on that with the group. You have to write, and people need to accept that, understand that that is important. In the case of the operating procedure, most of the work is done by the people working at the end of the line. It can't be something coming from the top, because it doesn't work. So first you have to sensitize the people* (N5 - outpatient clinic).

Another important investment relates to the implementation of the nursing consultation, when the nurse can plan the monitoring of the chemotherapeutic treatment, assessing the client's clinical and psychological condition, as well as that of the peripheral venous network, in line with the chemotherapeutic protocol that is to be established.

> *So, we don't have a nursing consultation, we are trying to implement that. We have a project now, precisely to facilitate the patient monitoring, and get a better orientation.* (N5 - outpatient clinic).

The movement is strongly based on the new head, especially at the outpatient sector. The need to continue the processes should be highlighted though, as functional occupations are less stable at public services.

> *When we get here, yes, we are trained. At first it was even a bit stricter, people were a bit more concerned with the routine. Then, the heads changes and it became like, less stable for some time. We perceive that the training is not, like, strict* (N6 – onco-hematology).

> *We have a folder, which was done last year. Then the head changed, we were thinking about reassessing that. So we are still reassessing these SOPs* (N4 – onco-hematology).

In general, the change processes show achievable short, medium and long-term targets. The importance of the respective heads planning them well is highlighted though.

Among the main changes evidenced in the testimonies, the following are emphasized: the dissemination of the PVA standard operating protocol; reassessment and reorganization of the physical space at the outpatient clinic to enhance the client's comfort and facilitate the nursing team's activities in cases of more severe clinical problems; greater use of PVA jelco; stricter client assessment and monitoring in cases of drug extravasation; and team orientation.

> *Now, for example, we are starting a stricter monitoring in cases of extravasation, asking the patient to return for periodical assessments, how the case is evolving.* (N1 - outpatient clinic).

In addition, there is an ongoing movement, especially at the clinic, to create training programs, courses and mini-courses to train the nurses, besides the project for the implementation of the nursing consultation, which considers a fundamental need.

> *During the nursing week, we are offering a mini-course on patient safety and intravenous therapy. We are setting up an intravenous therapy and peripherally inserted central catheter course, which is the PICC. But any change is difficult, it is a process of convincing* (N5 - outpatient clinic).

DISCUSSION

In view of the problems related to the PVA, the discussion is based on nursing care management to maintain the client's comfort

and safety, as the adverse experiences represent a risk.[7] The nurse needs to guarantee that the chemotherapy administration route is safe, which requires care assessment before, during and after its administration, as well as effective participation in the indication of cases for CVC implementation.

CVC use involves economic, political, organizational, human resource issues, among others. And the nursing team needs to engage in these issues, as these professionals are directly responsible for the chemotherapy administration and, consequently, for the resulting problems. Based on the nurses' responses, these problems go beyond those related to the medication, joining elements of nursing practice, which in some cases may be related to lack of expertise.

In case of PVA problems, the nurses are expected to act according to protocols, in the attempt to minimize their effects, report the case, register it and maintain the monitoring of the clients.[7] It is highlighted that, especially at the outpatient sector, the head's new orientations with a view to client safety are very recent and demand a change of habitus and, consequently, persistence, continuity and time.

Among the nursing care quality strategies in chemotherapy administration, the implementation of the nursing consultation at the outpatient clinic is highlighted, which in the operational context of the nursing care systematization requires the application of the steps of the nursing process. Thus, the nurses can identify the clients' predisposition to adverse experiences, related to the characteristics of their peripheral venous network, and direct appropriate conducts according to each case. This clinical practice, structured by a theoretical reference framework and appropriate taxonomy for diagnostic purposes, for example, grants the nurses greater control of the cases managed, as well as the clear identification of needs and the consequent focus on the care for which they are legally and ethically responsible.[8]

In care management, the nurses emphasize the need to constantly orient the clients, who are considered co-responsible for the safety and maintenance of the PVA, as they are prepared to recognize, evaluate and inform the nursing team about any different and bothersome feeling at the access site. Hence, this strategy calls upon the client to actively participate in the care process.[9] This participation is not limited to the chemotherapy administration, but involves the entire chemotherapy treatment, as it includes other care options to be provided at home, like observation, application of cold packs and exercises of the adjacent muscles for example.

To stimulate the clients' active and conscious participation in their own care, the nurses need to pay attention and identify the knowledge deficits, break taboos related to cancer and its treatment and deliver individualized and contextualized care. The positive result is revealed in the client's ability to establish effective control of the therapeutic regimen, as well as its safety.[8,10]

The most severe consequence of the adverse experiences in the use of the venous access for chemotherapy administration relates to the extravasation of drugs, which are considered vesicant and/or irritant. In the case management, the nurses is expected to careful monitor the puncture site, register the event in the history with maximum information, including measures and photographic records if possible.[11] The consequences of this experience can demand or extend the client's hospitalization and demand multiprofessional intervention to prevent physical disability, permanent damage or any other psycho-emotional disorder. As regards the physical aspect, the most common reports in the literature are: hard lesion on the site, local fibrosis, pain and hyperemia.[12]

Therefore, the best action is prevention, whose main ally is systemized practice. The importance of records in the patient history is highlighted, so as to also denounce the problems the nursing team experiences in the placement and maintenance of the PVA, driving institutional investments in safer venous access. Although this variable was not investigated in this study, the literature indicates the deficit in nursing records in patient histories, hampering the case management.[12]

Besides preventive actions, the nurses highlighted the importance of appropriate use of the PVA device, as well as the need for professional and scientific development, including the competences and skills to obtain the access with the help of a Peripherally Inserted Central Catheter (PICC).

The inappropriate use of the PVA device can increase the risks of venous access problems, as metallic needles traumatize the venous network. Thus, the choice of the appropriate material for the puncture is essential, preferably choosing flexible catheters.[11]

The PICC is a long and flexible central catheter, placed through a peripheral vein that, through an introductory needle, progresses until the distal third of the (upper or lower) vena cava, thus gaining properties of a central venous access. Being peripherally inserted, its placement and removal are easy and, in addition, its cost is lower when compared to other central venous catheters. The PICCs are a safe and effective alternative, even in clients who are particularly prone to infections and hemorrhagic complications, like transplanted patients[13]. It is highlighted that the PCC permits the maintenance of the venous access over a longer period and is indicated, among other clients, for patients who need various venous access attempts and/or are receiving chemotherapeutic treatment[14].

Different factors can contribute to the risk of adverse experiences related to PVA, whether particular to the client, to the potential toxicity of the drug and to the knowledge level of the responsible nursing team. It is highlighted that, in some situations, the team's lack of valuation of the complaint or the clinical evidence can result in damage to the client. Therefore, various technical recommendations to obtain the PVA have been listed in the literature, and the value of this study relates to the picture of a reality that falls short of what is desired, especially at a High-Complexity Cancer Care Center. There is a clear need for constant team training, as the team needs to know the effects of the drugs, develop new techniques, follow technological advances, which demands institutional investments, as well as the appropriate use of the available resources.

It is highlighted that the investigated realities are changing. On the opposite, this process needs to be well structured, accompanied by targets and deadlines, which can be compromised as a result of the instabilities that are frequently observed in public service staff, especially among the service heads. In general, the sector heads play an important role at the health services, responsible for taking administrative, care and teaching/research measures, aiming for high quality care.[15]

There is a problem related to the nurses' deficient knowledge and the need for effective continuing education, which showed to be part of the head's strategic plan, especially at the outpatient clinic. Continuing education can be one way to approximate the nurses to the (re)constructions of the care protocols; to permit the execution of new practices, based on the training for the implementation of PICC for example; to implement the nursing consultation and better systemize the actions, making them effective, agile and well documented; and consequently deliver safe care, free from unwanted variations.

Among the objectives at the institutions in the Brazilian cancer care network, the greater supply of services is highlighted, in view of the alarming need of the population who experiences cancer as a public health problem. The supply of high-quality services is directly related with the availability of material resources and appropriate personnel management, aiming for quantity and technical quality.

These study results indicate important challenges related to the quality of the processes and human resources which, even when discussed in the context of the nurses' view on the use of venous accesses for chemotherapy administration, reflect gaps that can result in unsafe practices and greater risk of client damage, often weakened by the pathological condition.

CONCLUSION

The chemotherapy can cause collateral effects and chronic toxicities that affect the quality of life, comfort and survival time of clients with cancer. In addition, considering the parenteral route through venous access as the main administration route, its harmful characteristics can cause damage in cases of adverse experiences related to nursing care, especially in the placement and maintenance of PVA.

The countless attempts to obtain a peripheral access for chemotherapy administration, based on repeated punctures, represent great discomfort for the client, as well as for the nursing team that performs it, contributing to make the treatment even more difficult. Therefore, the nurses and their team are responsible for reducing that discomfort and act on behalf of the treatment, preventing risks and minimizing damage.

The study analyzed the nurses' view on the use of venous access for chemotherapy administration and discussed the actions implemented to reduce damage and maintain client safety, based on that view, thus attending to the proposed objectives.

Thus, the nurses highlighted the clinical problems related to the PVA, to need to prevent extravasations and enhance the articulation with the medical team for the indication of CVC, on behalf of client safety.

Based on the study, the existence of a conceptual shortage could be observed, especially regarding the peripheral venous access devices, which requires planned and continuing changes, investment in continuing education and in research.

Therefore, continuing education is needed to strengthen the theoretical-practical methods and concepts and the better use of the nursing care systemization. Systemized practice helps with the prevention and appropriate management of this and other possible clinical problems in chemotherapy administration and is essential to minimize damage and further the quality of nursing care.

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