



HEMOTHERAPY: A CHALLENGE IN THE DAILY TEAM OF THE NURSING TEAM

HEMOTERAPIA: UM DESAFIO NO COTIDIANO DA EQUIPE DE ENFERMAGEM

HEMOTERAPIA: UN DESAFÍO EN EL COTIDIANO DEL EQUIPO DE ENFERMERÍA

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ABSTRACT

Objective: to identify the knowledge of a nursing team about the transfusion process. **Method:** this is a descriptive, exploratory, and transversal study, with a qualitative approach, performed at the Luiz Gioseffi Jannuzzi School Hospital, with 57 professionals from the nursing team. The data were collected from a semi-structured questionnaire and, subsequently, analyzed in a descriptive way. **Results:** a little knowledge by the nursing team is shown the care before and in the transfusion reaction. **Conclusion:** the need for these professionals to have permanent education on the subject, in addition to in-service training, for an adequate conduct through any intercurrent that may happen, aiming at a better care and without greater risks for the patient. **Descriptors:** Blood Therapy; Continuing Education; In-Service Training; Nursing Staff.

RESUMO

Objetivo: identificar o conhecimento de uma equipe de enfermagem sobre o processo transfusional. **Método:** estudo descritivo, exploratório e transversal, de abordagem qualiquantitativa, realizado no Hospital Escola Luiz Gioseffi Jannuzzi, com 57 profissionais da equipe de enfermagem. Os dados foram coletados a partir de um questionário semiestruturado e, posteriormente, analisados de forma descritiva. **Resultados:** mostram um conhecimento pouco significativo por parte da equipe de enfermagem sobre os cuidados pré e diante de uma reação transfusional. **Conclusão:** destaca-se a necessidade desses profissionais terem educação permanente a respeito do tema, além de treinamento em serviço, para uma conduta mais adequada mediante qualquer intercorrência que possa acontecer, visando a um melhor atendimento e sem riscos maiores para o paciente. **Descritores:** Hemoterapia; Educação Continuada; Treinamento Em Serviço; Equipe de Enfermagem.

RESUMEN

Objetivo: identificar el conocimiento de un equipo de enfermería sobre el proceso transfusional. **Método:** estudio descriptivo, exploratorio y transversal, de enfoque cualitativo y cuantitativo, realizado en el Hospital Escuela Luiz Gioseffi Jannuzzi, con 57 profesionales del equipo de enfermería. Los datos fueron recogidos a partir de un cuestionario semi-estructurado y, posteriormente, analizados de forma descriptiva. **Resultados:** muestran un conocimiento poco significativo por parte del equipo de enfermería sobre los cuidados pre y frente una reacción transfusional. **Conclusión:** se destaca la necesidad de esos profesionales tener educación permanente al respecto del tema, además de entrenamiento en servicio, para una conducta más adecuada mediante cualquier intercurrentia que pueda acontecer, visando a un mejor atendimento y sin riesgos mayores para el paciente. **Descriptores:** Terapia de la Sangre; Educación Continua; Entrenamiento en Servicio; Personal de Enfermería.

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INTRODUCTION

Blood transfusion is a valuable therapeutic resource that relieves suffering and saves lives every day. Like any medical therapy, it is subject to adverse effects, which can sometimes be severe and put the patient's life at risk.¹

Hemotherapy is a treatment performed through blood transfusion, its components, and derivatives. It is considered of high complexity and epidemiological risk, since the blood, as living tissue, can transmit various diseases.²

Despite significant technological advances in health care, no substitute for human blood has yet been found. For this reason, hemotherapy is of great importance in procedures such as chemotherapy, surgery, and transplantation, and may change the prognosis of patients.³

In this sense, hemocenters, hemotherapy services, and blood banks are institutions of great social importance, offering support for the accomplishment of many treatments, such as transplants, chemotherapeutic treatments and several types of surgeries, attending to patients that without no blood replacement they would not survive.⁴

In 1942, the first hemotherapy service was created in Brazil, at the Fernandes Figueiras Hospital, in the city of Rio de Janeiro. The starting point for the inauguration of several hemotherapy services in the country was the violence of the war.¹ Recently, in 2014, the service of good practices in the blood cycle was regulated by the Resolution of the Collegiate Board of Directors - RDC N° 34, of June 11, 2014, which establishes the sanitary regulation for services that carry out activities related to the production cycle of human blood, as well as transfusion components and procedures.⁵

Therefore, it is necessary to have knowledge about the necessary safety practices, possible adverse effects that can occur, the signs and symptoms that the patient can have, as well as training of the techniques used in this type of therapy, which is not unrelated to risks. Therefore, this procedure must be carried out and monitored by a team of professionals who are trained, ensuring the quality of their performance.⁶

Blood donation and transfusion require the involvement and commitment of a health team and working together to minimize patient risk. In a transfusion, when the patient receives the blood or derivative, the

likelihood of complications is high. Because of this, nursing interventions are very timely.⁷

In recent years, there has been considerable concern about ensuring transfusion safety, which has been triggered mainly by population aging, violence, and accident rates, and technical and scientific advances in health, leading to an increase in demand for transfusions.⁸ It is recommended that blood transfusions be performed by a medical or nursing professional who is qualified. For the procedure to occur, the presence of at least one physician at the time of its occurrence is required to intervene promptly in the event of a reaction or complications.⁹

Transfusion reactions are avoided or prevented by compliance with technical standards, correct assessment of the recipient's clinical conditions, and correct indication of transfusion and special procedures.

Transfusion reactions are classified as immediate or late. Immediate transfusion reaction is one that occurs during or up to 24 hours after the end of the transfusion. The late transfusion reaction is one that occurs 24 hours after the transfusion and may take days or even months to manifest.⁶

The Federal Nursing Council (COFEN) created Resolution COFEN No. 200/1997 to understand the importance and complexity of hemotherapy activities which regulates the performance of nursing professionals in hemotherapy and bone marrow transplantation. The competencies and duties of nurses in hemotherapy are regulated by Federal Nursing Council Resolution 306/2006 (COFEN), which establishes their responsibility for the planning, execution, coordination, supervision and evaluation of procedures of this therapy in health units.¹⁰

The nurse is the professional who performs and/or supervises the administration and monitoring of the infusion of blood components and blood products, identifying possible adverse reactions, recording information and appropriate statistical data to the donor and recipient. It is also important that nurses participate in donor recruitment programs, as well as development and participation in hemotherapy and hematology research.¹¹

Initially, nursing care in hemotherapy was irrelevant, and the services provided were performed by laboratory technicians. In the last decades, since the 1990s, there have been profound changes about hemotherapy. The presence of the professional with specific

knowledge in the performance area has become fundamental. Nursing was not oblivious to this change and began to develop activities in several areas, such as clinical screening of the donor, blood collection, transfusional procedure of blood components and application of blood products.¹²

All nursing professionals who assist the client during a blood transfusion should be able to recognize any signs and symptoms that indicate the occurrence of a transfusion reaction.¹³

Nursing professionals, in their three categories (nursing auxiliaries and technicians, as well as nurses) have responsibility for administering blood transfusions and do it frequently.¹⁴

Although the nurse is increasingly required in the various activities associated with transfusion therapy, there is no recognition by the category, because these professionals are unaware of the complexity of the service. It is possible that this lack of knowledge occurs in large part because the content of the undergraduate course is insufficient, and to a small number of postgraduate courses directed to this area.⁷

Given this scenario, the objective of this study is the technical and scientific knowledge of the nursing team in the practice of hemotherapy, aiming at the quality of care provided to the patient who needs hemotransfusion.

In fact, in Valença, a municipality located in the southern region of the State of Rio de Janeiro, Nursing accompanies the patient always in the transfusion. However, there is a gap in nurses' training when it comes to patient care in hemotherapy. This deficiency becomes more complex when, in their daily lives, the nurse, and his team are faced with outsourced transfusion therapy services, which only deliver the blood product to the unit, leaving the blood transfusion under the responsibility of the nursing team. In the training of nurses, questions about hemotherapy are not always addressed, which contributes to the lack of preparation of this professional in dealing with the various situations that may occur.¹⁵

In this sense, the study is justified because it is an area that requires specific knowledge and skills of nurses and their team in the process of transfusion, aiming at the prevention of risks to the patient and the nursing team.

Given the problems presented, the following question was elaborated: what is the knowledge of the nursing team of the city of

Valença about transfusion of blood components? To answer this question, the objective is to:

- Identify the knowledge of a nursing team about the transfusion process.

METHOD

This is a descriptive, exploratory and cross-sectional study with a qualitative approach.¹⁶⁻⁷ The scenario in which the study was carried out took place in the medium-sized Luiz Gioseffi Jannuzzi School Hospital with 142 beds located in the interior of the State of Rio de Janeiro. A teaching hospital accredited by the Ministry of Education and the Ministry of Health, where the following services are performed: outpatient clinic, emergency room, medical clinic, surgical clinic, obstetrics, gynecology, pediatrics, intensive care unit, surgical center, transfusional agency, clinical analysis laboratory, imaging service, pharmacy and hospital infection service. It is important to note that, on average, 30 to 40 blood transfusions occur in the hospital.

The participants of the research were 68 nursing professionals, working in the medical clinic, surgical, emergency room, intensive care unit and surgical center, in the day and night work shifts. This sample corresponds to 100% of the nursing professionals who work in these sectors. The inclusion criteria of both the nurses and the technicians located in the study were: to be working in these units under study and had at least one year of work in the institution as a professional of the nursing team. As a criterion of exclusion, it was established the non-participation of professionals who were on leave, vacation and medical leave during the period of data collection and those who were not willing to participate. Thus, 11 nursing professionals were excluded according to the above criteria, totaling the sample of 57 nursing professionals.

The instrument used for data generation was a questionnaire, with open and closed questions, applied to nurses and technicians, with questions about the transfusion practice and its approach in the nursing professional's performance. The instrument was composed of two parts. Part I proposed to characterize the sample, collecting data such as gender, age group, professional category, time of service, time spent in the hospital and professional qualification. Part II of the instrument consisted of data on the transfusion practice and its approach in the nursing profession.

The Free and Informed Consent Form was distributed along with a questionnaire to all nurses and technicians working in the medical, surgical, emergency room, intensive care unit and surgical center, in the day and night work shifts in the months of September and October of 2014, where they received explanations about the objectives, relevance, and stages of development of the study. The subjects of the research were oriented to respond to the presence of the researcher, which provided a data collection without external interferences, giving fidelity to the answers collected.

The data of the open questions were grouped according to the frequency that appeared in the answers of the subjects of the study population and analyzed through simple statistics. The closed questions were stored in a Microsoft Office Excel 2007 database. The data were presented using simple descriptive statistics and were later discussed based on the relevant literature.

The study project was submitted and approved by the Research Ethics Committee

of the Medicine School of Valença, which was approved under number 766.958, in compliance with Resolution 466/12 of the National Health Council.

RESULTS

The research participants were 57 professionals of the nursing team. Of them, there was a predominance of females, 42 (73.6%); the age range varied from 20 to 30 years old, 23 (40.3%), from 31 to 40 years old, 25 (43.8%), and 10 from 41 to 50 years (15.7%).

As for the duration of care, there was also a variation, 51 had 1 to 10 years, (89.4%), and 6 had 11 to 20 years (10.5%), considering that the distribution of the participants in the research was medical unit, surgical, emergency room, Adult Intensive Care Unit (ICU) and surgical center.

Table 1. Knowledge of the nursing team about pre-transfusion care. Valença (RJ), Brazil, 2014.

Cited Care	Number of citations (%)
"Vital signs"	22 (38.5%)
"Vital Signs and registering them, specific equipment, check data, blood typing."	1 (1.75%)
"Vital Signs, Confirming Transfusion"	9 (15.7%)
"Vital Signs, confirming transfusion, using calibrated access."	3 (5.2%)
"Vital Signs, Confirming Transfusion, Checking Bag Tag"	10 (17.5%)
"Vital signs, using of PPE, checking bag information."	1 (1.75%)
"Vital signs, guidance, checking bag, PPE, cross test."	1 (1.75%)
"Guiding the patient, checking the bag."	1 (1.75%)
"Confirming transfusion"	1 (1.75%)
"Vital signs, using PPE, confirming transfusion."	2 (3.5%)
"Vital signs, choosing suitable equipment."	3 (5.2%)
"Vital signs, checking bag, cross-test."	3 (5.2%)

DISCUSSION

When asked about the care that nursing professionals must have before the infusion of any blood component, it was verified (Table 1) that they did not demonstrate sufficient knowledge to perform such procedure.

The primary care that must be performed before the transfusion procedure corresponds to the confirmation of the transfusion, through a medical prescription. The professional should check the type of hemotherapy and its quantity, confirming that the patient will receive the correct hemotherapy to be infused.¹⁸

Before the administration of the hemotherapy, the professional must confirm that the blood of the recipient has been typed and the cross test was performed.¹⁹ This care, added to the confirmation of the recipient's

data with those of the hemotherapy package, contributes considerably to the prevention of reactions caused by incompatibility.

Patient orientation in transfusion practice is another important factor since it aims to provide data to the patient and their families about the benefits, as well as the risks of such therapy, such as transmission of diseases and adverse reactions that may occur. Guiding the patient about the procedure to be performed is an assignment of the nurse, either in the transfusion practice or other.²⁰

Therefore, the nursing team should prepare the patient for the procedure, informing the duration of blood transfusion, signs and symptoms that may be associated with transfusion reactions and about the continuous need for vital signs check. The client must sign a consent form, according to the institutional norms.²⁰

Vital signs should be checked and recorded in the medical record for comparison if the patient develops any transfusion reaction.²¹

The correct selection of the equipment is also an important care; the nursing professional should be aware that the hemotherapy requires specific equipment for the procedure, with a blood filter.^{19,22} If the patient is already undergoing intravenous therapy, the professional should check the permeability of the puncture, the caliber of the catheter and the presence of infiltration and signs of infection to ensure access availability. When it is not or if the puncture can not be used for this purpose, the nursing should obtain a calibrated venous access, always using 18 to 20 gauge catheter, ensuring adequate flow and preventing hemolysis.²³

The use of PPE and the adoption of standard precaution as essential care to ensure the safety of the transfusion practice.²⁰

Before starting the infusion, the professionals should pay attention to the characteristic color of the hemotherapy, if there are air bubbles, and check the

expiration date. Abnormal color may be called a sign of hemolysis, and the presence of air bubbles may evidence bacterial growth.¹⁸

The nursing team should double check the hemolytic bag tags in the company of another professional to ensure ABO and Rh compatibility by comparing the bag tag with the label, the medical record, and the transfusion request.¹⁹

Before the transfusion process, the health professional should evaluate the patient's vital signs, wash his hands properly, wear gloves and select the materials needed to perform the procedure,¹ such as the equipment, which must be filtered. The seal should be opened very carefully to avoid the risk of contamination. It is also necessary that the professional write down the opening time of the system and the name of the person in charge, besides checking the venous access constantly.

Table 2. Knowledge of the nursing team about transfusion reactions. Valença (RJ), Brazil, 2014.

Cited Signs and symptoms	Number of citations (%)
"Hypotension, pruritus."	1 (1.75%)
"Fever, chills, pruritus."	2 (3.5%)
"Fever, abdominal pain, dyspnoea."	2 (3.5%)
"Hyperthyroidism, nausea, abdominal pain."	1 (1.75%)
"Fever, local pain, hyperthyroidism."	1 (1.75%)
"Fever, nausea, tachycardia."	1 (1.75%)
"Fever, tremors, dyspnea"	2 (3.5%)
Fever, tachycardia, hypertension "	17 (29.8%)
"Fever, chill"	6 (10.5%)
"Nausea, Tachycardia, hypertension."	5 (8.7%)
"Fever, hypertension."	8 (14%)
"Dyspnoea, fever, hypertension."	3 (5.2%)
"Itching, fever."	4 (7.1%)
They do not know	4 (7.1%)

As the nursing professionals are responsible for the infusion of blood components, it is necessary for these professionals to be aware of the types of transfusion reactions that the patient may present with their clinical picture during hemotherapy treatment. On this point, they were asked if they knew the signs and symptoms that could identify the transfusion reactions (Table 2). It was verified that both the nurses and the nursing technicians demonstrated some signs and symptoms that characterize these reactions, while 4 (7.1%) health professionals did not know how to respond.

Any sign or symptom that appears after the installation of the blood component should be considered as a transfusion reaction until this hypothesis is discarded.⁶ It is extremely important to observe the patient even after the end of the transfusion, since some reactions may occur hours after the end of the procedure.

All patients undergoing blood transfusion may trigger transfusion reactions. Therefore, the nursing professional must be able to identify signs and symptoms that indicate that such a reaction is occurring.²³

Table 3. Conduct of the nursing team through the transfusion adverse reaction. Valença (RJ), Brazil, 2014.

Cited Behaviors	Number of citations n (%)
"Suspend the transfusion."	8 (14%)
"Stop transfusion and run saline."	1 (1.75%)
"Stop the transfusion, call the doctor on call."	24 (42%)
"Stop the transfusion, call the doctor on call, Run saline "	12 (21%)
"Stop the transfusion, call the doctor on call, Run saline, vital signs."	5 (8.7%)
"Communicate with the doctor in charge."	1 (1.75%)
"Interrupting transfusion, vital signs"	4 (7.1%)
	1 (1,75%)

Regarding what care the nursing team needs to perform, if the patient presents any transfusion reaction during the procedure (Table 3), it can be seen that the nursing professionals showed only a few behaviors to be performed and 1 (1, 75%) of them did not know how to respond.

The nursing team should act promptly if a transfusion reaction occurs, and this prompt care may guarantee the maintenance of the recipient's life since such reactions directly threaten the life of the transfused patient.¹⁹

Each type of transfusion reaction requires different intervention by the nursing team but will be detailed basic care that can be used at first for all reactions.

The following are the basic nursing care that should be described for a transfusion reaction recommended by ANVISA: a) Immediately interrupt the transfusion; B) immediately inform the responsible doctor; C) maintain the permeable venous access, with saline solution 0.9%; D) checking and recording vital signs; E) provide medicine, in case of urgency; F) examine all labels and tags; G) forward the hemotherapy bag and the equipment to the blood bank; H) record the incident in the nursing record and complete documentation; I) provide patient blood sample collection for culture, blood typing and cross-testing.¹

In the event of a transfusion incident, the physician or nurse will need to take a course pre-established by the Standard Operational Manual (MOP) and complete the transfusion incident notification form (FIT). The MOP standardizes the interventions of professionals involved in transfusion practice. Therefore, it is important to have a knowledge of this manual by the nursing team.¹

When asked about the maximum infusion time of the Hemacic Concentrate, it was verified that 47 (82%) of the nursing professionals correctly answered that it would be 4 hours; 5 (9%) answered that the maximum would be 3 hours; and 5 (9%) did not know how to respond.

Due to the manipulation of the product at the time of infusion and its maintenance at room temperature, the risk of bacterial growth becomes greater. In this way, no infusion should occur within a period of more than 4 hours.²⁴ When this period is exceeded, the transfusion must be suspended and the unit discarded.¹

The transfusion of packed red blood cells should not exceed 04 hours to avoid bacterial contamination.¹ After this period, the transfusion should be suspended, the doctor must be informed, the amount of transfused should be written down, and the bag should be discarded. The drip must be kept tightly to avoid loss of blood components for longer periods of time.

When questioned about how soon a red blood cell transfusion can be started after it has been removed from the refrigerator, it was found that 43 (75%) of the nursing professionals correctly answered that it would take 30 minutes; 6 (11%) answered that it would take 45 minutes; 6 (11%) did not know how to respond, and 2 (3%) answered that it would take 1h30min.

It is necessary to pay more attention to the time of exposure of the packed red blood cells, due to the characteristic of the biological material, and to the risk of hemolysis.¹ Therefore, after the withdrawal of the refrigerator, the red blood cell concentrate must be installed as soon as possible, so that this time does not exceed 30 minutes.

CONCLUSION

Hemotherapy is a process of high complexity and requires knowledge by the entire nursing team. Because of this, it is necessary to evaluate the knowledge of this team regarding hemotherapy.

Transfusion is a therapeutic resource that can save a patient's life. However, even if the professional is qualified and has performed all the correct procedure, the patient is subject to risks of complications, being immediate or

late. Because of its high complexity, hemotherapy is a topic that needs to be more addressed in the contents of the curriculum of Nursing Undergraduate, as well as in hospital continuing education to seek a better quality of this service.

The results showed the fragility by the nursing team about the knowledge in the care before and during a transfusion reaction. It is important to emphasize the clear need for these professionals to have permanent education regarding the subject, in addition to in-service training, for a better behavior through any intercurrent that may happen, aiming at a better care and without greater risks for the patient.

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