



RESEARCH ARTICLE

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NURSING PRACTICES FOR PATIENT SAFETY IN HEMOTRANSFUSION

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ABSTRACT

Objective: to describe through evidence of nursing practices literature on patient safety in blood transfusions. **Method:** this is a descriptive, qualitative research, through Integrative Literature Review (RIL), in the databases LILACS, SCIELO and BDNF-BIREME, in the period from 2013 to 2018. We analyzed the data according to the technique and Bardin. The search resulted in 07 articles, emerging 4 thematic categories. Results: it was identified that there are many factors that influence the quality of care provided by professionals and that expose patients to the risk at the time of the transfusion process. **Conclusion:** it was still several obstacles that interfere with patient safety, such as lack of applicability of protocols and strategies for patient safety.

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INTRODUCTION

Patient safety began to be discussed with the forerunner of nursing Florence Nightingale, who during the Crimean War became known for establishing actions that significantly changed the situation of health of people injured during the war, taking care to patients, and good security practices (Lopes and Santos, 2010).

Over the years and the increase in cases of failures in patient safety, a report released by the Institute of Medicine in 1990, held in hospitals in New York, indicated several medical errors that could be prevented and the security of patient began to be discussed in various places in the world (Toffoletto and Ruiz, 2013). In Brazil security measures began to be implemented in accordance with the resolution of the Collegiate Board (RDC) of the national health surveillance agency (ANVISA) n°. 36 of 22 July 2013, which sets patient safety as "the reduction, to a

minimum acceptable risk of unnecessary damage associated with health care" (Brasil, 2013). Were created in 2016 transfusion safety protocols that is advocated by the RDC 34/2014 (ANVISA) and the 158/2016 Ordinance of the Ministry of health, through the safety criteria in prescribing and administering blood and blood products (Brasil, 2014). The blood transfusions is a treatment that requires a procedure that involves techniques and steps that should be followed to ensure patient safety before, during and after transfusion (Brasil, 2017). The professionals who make up the nursing staff become responsible for most actions and, therefore, are in prime position to develop strategies that reduce the damage to the minimum acceptable, in addition to detect early complications that can reach patients (Pedreira and Harada, 2009). In this perspective, it is necessary that the nursing staff are enabled to identify and prevent any risks of blood transfusions causes to the patient. Therefore, this study aimed to Describe through evidence from literature, nursing practices on patient safety in blood transfusions during the period from 2013 to October 2018.

MATERIALS AND METHODS

It is a descriptive research with qualitative approach, through Integrative Review of literature (IRL), held in 6 steps: 1-type of study; 2-preparation of the Guiding Question; 3-sampling in the literature; 4-data collection Procedure; 5-Critical Analysis of included studies; 6-discussion of results (Teixeira *et al.*, 2014). The final sample was composed of 07 articles using the form of Ursi adapted in which included the following items: identification of articles (article title; authors; Database and year of publication) and Methodological Features of the study (publication type) (Ursi and Gavão, 2006).

The data collection procedure was held in databases Scientific Electronic Library Online (SCIELO), Latin American literature and Caribbean Health Sciences (LILACS) and databases in nursing (BDENF). For analysis of the data was used to analysis of content of Bardin (Bardin, 2016). Were selected not controlled descriptors (keywords) and controlled. The controlled descriptors which were used in this study, obtained in Decs, involved: "patient safety"; "blood transfusion", "transfusion reaction"; "nursing care" and "nursing" and used as uncontrolled descriptors (key words): "blood transfusions", "human error", "Risk" and "Transfusion Security Practices". Were used as criteria for inclusion: articles published in Portuguese language; available in full and online research; articles written during the period from 2013 to October 2018, in the modalities of field research, dissertations and integrative reviews. As exclusion criteria used: articles published in English and Spanish, research not available in full and online, less than 2013 publications and case studies mode. In this way, after reading the articles, four categories were identified: I-the knowledge of nursing staff in blood transfusions and safety practices and nursing care; II. Main risk factors on blood transfusions and adverse events; III-assistance Practices that ensure patient safety and the perception of nursing professionals; and IV-consequences of the lack of applicability of Protocol of the Ministry of health and strategies to promote patient safety.

RESULTS AND DISCUSSION

After the search in the databases are in the table results in scientific publications about the subject. In Table 1, it is possible to identify the articles in relation to the titles, authors, database and year of publication.

Table 1. Identification of the articles, the year 2018

Nº	TITLE	AUTHORS	DATABASE AND YEAR
01	Knowledge of nurses to the care in the transfusion process in newborns	Cherem et al	SCIELO2017
02	Nursing care and the focus on patient safety in the Brazilian scenario	Alves et al	SCIELO2016
03	Perception of nursing professionals about the safety of patients in intensive care units	Costa et al	SCIELO2016
04	Study of reported cases as incidents in a public hospital of 2011 to 2014	Gottens et al	SCIELO2016
05	Adverse events and safety in nursing care	Duarte et al	SCIELO2014
06	Patient safety: how nursing has contributed to the issue?	Barros et al	LILACS2014
07	Strategies to promote patient safety: the hazard identification evidence-based practices	Oliveira et al	SCIELO2013

Source: Authors of the research, 2018.

Table 2. Methodological Features of the study (publication type and purpose), 2018

Nº	ARTICLE TITLE	MAIN EVIDENCE
01	Knowledge of nurses to the care in the transfusion process in newborns	The nurses present research knowledge about the transfusion but not perform important steps.
02	Nursing care and the focus on patient safety in the Brazilian scenario	Identification of main risks according to the nursing professionals.
03	Perception of nursing professionals about patient safety in intensive care units	The practices developed by nursing professionals to ensure patient safety.
04	Study of reported cases as incidents in a public hospital of 2011 to 2014	The identification of adverse events for nurses.
05	Adverse events and safety in nursing care	Nursing professionals still overlook the adverse event notification.
06	Patient safety: how nursing has contributed to the issue?	Strategies aimed at increasing patient safety.
07	Strategies to promote patient safety: risk identification evidence-based practices	Assists practices that reduce damage to patients.

Source: Authors of the research, 2018.

Table 3. Methodological Study Characteristics (main evidence), 2018

Nº	ARTICLE TITLE	MAIN EVIDENCE
01	Knowledge of nurses to the care in the transfusion process in newborns	The nurses present research knowledge about the transfusion but not perform important steps.
02	Nursing care and the focus on patient safety in the Brazilian scenario	Identification of main risks according to the nursing professionals.
03	Perception of nursing professionals about patient safety in intensive care units	The practices developed by nursing professionals to ensure patient safety.
04	Study of reported cases as incidents in a public hospital of 2011 to 2014	The identification of adverse events for nurses.
05	Adverse events and safety in nursing care	Nursing professionals still overlook the adverse event notification.
06	Patient safety: how nursing has contributed to the issue?	Strategies aimed at increasing patient safety.
07	Strategies to promote patient safety: risk identification evidence-based practices	Assists practices that reduce damage to patients.

Source: Authors of the research, 2018.

In table 2 it turns out that the publications were field research and integrative literature review and its objectives were related to the themes: patient safety, adverse events and nursing skills. In table 3 we sought to address the main evidence contained in the seven articles found.

Analysis of Categories

CATEGORY 1- The knowledge of nursing professionals in blood transfusions and safe practices in nursing care: The nurses' knowledge about patient safety in blood transfusions emerged in article 1, and was also referred to in article 3, reporting the main risks of nursing care. It is important to the orderly steps of blood administration, monitoring and verification procedure of the vital signs. Responsible for achievement of blood transfusions, must start a slow infusion, confirming if the peripheral venous access is satisfactory; should regulate the flow of infusion after verifying the clinical conditions of the patient (Silva, Soares and Iwamoto, 2009). During the transfusion process, the nursing staff is responsible for developing assistance, along with the nurse, who is the team leader. Everyone needs to take ownership of the knowledge about blood transfusions in order to dispense with safe care and in accordance with the protocols of the Ministry of health. Another key issue of transfusion safety is the infusion time and should occur strictly by the nurse, once the blood and his blood products shall comply with stipulated time by Ordinance of the Ministry of health 1353/2011, in maximum 4 hours (Brazil, 2011). Considering that the greater scientific knowledge about risks are hemotherapy which patients are exposed. For this, the nurse needs to empower and train your team to prevent and identify possible transfusion reactions improving the quality of care and reducing mortality related to damage to the same. The professionals should be alert to any sign that take the suspicion of a transfusion reaction. How much faster is the detection of an adverse event, faster if you do an intervention strategy to minimize damage to the health of the patient, being of utmost importance the correct professional intervention, by administering a hemocomponente, the transfusional reactions can occur during the process, immediate or delayed (Sahu, Hemlata and Verma, 2014).

Category 2- Main factors of risks of blood transfusions and adverse events: Professionals should be based on the protocols of the Ministry of health, as well as apply them to prevent risks related to blood transfusion to increase and cause irreversible damage to the patients who need this procedure, it is necessary know some criteria such as the time of infusion of hemocomponente, among others. The infusion must occur at the appropriate time to reduce the possibility of loss of blood properties, due to exposure to the environment without temperature, occurring hemolysis increasing the chances of bacterial contamination and possible sepsis occurs in receiver (Fernandez, 2012). Among the factors of risk is the possibility of a transfusion reaction, including: fall of saturation, change in cardiac and respiratory frequency, local Erythema, skin rash, cyanosis, hyperemia, hypothermia, anaphylactic shock, among other (Cherem *et al.*, 2018). These incidents during nursing care, are named of adverse events, defined as unintended injuries or complications related to the care provided to the patient, which can cause damage or disability, temporary or permanent, extending the length of hospitalization and even death, having no correlation with disease that determined the hospitalization (Duarte *et al.*,

2015). A study conducted in a hospital in the State of DF-Brazil, in the period from 2011 to 2014, concluded that the occurrence of adverse events rates is still high, as some causes of reactions are still not identified, since it depends on the professionals inform occurrences so that these become known. The study still shows as the most frequent incident types are related to blood and blood products, followed by the patient's accident, which occurred particularly in the inpatient units of the hospital (Göttems *et al.*, 2016).

CATEGORY 3- Assistance Practices that ensure patient safety and the perception of nursing professionals: For adverse events be minimized there needs to be a proper conduct at work coupled to a strengthening in multidisciplinary relationship can be essential and indispensable for the realization of the process of work looking at the needs of users, linking spaces and seeking a labor organization with a minimum of errors (Gonçalves *et al.*, 2012). Over time comes identifying the intensification and the influence of the practices performed by the nursing staff to work on strengthening the safe assistance that is offered to users of the health system. It is possible to highlight, through studies, patient safety strategies, as implementations of the protocols of the Ministry of health, encouragement and adoption at adverse events notifications, multidisciplinary, effective communication training Professional, among others. The nursing staff has been implementing strategies and grants, through the application of protocols and checklists, for which interventions are carried out in order to enable a free assistance of harm to patients, safer and with quality (Silva, Soares and Iwamoto, 2009). A survey conducted by Honório and Caetano, (2009) proves that the use of protocols provides practice more qualified and more efficient and humanized assistance to the patient. These practices of security-related measures of patient health care minimizes disease and harm to patients, decreasing the time of treatment and hospitalization, improves or maintains the patient's functional status and increases your sense of well-being.

CATEGORY 4-Consequences of the lack of applicability of Protocol of the Ministry of health and strategies to promote patient safety in blood transfusions

There are several consequences to the patient by the lack of applicability of protocols for patient safety. In a field study, results showed the risks as a result the omission from the nursing staff. The nurse develops an act essential to transfusional reactions in case of identifying the signs and symptoms presented by the patient, the nurse should be able to, at least, take the appropriate measures for each of the types of reaction acting second their functions and duties as a member of the health team (Cherem *et al.*, 2018). Recognize the steps of blood transfusion Protocol, contributes to the minimization of consequences, both with transfusion reactions and adverse events, where upon the nurse as team leader must have enough scientific knowledge to these security goals are achieved successfully. The consequences resulting from the breach of patient safety, increase spending on health and the length of stay, causing complications and rising rates of deaths, leading to reduced user confidence in the health system and causes damage psychological (Nunes *et al.*, 2014). In 2016, a study proved that there was a higher frequency of incidents related to blood and blood products (n = 105; 50.2%); The blood transfusions is a complex procedure, which is associated with a significant risk of complications, including transfusion

reactions such as febrile non-hemolytic reactions and allergic (Sharma, Datta and Gupta, 2015).

Conclusion

Through the literature review in the databases identified that nursing develops important role in assisting in relation to patient safety in blood transfusions. However it was observed the difficulty on the part of these professionals in performing properly regulated protocols by the Ministry of health, often out of fear of punishment or by not knowing the damage. Identified big deficit in relation to the theme chosen by the researchers, besides being a recent Protocol, there are few studies that demonstrate the applicability of such focused on blood transfusion, even though many articles report on the safety of patient, but there are few for blood transfusions during this period from 2013 to October 2018. It is believed that the result of this research can contribute positively to a proper nursing care, help the nursing staff in the implementation of new strategies individually and humanized social assistance, where the assistance of Nursing is effectively, and may reduce the complications and aggravations associated with blood transfusions. It is expected that the research on the topic, provide motivation for new research focused on nursing and patient safety in blood transfusions, so that the assistance be provided in a manner more dignified with the minimum acceptable risk.

REFERENCES

- Bardin, L. 2016. *Análise de Contéudo*. 70th edn. Edited by A. Pinheiro. São Paulo.
- Brasil, A. N. de V. S. 2017. *Assistência Segura: Uma Reflexão Teórica Aplicada à Prática*. ANVISA. Brasília: Agência Nacional de Vigilância Sanitária. Available at: <http://portal.anvisa.gov.br/documents/33852/3507912/Caderno+1+-+Assistência+Segura+-+Uma+Reflexão+Teórica+Aplicada+à+Prática/97881798-cea0-4974-9d9b-077528ea1573> (Accessed: 22 July 2019).
- Brasil, M. da S. 2011. *PORTARIA Nº 1.353, DE 13 DE JUNHO DE 2011 - Aprova o Regulamento Técnico de Procedimentos Hemoterápicos., DOU Diário Oficial da União*. Available at: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2011/prt1353_13_06_2011.html (Accessed: 22 July 2019).
- Brasil, M. da S. 2013. *RESOLUÇÃO DA DIRETORIA COLEGIADA-RDC Nº 36, DE 25 DE JULHO DE 2013, Agência Nacional de Vigilância Sanitária*. Available at: http://bvsms.saude.gov.br/bvs/saudelegis/anvisa/2013/rdc0036_25_07_2013.pdf (Accessed: 22 July 2019).
- Brasil, M. da S. 2014. *RESOLUÇÃO - RDC Nº 34, DE 11 DE JUNHO DE 2014 - Dispõe sobre as Boas Práticas no Ciclo do Sangue, Agência Nacional de Vigilância Sanitária*. Available at: <https://saude.rs.gov.br/upload/arquivos/carga20170553/04145350-rdc-anvisa-34-2014.pdf> (Accessed: 22 July 2019).
- Cherem, E. de O. et al. 2018. 'PROCESSO DE TERAPIA TRANSFUSIONAL EM UNIDADE DE TERAPIA INTENSIVA NEONATAL: O CONHECIMENTO DO ENFERMEIRO', *Texto & Contexto - Enfermagem*. Revista Texto & Contexto-Enfermagem, 27(1). doi: 10.1590/0104-07072018001150016.
- Duarte, S. da C. M. et al. 2015. 'Eventos adversos e segurança na assistência de enfermagem', *Rev Bras Enferm*, 68(1), pp. 144–154.
- Fernandez, R. 2012. *Severe Sepsis and Septic Shock - Understanding a Serious Killer*. Edited by R. Fernandez. InTech. doi: 10.5772/13111.
- Gonçalves, L. A. et al. 2012. 'Alocação da equipe de enfermagem e ocorrência de eventos adversos/incidentes em unidade de terapia intensiva', *Revista da Escola de Enfermagem da USP*. Revista da Escola de Enfermagem da USP, 46(spe), pp. 71–77. doi: 10.1590/S0080-62342012000700011.
- Göttems, L. B. D. et al. 2016. 'Estudo dos casos notificados como incidentes em um hospital público de 2011 a 2014', *Rev Esc Enferm USP*, 50(5), pp. 863–869. Available at: http://www.scielo.br/pdf/reusp/v50n5/pt_0080-6234-reusp-50-05-0863.pdf.
- Honório, R. P. P. and Caetano, J. A. 2009. 'Elaboração de um protocolo de assistência de enfermagem ao paciente hematológico: relato de experiência', *Revista Eletrônica de Enfermagem*, 11(1). doi: 10.5216/ree.v11.46919.
- Lopes, L. M. M. and Santos, S. M. P. dos 2010. 'Florence Nightingale – Apontamentos sobre a fundadora da Enfermagem Moderna', *Revista de Enfermagem Referência*, 3(2), pp. 181–189.
- Nunes, F. et al. 2014. 'Patient safety: how nursing is contributing to the issue?', *Revista de Pesquisa: Cuidado é Fundamental Online*, 6(2), pp. 841–847. doi: 10.9789/2175-5361.2014v6n2p841.
- Pedreira, M. da L. G. and Harada, M. de J. C. S. 2009. *Enfermagem dia a dia: segurança do paciente*. São Paulo: Yendis Editora. Available at: <http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?IsisScript=iah/iah.xis&src=google&base=LILACS&lang=p&nextAction=lnk&exprSearch=641106&indexSearch=ID> (Accessed: 22 July 2019).
- Sahu, S., Hemlata and Verma, A. 2014. 'Adverse events related to blood transfusion', *Indian Journal of Anaesthesia*. Medknow Publications and Media Pvt. Ltd., 58(5), p. 543. doi: 10.4103/0019-5049.144650.
- Sharma, D., Datta, S. and Gupta, A. 2015. 'Study of acute transfusion reactions in a teaching hospital of Sikkim: A hemovigilance initiative', *Indian Journal of Pharmacology*, 47(4), p. 370. doi: 10.4103/0253-7613.161257.
- Silva, K. F. N., Soares, S. and Iwamoto, H. H. 2009. 'A prática transfusional e a formação dos profissionais de saúde', *Revista Brasileira de Hematologia e Hemoterapia*, 31(6), pp. 421–426. doi: 10.1590/S1516-84842009005000092.
- Teixeira, E. et al. 2014. 'Revisão Integrativa da Literatura passo-a-passo & convergências com outros métodos de revisão', *Revista de Enfermagem da UFPI*, 2(5), p. 3. doi: 10.26694/reufpi.v2i5.1457.
- Toffoletto, M. C. and Ruiz, X. R. 2013. 'Improving patient safety: how and why incidences occur in nursing care', *Revista da Escola de Enfermagem da USP*. Revista da Escola de Enfermagem da USP, 47(5), pp. 1098–1105. doi: 10.1590/S0080-62342013000500013.
- Ursi, E. S. and Gavão, C. M. 2006 'Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura', *Rev Latino-Am Enfermagem*, 14(1), pp. 124–131. doi: 10.1590/S0104-11692006000100017.