



INTEGRATIVE LITERATURE REVIEW ARTICLE

NURSING COMMUNICATION AND ITS IMPACT ON PATIENT SAFETY
COMUNICAÇÃO DE ENFERMAGEM E AS REPERCUSSÕES NA SEGURANÇA DO PACIENTE
COMUNICACIÓN DE LA ENFERMERÍA Y EL IMPACTO EN LA SEGURIDAD DEL PACIENTE

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ABSTRACT








Objective: to analyze the contribution of nursing communication to patient safety. **Method:** this is a bibliographical, descriptive study, of the integrative-review type, from 2013 to 2017, on MEDLINE, LILACS, and BDEF databases. The results were organized into categories from the Content Analysis technique. **Results:** three studies were analyzed, showing that the interprofessional communication at shift change allows the record and provides consistent information throughout the care process, providing a harmonious working environment with harmless assistance to the patient. **Conclusion:** the communication of professionals should be part of the safety culture, minimizing the errors to the patient. The observed challenges were delays of professionals, incomplete team and lack of time. Further studies are necessary to assist nurses and other health professionals in communication during the shift change. There is also the need to implement specific protocols of shift change at services with the purpose of improving communication between the team and, consequently, improve the patient safety. **Descriptors:** Communication; Nursing; Inpatients; Planning; Harm Reduction; Patient Safety.

RESUMO

Objetivo: analisar a contribuição da comunicação de enfermagem para a segurança do paciente. **Método:** trata-se de estudo bibliográfico, descritivo, do tipo revisão integrativa, de 2013 a 2017, nas Bases de Dados MEDLINE, LILACS e BDEF. Organizaram-se os resultados em categorias a partir da técnica de Análise de Conteúdo. **Resultados:** analisaram-se três estudos e se observou a comunicação interprofissional na passagem de plantão permite o registro e fornece informações condizentes a todo o processo de cuidado, propiciando um ambiente de trabalho harmonioso com assistência livre de danos ao paciente. **Conclusão:** ressalta-se que a comunicação dos profissionais deve fazer parte da cultura de segurança, minimizando os erros ao paciente. Observou-se como desafios, os atrasos dos profissionais, equipe incompleta e falta de tempo. Sugere-se novos estudos de modo a auxiliar os enfermeiros e demais profissionais de saúde na comunicação durante a passagem de plantão. Verifica-se, também, a necessidade de implementar protocolos específicos de passagem de plantão nos serviços com o propósito de melhorar a comunicação entre a equipe e consequentemente, melhorar a segurança do paciente. **Descritores:** Comunicação; Enfermagem; Pacientes Internados; Planejamento; Redução do Dano; Segurança do paciente.

RESUMEN

Objetivo: analizar la contribución de la comunicación de enfermería a la seguridad del paciente. **Método:** este es un estudio bibliográfico, descriptivo, del tipo revisión integradora, de 2013 a 2017, en las bases de datos MEDLINE, LILACS y BDEF. Los resultados fueron organizados en categorías a partir de la técnica de Análisis de Contenido. **Resultados:** se analizaron tres estudios y se observó que la comunicación interprofesional en cambio permite el registro y proporciona información coherente en todo el proceso de atención, proporcionando un ambiente de trabajo armonioso con asistencia libre de daño al paciente. **Conclusión:** cabe destacar que la comunicación de los profesionales debe ser parte de la cultura de la seguridad, minimizando los errores en el paciente. Los desafíos observados fueron los retrasos de los profesionales, equipo incompleto y la falta de tiempo. Se sugiere realizar estudios adicionales para ayudar a los enfermeros y otros profesionales de la salud en la comunicación durante el cambio de turno. También existe la necesidad de implementar protocolos específicos de cambio de turno en los servicios con el fin de mejorar la comunicación entre el equipo y, por lo tanto, mejorar la seguridad del paciente. **Descriptor:** Comunicación; Enfermería; Pacientes Internos; Planificación; Reducción del Daño; Seguridad del Paciente.

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INTRODUCTION

There is an increase of initiatives for promotion of safety and quality in healthcare in the hospital environment, with the involvement of managers and other employees, resulting in the goal of quality in various services offered to society that imply the optimization of results.¹

Patient safety aims to reduce risks to a minimum acceptable, considered constant component and closely related to the patient.² Therefore, the hospital should be differently inserted into the health system, from the care point of view, as well as in the training of health professionals. Based on the assumption that the nurse performs the management of care from the moment he/she plans activities, until he/she considers material resources, qualifies professionals of his/her team so there is communication with the whole multidisciplinary team and when occupying spaces of articulation and negotiation to facilitate improvement of care.²

Shift change is a form of communication of the team to ensure the rapid flow of information related to work, performed to transmit, receive and delegate tasks between each participant, involving the interaction between professionals and teamwork.³ The effectiveness of the communication between health professionals reduces the occurrence of errors and, consequently, promotes the patient safety.⁴

This study is relevant once it expands further discussions and reflections about situations that hinder patient safety in the hospital routine. Thus, there is need to deepen more about the importance of communication from the nursing team regarding the transmission of clinical data and events related to the patient with the purpose of ensuring patient safety and providing the continuity of harmless care.

OBJECTIVE

- To analyze the contribution of nursing to patient safety.

METHOD

This is a bibliographic, descriptive study, of the integrative literature review type, which is a method that includes the analysis of relevant researches that support decision-making and the improvement of clinical practice.⁵

The study development followed the steps: identification of the theme and research question for the preparation of the integrative review; establishment of inclusion and exclusion criteria for data search and analysis; assessment of studies included; interpretation of results; presentation of

the review/synthesis of knowledge and the conclusion with the goals.⁵

The review process occurred through the guiding question, based on the PICO²² strategy: “How does the nursing team communication affect the patient safety?”.

The scientific databases used were: Nursing Specific Database (BDENF - *Bases de Dados Especifica da Enfermagem*), Medical Literature Analysis and Retrieval System Online (MEDLINE) and the Latin American and Caribbean Literature in Health Sciences (LILACS), using the method of advanced search, categorized by title, abstract and subject in a temporal vision from 2013 to 2017. The descriptors used were crossed with the Boolean marker “and” from double crossing: *Communication; Nursing and Patient Safety*, which are part of the Health Sciences Descriptors (DeCS).

The data search occurred during the month of September and was performed by two reviewers, independently, to obtain an agreement after the confrontation of different results.

The inclusion criteria were publications in Portuguese and Spanish, published from 2013 to 2017, complete articles indexed and available for free on these databases that responded to the guiding question. The exclusion criteria were: articles that did not relate to the theme through the reading of the title and abstract, repeated articles, review articles and chapters of books.

Data were analyzed from the following guide for assessing studies: 1- Reading of the title of the publication; 2- Reading of the abstract and, finally, 3- Reading of the entire text. Two researchers performed this analysis independently and the results were compared with in order to verify the adequacy of the criteria for eligibility. In case of disagreement between the researchers, a third person analyzed the publications, deciding whether to include them or not.

The studies were categorized considering the hierarchy of evidence for intervention studies in: Level I - systematic review or meta-analysis; Level II - controlled and randomized studies; Level III - non-randomized controlled studies; Level IV - Case-control studies and cohort studies; Level V - systematic review of qualitative or descriptive studies; Level VI - qualitative or descriptive studies and Level VII - opinions or consensus.⁶ An instrument specific for identification was used to synthesize the modality of the study and its level of evidence.

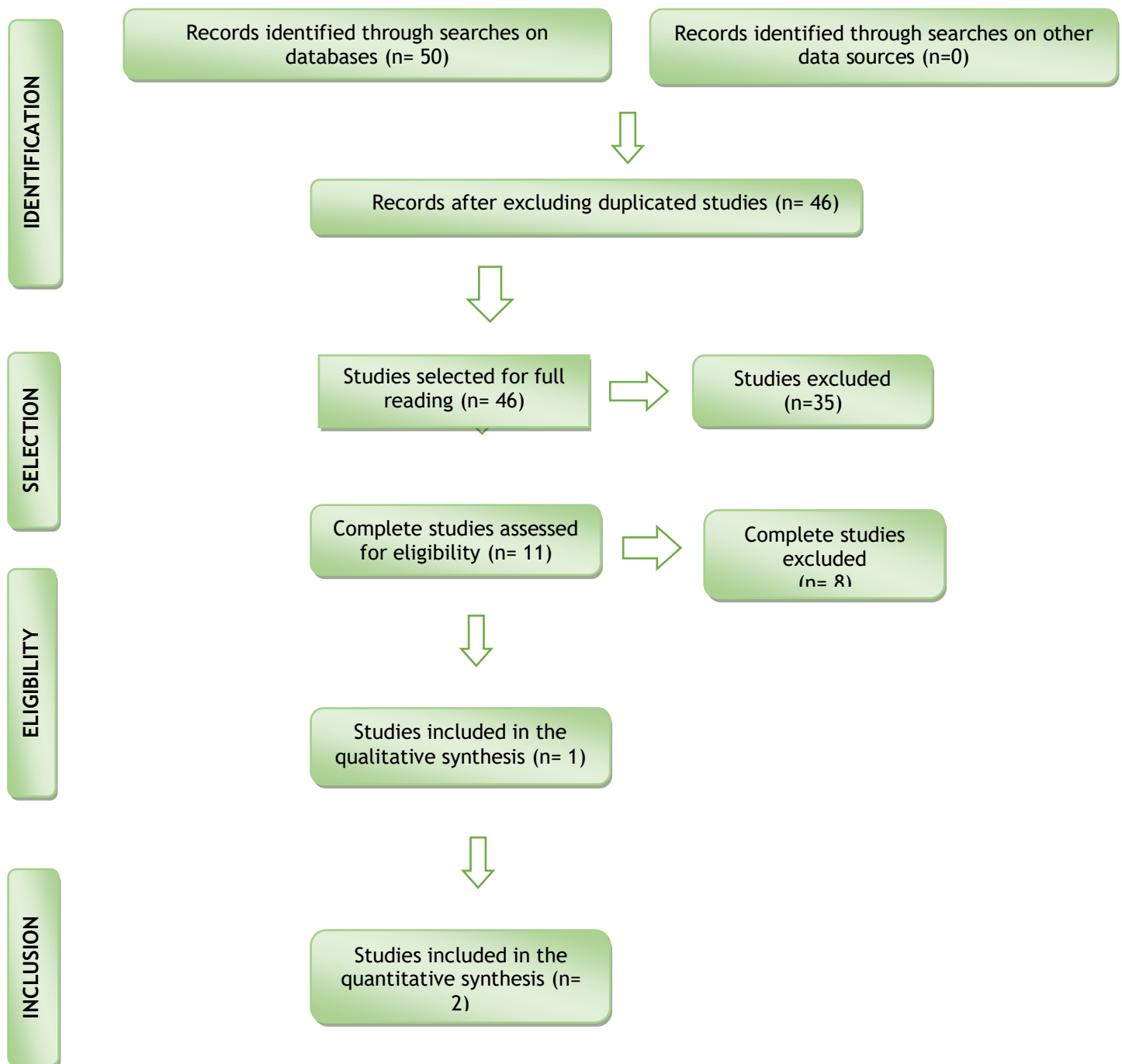


Figure 1. Flowchart adapted from the PRISMA 2009 model used in the selection of studies. Caruaru (PE), Brazil, 2018.

The results were organized into categories according to content analysis, including pre-analysis, floating reading and organization of the selected material, encoding of data into units of registry and context with the most significant terms, categorization of the results into classes by differentiation and regrouping of common elements and, finally, the inference by identifying information from the categories found.⁷ This process allowed grouping articles into three categories: Communication during the process of shift change, communication and patient safety and difficulties and failures in the shift change and their repercussions.

The synthesis of the results are presented through the discussion of the relevant findings in the literature. Information of the selected studies were structured in an instrument that included: authors, title, objective, year and journal, as shown in figure 2. Another instrument included: title, type of research, level of evidence and synthesis of results, as shown in figure 3.

RESULTS

The process of selection of scientific articles occurred as follows: initially, 46 publications (2 on MEDLINE, 20 on LILACS and 24 in BDNF) were identified, with the exclusion of 35 because they did not meet the eligibility criteria previously defined, thus leaving 11 publications. After a careful reading of the titles and abstracts, eight articles were excluded, leaving only three articles analyzed by reading their entire text and included in the integrative review, considering their level of evidence.

The searches revealed a shortage of publications discussing the proposed theme. All selected articles (100%) are Brazilian, from the states of Paraná, São Paulo and South Brazil, published in the years 2015 and 2016. Of the selected articles, 2 are qualitative and 1, quantitative.

The analyses led to the inclusion of the article⁸ that brings a multidisciplinary vision in relation to communication in the patient safety, since it reinforces the figure of the nurse as agent of great relevance in this process, since this professional monitors the patient 24 hours.

There was inclusion of the study¹⁰ that addresses the vision of nursing workers regarding the effectiveness of communication, since the act to talk freely about something that is wrong between the team makes a relevant factor to ensure the patient safety.

ID	Authors	Title	Objective	Year	Journal
0 1	Bohrer CD, Marques LGS, Vasconcelos RO, Oliveira JLC, Nicola AL, Kawamoto AM ⁸	Communication and patient safety culture in the hospital environment: vision of multiprofessional team	To analyze the patient safety culture regarding communication in view of hospital multidisciplinary team	2016	Rev Enferm UFSM
0 2	Massoco ECP, Melleiro MM ⁹	Communication and patient safety: perception of the nursing staff of a teaching hospital	To know the perception of nursing workers from a teaching hospital about dimension communication openness and non-punitive response to errors and highlight communication as a relevant factor in the culture of patient safety	2015	Nursing Journal of Minas Gerais
0 3	Silva MF, Anders JC, Rocha PK, Souza AIJ, Burciaga VB ¹⁰	Communication in nursing shift handover: pediatric patient safety	To know the perception of nursing professionals about communication during shift change and its effects on the pediatric patient safety	2016	Texto Contexto Enferm

Figure 2. Characteristics of the studies about the shift change and its relation with patient safety. Caruaru (PE), Brazil, 2018.

ID	Title	Type of research	Level of Evidence	Synthesis of the Results
0 1	Communication and patient safety culture in the hospital environment: vision of multiprofessional team	Quantitative Research	IV	The lines of communication and teamwork internally in the work units are elements of a favorable aspect to the patient safety culture in the perception of the participants. However, according to the same professionals, the lines of communication and collaboration between teams outside the labor sector, as well as some aspects related to the shift change, stand as barriers to the systemic and safe care in the organization.
0 2	Communication and patient safety: perception of the nursing staff of a teaching hospital	Quantitative Research	IV	The professionals discussed freely about something that was wrong. The data identified the fear to be punished and the evidence of the professional as limiting factor in the communication of errors and notification of adverse events.
0 3	Communication in nursing shift handover: pediatric patient safety	Quantitative Research	IV	The results evidenced the importance of shift handover, in which effective communication is essential for safe care. However, greater objectivity is necessary in the information transmission, the time used needs to be reduced and the shift handover records need to be systemized.

Figure 3. Synthesis of the results of studied about shift change and its relation with patient safety. Caruaru (PE), Brazil, 2018.

DISCUSSION

◆ The communication during the shift change

The act of communication is a fundamental tool for the development of nurses' work with the

team, for the transmission of a universal information, in addition to directly influencing the individuals.¹¹ In a clinical environment, this may mean the sharing of uncommon diagnostic findings

or the transmission of important information on the patient's condition.¹²

The shift change means delivering or changing the shift, being a practice carried out not only by the nursing staff but also by the multiprofessional team with the purpose of transmitting objective, clear and concise information about the events that involve the direct and/or indirect assistance to the patient during a work period, as well as matters of institutional interest.¹³ The verbal or non-verbal communication of the team is extremely important in this context, as reinforced in art. 1 of the Resolution COFEN 429/2012 which highlights registering the care process and managerial issues necessary for the continuity and quality of care as responsibilities of the nursing professional.²⁴

Therefore, for the an effective and safe development of assistance, the team needs to be well scaled with a fair work load, to have availability of inputs and a good communication between members from the sectorial and intersectorial teams, being the foundation of relations, as well as an essential element in the practice of the humanized, integral and harmless care to the patient.⁸

◆ The communication and patient safety

The promotion of patient safety and the quality of assistance involve the senior management of the institutions and their collaborators, and, thus, the patient safety needs to be seen as a responsibility of the entire multiprofessional team.⁸

The nurse constitutes a facilitating element of such information in the teamwork, since he/she responds by the unit and should alert the professionals that, during shift change, everyone should provide consistent information throughout the care process, thus avoiding negative interferences.¹⁴

Communication and work of the interdisciplinary health team are determinants of the quality and safety in the care provision to individuals.¹⁵ According to the World Health Organization (WHO), one in every ten patients in the world is a victim of errors and adverse events related to assistance to patients that led to investigate and propose solutions for preventing damages. In Brazil, the importance of effective communication as a goal of patient safety began to be widespread after publication of Ministerial Decree 529/2013, which encompasses the principles and guidelines, such as the creation of a safety culture, systematic and structured implementation of processes of risk management, integration with all care processes and linkage with the organizational processes of health services, the best available evidence, transparency, inclusiveness, accountability and the awareness and ability to react to changes.¹⁶

In this sense, one of the challenges to ensure patient safety in the hospital environment is the effective communication as a goal to be reached by the interdisciplinary team, as well as providing a harmonious working environment with harmless assistance. The communication is essential for a good development of the work, because it is the link of interaction that strengthens the bond between the interdisciplinary team and the customer.¹⁷

◆ Difficulties and failures in the shift change and their repercussions

The inpatient units with higher turnover of users and diversity of skills tend to have more difficulty during shift change. A possible explanation is that, the higher the time of hospitalization, the better the team can understand and identify the needs of the patient, which does not occur in clinics with large turnover of patients.¹⁸

A study¹⁹ evidences that the communication between nursing professionals was not effective, because the time of transmission of information (the shift change) was wasted with irrelevant information, professionals failed to meet others and some did not see their patients up to one hour after beginning their shift. These factors contributed to the lack of information on the patient, inconsistencies in the medical records, as well as to insufficient information and insecurity of the patient.

The delays and incomplete team are also complicating points, since the information will need to be repeated to all professionals who were not present and that often, due to lack of time, end up not being transmitted properly.²⁰

The failures of communication also represent the main cause of adverse events to the patient. Another study²¹ highlights that failures in teamwork and communication between health professionals have been one of the main factors that contribute to the errors in health care, adverse events (EAs) and, consequently, reduced quality of care.

A way to minimize these events is the need to advance a fair safety culture in health organizations, where there is no punishment for the mistakes, but for misconduct, being a culture focused on the reporting of errors in a safe environment, which encourages people to talk about the failures, analyze the situations that preceded them, identifying weak points of the system so that they can be repaired.²³

CONCLUSION

The analyzed studies showed the importance of communication not only in the shift change, but also throughout the care process as a vital tool for professionals to pass important clinical

information in a clear and objective manner for the continuity of care to the assisted patient. The communication of nursing and between sectors directly affect patient safety, since it registers and provides consistent information throughout the care process and provides a harmonious working environment with a harmless assistance. The main challenges in the communication process are delays of professionals, incomplete team and lack of time.

In this way, new studies on the theme should be developed to assist nurses and other health professionals about the importance of a good communication during the shift change. The limitations of the study included the reduced number of Brazilian studies on databases discussing the proposed theme, awakening the interest to develop future studies.

The analysis of the evaluated studies revealed the need to implement specific protocols of shift change at hospital units in order to improve communication between the team and, consequently, improve the patient safety.

REFERENCES

1. Christovam BP, Porto IS, Oliveira DC. Nursing care management in hospital settings: the building of a construct. *Rev Esc Enferm USP* [Internet]. 2012 [cited 2018 Nov 03];46(3):729-35. Available from: http://www.scielo.br/pdf/reeusp/v46n3/en_28.pdf
2. Pedreira MLG, Harada MJCS. Enfermagem dia a dia: segurança do paciente. Yendis, 2009.
3. Pereira BT, Brito CA, Pontes GC, Guimarães. A passagem de plantão e a corrida de leito como instrumentos norteadores para o planejamento da assistência de enfermagem. *Rev Min Enferm* [Internet]. 2016 Apr/June [cited 2018 Nov 03]; 15(2):283-9. Available from: <http://www.reme.org.br/artigo/detalhes/37>
4. Pontes EP, Couto DL, Lara HMS, Santana JCB. Non-verbal communication in the pediatric intensive care unit: perception of the multidisciplinary team. *Rev Min Enferm* [Internet]. 2014 Jan/Mar [cited 2018 Nov 06];18(1):158-63. Available from: <http://www.reme.org.br/artigo/detalhes/915>
5. Mendes KDS, Silveira RCCP, Galvão CM. Revisão Integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto Contexto Enferm* [Internet]. 2008 Oct/Dec [cited 2018 Nov 10]; 17(4):758-64. Available from: <http://www.scielo.br/pdf/tce/v17n4/18.pdf>
6. Melnyk BM, Fineoct-Overholt E. Making the case for evidence-based practice. In: Melnyk BM, Fineoct - Overholt E, editors. *Evidence based practice in nursing and healthcare: a guide to best practice*. Philadelphia, 2005.

7. Bardin L. *Análise de conteúdo*. São Paulo, 2011.
8. Bohrer CD, Marques LGS, Vasconcelos RO, Oliveira JLC, Nicola AL, Kawamoto AM. Comunicação e cultura de segurança do paciente no ambiente hospitalar: visão da equipe multiprofissional. *Rev Enferm UFSM* [Internet]. 2016 Jan/Mar [cited 2018 Nov 10];6(1):50-60. Available from: https://periodicos.ufsm.br/reufsm/article/view/19260/pdf_1
9. Massoco ECP, Melleiro MM. Comunicação e segurança do paciente: percepção dos profissionais de enfermagem de um hospital de ensino. *Rev Min Enferm* [Internet]. 2015 Apr/June [cited 2018 Nov 10];19(2):187-91. Available from: <http://www.reme.org.br/artigo/detalhes/1014>
10. Silva MF, Anders JC, Rocha PK, Souza AIJ, Burciaga VB. Comunicação na passagem de plantão de enfermagem: segurança do paciente pediátrico. *Texto Contexto Enferm* [Internet]. 2016 [cited 2018 Nov 16];25(3):360-9. Available from: http://www.scielo.br/pdf/tce/v25n3/pt_0104-0707-tce-25-03-3600015.pdf
11. Potter PA, Perry AGN. *Fundamentos de enfermagem*. Elsevier, 2018.
12. Potter PA, Perry AGN. *Fundamentos de enfermagem*. Elsevier, 2013.
13. Silva EE, Campos LF. Passagem de plantão na enfermagem: revisão da literatura. *Cogitare Enferm* [Internet]. 2017 Oct/Dec [cited 2018 Nov 28];12(4):502-7. Available from: http://www.scielo.br/pdf/tce/v25n3/pt_0104-0707-tce-25-03-3600015.pdf
14. Moura GMSS, Inchauspe JAF, Dall'Agnol CM, Magalhães AMM, Hoffmeister LV. Expectations of the nursing staffin relationship to leadership. *Acta Paul Enferm* [Internet]. 2013 [cited 2018 Nov 28];26(2):198-204. Available from: http://www.scielo.br/pdf/ape/v26n2/en_v26n2a15.pdf
15. Santos MC, Grilo A, Andrade G, Guimarães T, Gomes A. Comunicação em saúde e a segurança do doente: problemas e desafios. *Rev Port Saúde Pública* [Internet]. 2015 [cited 2018 Nov 28];10:57-47. Available from: <http://www.elsevier.es/en-revista-revista-portuguesa-saude-publica-323-pdf-X0870902510898583>
16. Marques FLG, Lieber NSL. Estratégias para a segurança do paciente no processo de uso de medicamentos após alta hospitalar. *Rev de Saúde Coletiva* [Internet]. 2014 [cited 2018 Dec 03];24(2):420-31. Available from: <http://www.scielo.br/pdf/physis/v24n2/0103-7331-physis-24-02-00401.pdf>
17. Nogueira JWS, Rodrigues MCS. Comunicação efetiva no trabalho em equipe em saúde: desafio para a segurança do paciente. *Cogitare Enferm*

[Internet]. 2015 July/Sept [cited 2018 Dec 03];20(3):636-40. Available from:

<https://revistas.ufpr.br/cogitare/article/view/40016/26245>

18. Mayor E, Bangartate A, Aribot M. Task uncertainty and communication during nursing shift handovers. *J Adv Nurs* [Internet]. 2012 Sept [cited 2018 Dec 10];68(9):1956-66. Available from:

<https://www.ncbi.nlm.nih.gov/pubmed/22111784>

19. Siman AG, Cunha SGS, Brito MJM. Nursing actions for patient safety in hospitals: integrative review. *J Nurs UFPE on line* [Internet]. 2017 Feb [cited 2018 Dec 10];11(2):1016-24. Available from:

<https://periodicos.ufpe.br/revistas/revistaenfermagem/article/viewFile/13472/16174>

20. Bueno BRM, Moraes SS, Suzuki K, Gonçalves FAF, Barreto RASS, Gebrim CFL. Characterization of handover from the surgical center to the intensive care unit. *Cogitare Enferm* [Internet]. 2015 July/Sept [cited 2018 Dec 10];20(3):511-7. Available from:

<https://revistas.ufpr.br/cogitare/article/view/40274/26257>

21. Bagnasco A, Tubino B, Piccotti E, Rosa F, Aleo G, Pietro PD, *et al.* Identifying and correcting communication failure among health professional working in the Emergency Department. *Int Emerg Nurs* [Internet]. 2015 July [cited 2018 Dec 10];21(3):168-72. Available from:

<https://www.ncbi.nlm.nih.gov/pubmed/23207054>

22. Santos CMC, Pimenta CAM, Nobre MRC. A Estratégia PICO para a construção da pergunta de pesquisa e busca de Evidências. *Rev Latino-am Enfermagem* [Internet]. 2007 May/June [cited 2018 Dec 12];15(3). Available from:

<http://www.redalyc.org/articulo.oa?id=281421874023>

23. Reason J. Beyond the organizational accident: the need for “error wisdom” on the frontline. *Qual Safety Heal Care* [Internet]. 2004 Dec [cited 2018 Dec 12];13(2):28-33. Available from:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1765802/>

24. Conselho Federal de Enfermagem. Resolução Cofen n. 429, de 30 de maio de 2012: dispõe sobre o registro das ações profissionais no prontuário do paciente, e em outros documentos próprios da enfermagem, independente do meio de suporte - tradicional ou eletrônico [Internet]. 2012 [cited 2018 Dec 15]. Available from:

http://www.cofen.gov.br/resoluo-cofen-n-4292012_9263.html

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