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Hospital infection control in critical patient nursing care

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ABSTRACT
Hospital-acquired infection is characterized by infection acquired after patient admission, and manifests itself during hospitalization or after discharge. This study is an integrative review. The search for articles was carried out using the following databases: BDENF (Nursing Database), Scielo (Scientific Electronic Library Online), MEDLINE (Medical Literature Analysis and Retrieval System Online), BIREME (Regional Library of Medicine), LILACS (Medical Literature Analysis and Retrieval System Online) and Google Scholar. The inclusion criteria for the bibliographic sources were articles published from 2012 to 2017, available in full text. It is of utmost importance that health professionals are aware of the concept of hospital infection, its chain of transmission, standard precautions, prevention measures, and biosafety. Nursing is primordial in the assistance to these patients, because it acts directly in the prophylaxis and control of infections, constantly assists the user with invasive and potentially contaminated procedures, manipulates equipment, instruments and medications, besides developing surveillance and prevention actions. It is concluded that nursing care is essential in the care of critically ill patients who need extra care.

Keywords: Nursing care, critical care, hospital infection.

1 INTRODUCTION

Hospital infection has been a major problem for public health, occurring both in developed and developing countries. It is characterized in the period of in-hospital stay until 72 hours after discharge. Hospital infections generate more time of permanecia hospitalized due to treatment (QUIRINO; MENDES, 2016). They can arise due to several factors, from invasive procedures, agglomeration of people with different pathologies sharing the same space and the lack of hand hygiene of professionals, which leads to increased morbidity and mortality.

Infections represent a serious condition that influences the morbidity and mortality of patients who are exposed to a wide variety of microorganisms, which can lead to longer hospital stays, invasive monitoring (BARROS, 2012), and the use of broad-spectrum antibiotics. About 720,000 people are infected in Brazilian hospitals per year and, of these, 20% evolve to death (CÂNDIDO et al., 2012).

A higher frequency of infections occurs in adult patients in Intensive Care Units, about 3% and 27% with severe diseases such as leukemias, lymphomas, postoperative heart and chronic lung diseases. Regarding the etiological agents, studies show that there is a higher incidence of viruses and gram-positive bacteria, followed by gram-negative bacteria. Fungi have stood out in the last 10 years, observing a 15-fold increase in the number of infections in patients under 15 years of age, with 8% in those under 5 years of age (FREIRE, 2013).

In order to control hospital infections in critically ill patients, it is essential to accurately diagnose their occurrence at the healthcare institution through epidemiological surveillance and the Hospital Infection Control Committee (CCIH), which actively, systematically and continuously observe the occurrence and distribution of these infections among hospitalized patients. Some methods are used for data collection, such as notifications, positive culture surveys, review of medical records of patients with fever and use of antimicrobials (FREIRE, 2013).

The multiprofessional team also contributes to infection control, they act in an organized, joint manner, sharing knowledge and necessary procedures, to avoid these infections some measures are fundamental such as hand hygiene, training and training of the multiprofessional team, updates on procedures, precautions and isolation among other measures (OLIVEIRA, 2016).

Integrated with the multiprofessional team, nurses follow critical patients from admission to hospital discharge, with critical evaluations, clinical judgment about the individual's responses to current or potential health problems, planning interventions that can bring satisfactory results for quality care (SANTOS, 2015).

Nursing care for infection control in critically ill patients consists of obtaining the patient's history, performing the physical examination, nursing diagnosis, performing treatment, counseling, health promotion, and guiding patients about the procedures performed. In addition, these professionals have leadership skills, judgment, emotional stability for an assistance that meets the patient's goals (CAMELO et al., 2013).

In view of the above, the purpose of this article is to survey and highlight scientific papers that deal with techniques for controlling hospital-acquired infections in nursing care of critically ill patients.

2 METHODOLOGY

This work is characterized by Mendes, Silveira, and Galvão (2008) as an interactive literature review, because its purpose is to gather and systematize research results on a limited theme or issue in a systematic and ordered manner, contributing to the deepening of knowledge

on the investigated theme (MENDES; SILVEIRA; GALVÃO, 2008).

The search for articles was developed through the databases BDENF, Scientific Electronic Library Online (Scielo), Medical Literature Analysis and Retrieval System Online (MEDLINE), Regional Library of Medicine (BIREME), Medical Literature Analysis and Retrieval System Online (LILACS), and Google Scholar.

The survey and analysis of the material occurred between the months of November and December 2017. For this search, the following Health Science Descriptors (DeCs) were used: "hospital infection"; "nursing care"; and "critical care". After identification, the articles were selected according to the proposed objective and the previously defined inclusion criteria. All studies identified by means of the search strategy were initially evaluated by analyzing the titles and abstracts. The inclusion criteria for the articles were: being published between 2012 and 2017, being available in full text, and being in Portuguese.

The initial sample was composed of 44 articles found in the database. Of these, 34 articles were excluded through critical reading of titles and abstracts, after reading the 10 articles selected, four articles with repeated content were excluded, leaving six articles that fit the research objective.

Then, the selected articles had their characteristics described and allocated in a structured table, in which the works were described as to the number of pages, identification of the theme, authors, institution of origin, indexation base, and year of publication.

3 RESULTS AND DISCUSSION

The description of the articles as presented above and in line with the integrative literature review methodology is shown in chart 1.

Chart 1 - Descriptive analysis of the reviewed studies on hospital infection control in nursing care of critically ill patients.

NO.	Identification of the theme	Authors	Home Institution	Index Base	Publication year
1	Characterization of healthcare-associated infections in a health care hospital education in Northeastern Brazil	SOARES et al.	Rev. Nursing UFPI	BDENF	2017

2	Hospital infection control: the nurse's role	DUTRA et al.	Research Rev. Care is Fundamental Online	BDENF	2015
3	Social representations of nurses about Hospital Infection: implications for preventive care	BATISTA et al.	Rev. Nursing UERJ	BDENF	2012
4	Systematization of nursing care in the prevention of infections in intensive care units	FERNANDES et al.	Rev. of Research Care is Fundamental Online	LILACS	2014
5	Healthcare-Related Infections and Clinical Severity in an Intensive Care Unit	OLIVEIRA et al.	Rev Gaúcha Enferm.	SCIELO	2012
6	The nurse in the prevention and control of healthcare-related infections health care	BARROS et al.	: Health Sciences.	ACADEMIC PUBLICATIONS	2016

Source: survey data.

Among the articles evaluated 33.33% are from the year 2012, 16.66% from the year 2014 and 16.66% from 2015, 16.66% from 2016 and 16.66% from 2017. The database that presented the highest number of articles that met the predefined requirements in this research was the BDENF, with 50% of the total articles analyzed.

The main issues addressed were topics related to infection control in health care and nursing care systematization. The authors addressed in a technical way the investigation of health care control based on the length of hospital stay, exposure to biological agents and the performance of invasive procedures, thus characterizing the increase in the number of SAIs in hospitalized patients.

Health Care-Related Infections (HAIs) are considered those infections acquired in the hospital and manifested after discharge. As a result of the higher number of lethal cases of HAIs, they are considered a serious public health problem, establishing among themselves one of the main causes of morbidity and mortality among people undergoing health care procedures (SOARES et al., 2017).

According to Soares et al. (2017), IRAS have a higher incidence in elderly people, caused mainly by the longer time they spend hospitalized, associated with other risk factors, including: comorbidities, immunosensitivity, neoplasms, neutropenia, and long stays in the intensive care unit.

> Such characteristic may be related to the underlying diseases found in the reported patients, taking into account that the underlying pathology favors the occurrence of IRAS by destabilizing the anti-infective defense mechanisms, causing malnutrition and conferring immunological deficiencies (SOARES et al., 2017, p.41).

Given this, it is of utmost importance that healthcare professionals are aware of the concept of hospital infection, its chain of transmission, standard precautions, prevention measures, and biosafety (SOARES et al., 2017).

As a result of the increased number of cases of hospital infection, the Hospital Infection Control Committee (HICC) was created, which plays an important role in hospital institutions through the prevention and control of infections. Because of this, nurses play an important role in the HICC team, acting responsibly and efficiently, developing activities together with other components of the organizing team (BARROS et al., 2016).

According to Oliveira et al. (2016), the hospital is a health system that is responsible for providing preventive and curative care, as well as recovery of individuals, families and groups in which it is inserted. In the hospital environment, infection control is essential, since it constantly involves all the actions and procedures that health professionals perform on the user.

According to Federal Law 9431, the existence of a CCIH and a hospital infection control program (PCIH), with guidelines and standards, is mandatory for the prevention and control of these infections. This includes epidemiological surveillance of hospital infections, team education and training, control of the rational use of antimicrobials, germicides, medical and hospital supplies, and training of professionals to use personal protective equipment (PPE) (DUTRA et al., 2015).

Infection control requires a responsible multidisciplinary team that works together to provide safe care, from simple measures such as hand washing before and after any care procedure to specialized care. Nursing is essential in the care of these patients, because it acts directly in the prophylaxis and control of infections, constantly assists the user with invasive and potentially contaminated procedures, handles equipment, instruments and medications, in addition to developing surveillance and prevention actions. Therefore, it is essential that nurses are

constantly updating their knowledge about infection control and encourage health teams to adopt responsible attitudes when providing care (DUTRA et al., 2015). Therefore, nursing needs to develop nursing care planning, based on the Resolution of the Federal Council of Nursing (COFEN) No. 358/209, which reaffirms the Systematization of Nursing Care as a private instrument of the nurses' work process, and its implementation should occur in all health institutions (MORAIS et al., 2015).

4 FINAL CONSIDERATIONS

Based on the results, it is possible to conclude that hospital infection is not only a constant complication in critically ill patients, but also an important indicator of the quality of care provided to patients. It is of utmost importance that health professionals adhere to preventive measures for infection control with guidelines, in order to reduce its incidence and promote safe care for patients.

Health institutions should value these professionals, in addition to offering them adequate working conditions and meeting moments to update their knowledge. These attitudes are capable of encouraging the discovery of new ways of thinking and acting, motivating the active participation of the workers, besides reducing as much as possible the chances of occurrence of hospital infections.

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