



ISSN: 2230-9926

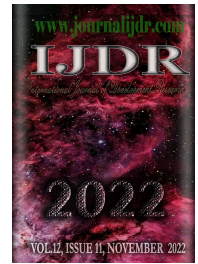
Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research

Vol. 12, Issue, 11, pp. 60461-60464, November, 2022

<https://doi.org/10.37118/ijdr.25809.11.2022>



RESEARCH ARTICLE

OPEN ACCESS

UNDERSTAND THE STRATEGIES USED BY THE MULTIPROFESSIONAL TEAM IN THE PREVENTION OF HOSPITAL INFECTION IN AN INTENSIVE CARE UNIT

Eronildo José dos Santos*¹, Alfredo José de Almeida Neto², Simone Souza de Freitas³, Cristiane Rodrigues da Silva Machado⁴, Karina Leilane Tavares Lins⁵, Cristiana Barbosa da Silva Feliciano⁶, Josineide Carvalho de Oliveira⁷, Cristiane Rodrigues da Silva Machado⁸, Emília Natali Cruz Duarte⁹, João Cristovão de Melo Neto¹⁰, Mariane Lorena Souza Silva¹¹, Neuriene Queiroz da Silva¹², Maria Eduarda Marques Ferreira¹³, Jabes dos Santos Silva¹⁴, Emmanuela Kethully Mota dos Santos¹⁵, Priscilla Fernanda Ferreira da Silva¹⁶, Tereza Natália Bezerra de Lima¹⁷, Carlos Vinícius Bezerra de Lima¹⁸, Igna Judicarlene Veloso Lima¹⁹, Jenifferson Alexandre Lima Souza²⁰, Emanuela de Oliveira Silva Souza²¹, Francisca Trajano Duarte²², Marcos David dos Santos Araujo²³, Izabella da Silva Melo²⁴ and Fernanda Antunes da Silva²⁵

¹Specialist in General ICU and Nephrology from the Metropolitan Faculty of Sciences and Technology –FAMEC; ²Doctoral Student in Public Health from the Inter-American Faculty of Social Sciences –FICS; ³Master's student at FIOCRUZ-PE; ⁴Specialist in Public Health by Uninter-SE; ⁵Specialist in Surgical Center by the Brazilian Faculty of Teaching, Research and Extension - Fabex / Cbpex; ⁶Specialist in Family Health Strategy by CEFAPP-PE; ⁷Specialist in Urgency and Emergency/ICU by Faculdade ALPHA; ⁸Specialist in Intensive Care Unit (ICU) by CEFAPP – PE; ⁹Master in Collective Health - PPGISC/UFPE; ¹⁰Master in Education from UNIFESP; ¹¹Nurse at the Federal University of Campina Grande (UFCG), Campus Cuité-PB; ¹²Nurse at the Faculty of Health and Humanities Ibituruna – FASI; ¹³Specialist in Hospital Infection Management and Control by University Center of Vale do Ribeira- UNIVR - (Unisepe); ¹⁴Nurse from the Federal University of Pernambuco-UFPE; ¹⁵Specialist in Family Health from the Federal University of Pernambuco-UFPE; ¹⁶Nurse at the University Center of João Pessoa – UNIPÊ; ¹⁷Master's student in nursing at the university of Pernambuco UPE / UEPB; ¹⁸Medicine by UNINSSAU; ¹⁹Degree in Agricultural Sciences from UFRPE; ²⁰Nurse at Estácio de Sá Recife; ²¹Specialist in Nursing Residency in Infectious Diseases; ²²Nurse at the Salgado de Oliveira University; ²³Specialization in Professional Education in the Area of Health: Nursing Health Ministries Fiocruz Fundação Oswaldo Cruz EAD / ENSP / FIOCRUZ; ²⁴Nurse at the Intergradas University of Vitória de Santo Antão – UNIVISA; ²⁵Specialist in Hospital Management - UNP

ARTICLE INFO

Article History:

Received 20th September, 2022

Received in revised form

21st September, 2022

Accepted 29th October, 2022

Published online 30th November, 2022

KeyWords:

Multiprofessional team,
Hospital Infection,

*Corresponding author:

Simone Souza De Freitas

ABSTRACT

The humanized and holistic assistance of the multidisciplinary team in the Intensive Care Unit has a primordial role. In which patients hospitalized in this sector are exposed to a wide variety of pathogenic microorganisms, where the use of potent and broad-spectrum antimicrobials is the rule and invasive procedures are routine. In this perspective, the objective is to understand the relevance of the work of multidisciplinary teams in intensive care units in preventing nosocomial infection. This is an integrative review study, which aims to achieve a consensus on a specific topic and synthesize the knowledge of a given area from the formulation of some questions, identification, selection and critical evaluation of scientific studies contained in databases electronics. It was observed the relevance of the presence of professionals from the multidisciplinary team who act directly and indirectly in the ICU, either in managerial administration or in the assistance itself. The results of the work developed by these professionals are notorious and with excellent prognosis for patients. In view of the results found, it was evident that the rates of nosocomial infection in the ICU, as well as multidrug resistance to antimicrobial drugs, are high. It is also added that patients with NI in the ICU had several comorbidities, significant use of invasive procedures, increased ICU stay, high use of antibiotics and non-washing of hands and use of gloves, when compared to patients without nosocomial infection. Thus, as a principle of prevention, action should undoubtedly be taken in problem situations and in the context of harmfulness. This action should be at all levels of the causality hierarchy and not just on direct exposure to risk factors. Therefore, in this way, the relevance of the active role of the multidisciplinary team in the intensive care unit is proven.

Copyright©2022, Eronildo José dos Santos et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Eronildo José dos Santos, Alfredo José de Almeida Neto, Simone Souza de Freitas, Cristiane Rodrigues da Silva Machado et al. "Understand the strategies used by the multiprofessional team in the prevention of hospital infection in an intensive care unit", *International Journal of Development Research*, 12, (11), 60461-60464.

INTRODUCTION

In the health scenario, all professionals involved in patient care play an important role in infection control when planning and organizing health services. Patient safety and the quality of these services linked to the control of infections related to health care are current issues (OLIVEIRA, 2016). The pioneer in strongly addressing the principles of good hygiene and the importance of having a clean reception area, in order to meet the basic needs of each individual, was nurse Florence Nightingale (ASSUNÇÃO, 2018). Florence1, emphasized the importance and the need to have a clean place, free of dirt, to avoid infectious risks, collaborating for the gradual evolution of the quality of patients. Currently, extrinsic factors are those relevant to the external environment, such as: hand hygiene, proper performance of invasive procedures, use of the correct technique, use of PPE and others (BEHLING, 2021). According to the Ministry of Health (1998), a Hospital Infection (HI) is that acquired after the patient's admission and that manifests itself during hospitalization or after discharge, when it can be related to hospitalization or hospital procedures”.

The National Health Surveillance Agency (ANVISA) systematized the definition of Health Care-Related Infections (HAI), formerly known as Hospital Infections, noting that their diagnosis can vary between 2 and 90 days after hospitalizations or procedures and that their defining characteristics range from depending on the type of intervention, as well as the site studied. IRAS can be acquired during or after a patient's hospitalization, and can be caused by several factors, such as: use of mechanical ventilation, invasive procedures, patient susceptibility, age, use of immunosuppressants (CHULAY, 2021), can be through the patient's own microbiota, a decline in the immune system, or due to contact with microorganisms present in this environment, which in many cases are multiresistant to commonly used antibiotics (CORREIA, 2013). IRAS is correlated with local abscesses, fever, blood cultures or cultures of lesions or positive cavities for pathogenic and/or antibiotic-resistant microorganisms (OLIVEIRA et al, 2016, ANVISA, 2017).

In order to obtain positive results, the prevention of nosocomial infection in the ICU is not only linked to patient care, but also to the adoption of preventive measures, including hand washing, use of standardized precautions, and attention to devices and materials, maintaining the environment clean and adequate (COSTA, 2019). According to a prevalence survey carried out by the World Health Organization, it showed that 8.7% of hospitalized patients contracted HI and at any one time 1.4 million people worldwide suffer from infectious complications related to the hospital environment. These data show that these infections range from clinics equipped with high technology to units with a basic health structure. Based on this assumption, there is a constant need for the multidisciplinary team to adopt safe practices to prevent damage and promote patient health. According to Resolution No. 2,271, of February 14, 2020, the multidisciplinary team of an ICU is formed by a specialized team with physicians, nurses, physiotherapists and other professionals who must be accessible as part of the hospital's clinical staff, being activated according to the needs of inpatients. It is worth mentioning that the multidisciplinary team, according to the National Health Surveillance Agency (ANVISA) in its Resolution of the Collegiate Board RDC n.º 7/2010, which provides for the minimum requirements for the operation of Intensive Care Units and other measures. Which brings, in its Section IV, Article 18, which says about access to assistance resources, these must be composed of nutritional, pharmaceutical, speech therapist, psychological, dental, social, clinical, etc. and, they must be guaranteed with own or outsourced resources, pointing to the perspective of care (FREIRE; HOFFMANN; ELEUTÉRIO, 2020). Faced with this problem, the following guiding question arose: How does the literature address the importance of a multidisciplinary team in the intensive care unit in preventing nosocomial infection? Thus, the objective of this study is to understand the relevance of the work of multidisciplinary teams in intensive care units in the prevention of nosocomial infection.

METHODOLOGY

This is a systematic review, adopting the method of integrative literature review delimited with studies published in the last two years on the strategies used by the multidisciplinary team in the prevention of nosocomial infection in an intensive care unit. The systematic review consists of the following steps: 1. Identification of the problem and selection of the hypothesis; 2. Search in the databases with the delimitation of descriptors; 3. Definition of the information to be extracted from the selected studies; 4. Evaluation of studies included in the review; 5. Analysis and understanding of the information obtained through the main results of the study and 6. Presentation of the review results. A periodic indexed search was carried out in databases of Latin American and Caribbean Health Science Literature (LILACS), Health Sciences Descriptors (DeCS), *Medical Literature Analysis and Retrieval System Online* (MEDLINE), accessed through the portal Pudmed; and, *Scientific Electronic Library Online* (SCIELO). The inclusion criteria used for the accession of articles were articles published in the last two years, articles in Portuguese and English, articles published in journals in scientific databases whose study used as a central focus the performance of the multidisciplinary team in the prevention of nosocomial infection. The criteria used for exclusion were studies or abstracts, original and outside the research period, repeated quantitative and quantitative review or opinion, exploratory not related to the topic and descriptive in other languages. To be included in the study, publications must cover the period between 2021 and 2022, with complete texts available online. After searching and reading all titles and abstracts, those judged relevant to the purpose of the studies were selected. In the next step, the full texts of the articles that met the inclusion criteria were obtained, which were subjected to exhaustive reading for apprehension and analysis of their content.

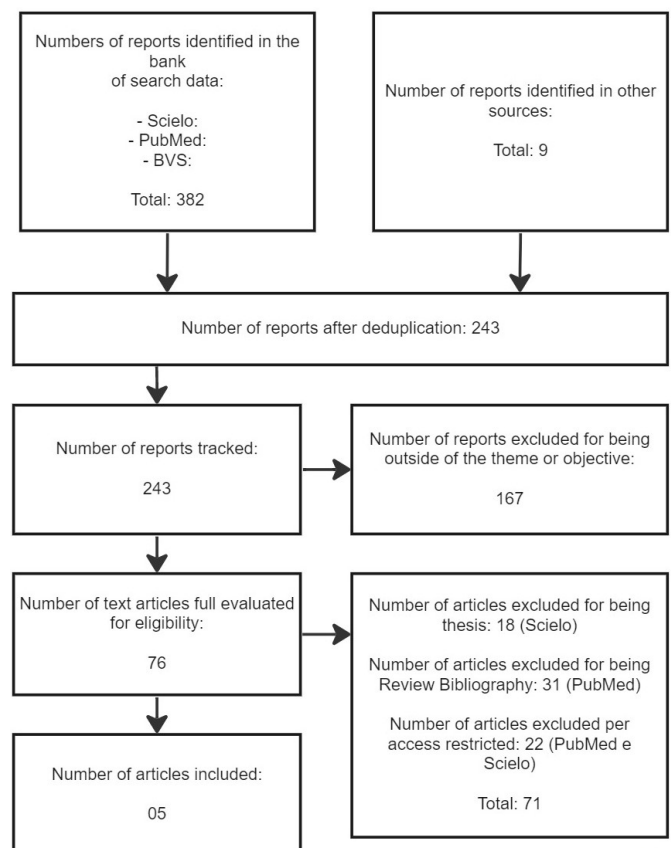


Figure 1. Article selection flowchart

Considering the diversity of works referring to the performance of the multidisciplinary team in the prevention of nosocomial infection in the first search and the criteria established for exclusion, initially the titles of the works will be, sequentially to the central objectives of the literature, which after successive readings of the texts available as

abstract and integrates, parallel approaches and different approaches to the research interest will be detected. From this, the application of three more filters will be carried out, repositioning the descriptors in the databases with the combination of the Boolean operators AND and OR, where it will be verified the reduction of the initial number of literatures found in the first search in both bases, a The following will be excluded from the study: Literature Reviews, Dissertations, Doctoral Theses, experience reports and case studies, as well as repeated studies, in other languages and outside the defined period. Of the 382 identified studies, five articles were selected for review. The flowchart is organized according to PRISMA criteria, illustrating how studies were excluded (Figure 1). The summary of the main aspects related to the objectives, methods, results and conclusions of the five selected studies are shown in Table 1.

RESULTS AND DISCUSSION

About 1,106 titles were found from the application of the descriptors, however, these results included documents considered outside the context of the research, thus, several studies were discarded after reading the titles and abstracts. Of the material explored in the second stage, 382 studies were addressing the topic addressed, after reading in full, only 05 articles were considered suitable to compose the final sample.

Table 1. Summary of information from the researched studies, selected by search tool in the period from 2021 to 2022

Authors	Title	Type of Study	Results
Araujo, Y, et al (2021).	Consequences of Resistance antimicrobial in the treatment of nosocomial infections	Case study	Implementation of National prevention policies and Infection control and resistance, stimulating the team multidisciplinary and CCIH as a preventive factor, Empowering the Professionals
Ventura, M, et al, 2021	Patient safety culture in a Neonatal Intensive Care Unit: contributions from the multidisciplinary team	Descriptive, cross-sectional study	This data reveals the effective integration between the members of the multidisciplinary team, who stated that they worked together to obtain the best care for the patient, always prevailing respect and support in the course of activities.
Nascimento R, et al, 2022	Hospital Infection and Bacterial Multi-resistance		

The articles that made up the sample emphasized, with consonant agreement among all researchers, and other literature that address this theme, which in relation to infection control led to the discovery of antibiotics, and with that, also came the increase in resistance of these microorganisms. The emergence of these multiresistant microorganisms, which stand out as a global concern, has become a major challenge in public health, with microorganisms increasingly resistant (GONÇALVES et al. 2016). In the study conducted by Ignaz Semmelweis in 1847, he demonstrated the importance of washing hands for all professionals of the multidisciplinary team before any procedure, as a main strategy for the prevention of nosocomial infection (HI) (ANDRADE; ANGERAMI, 1999). On this theme, Santos et al. (2004) describe, in their study, that the most important control over infections used until today comes through immunization and correct asepsis, mainly of the hands, with the aim of greater control of infections. IRAS. In our study, it was possible to identify that nosocomial infection in ICU's has become one of the biggest internal problems of the assistance provided by the multidisciplinary team, correlated with high resistance to good patient safety practices, through simple methods such as cleaning the hands. According to Rodrigues et al. (2009), the incidence of infections in the ICU occurs due to the vulnerability to which the patient is exposed, related to the time during hospitalization and the invasive procedures performed, compromised immunity and therapeutic dehydration. The multidisciplinary team will be able to reduce this time, improve immunity and consequently invasive conducts, providing standardized and humanized assistance, following the institution's protocols regarding patient safety. On the other hand, Fernandes et al (2000), states that the professionals who make up the multidisciplinary team must always adhere to and put into practice continuing education so that they can provide safe and effective

assistance, free of any damage to the patient's health. According to Pinheiro *et. at.*, (2008), there are several reasons that give rise to infectious causes, which can range from physical infrastructure, human resources and the quality of care provided by the multidisciplinary team. Therefore, it is perceived that it is a problem linked to care practices, which can be corrected with changes such as: maintenance of the environment in an aseptic way and guarantee of all sterile procedures. Clinical conditions, comorbidities (diabetes, neoplasms, kidney failure, obesity, malnutrition), as well as habits such as; smoking, alcoholism and others. Also, the use of invasive procedures can contribute significantly to the occurrence of infection, justifying the existence of several infectious topographies such as respiratory, urinary, bloodstream, surgical area, skin and gastrointestinal tract, etc. In this perspective, a specific care plan is necessary for each patient, as they have different particularities that need to be assisted individually and holistically by the multidisciplinary team. According to a study by Neves et al (2006), the simplest, oldest and low-cost measure to break the chain of proliferation of opportunistic infection control is hand washing after any and all procedures performed on the patient, associated with the use of gloves, whether procedural or sterile, depending on the type of procedure. As the ICU is a critical sector, where most of the patients are considered to be unstable with a high risk potential, these preventive measures must be adopted with more seriousness and awareness of their essential importance by the entire multidisciplinary team.

According to the reports stated by the scientific community, we can emphasize the relevance of the presence of the multidisciplinary team that work directly and indirectly in the ICU, whether in managerial administration or in the assistance itself. The results found in this study corroborate the importance of the work of the multidisciplinary team and that these professionals can pay attention and include the practice of hand washing at all levels of hospital care as a primary strategy for the prevention and control of hospital infections. Hand hygiene is the act of washing hands with soap and water, with the aim of removing transient and some resident bacteria, in addition to removing dirt, hair, excess sweat, oiliness and some scaly cells. However, it was observed that the professionals of the multidisciplinary team do not use the technique for correct hand hygiene, which should last 40 to 60 seconds, as recommended by the Ministry of Health (BRASIL, 2007). Therefore, this study guides all hospital units to adopt permanent training for the entire multidisciplinary team on correct hand hygiene, as the main strategy for effectively preventing and controlling HAIs, and is also considered an important support for the reduction the spread of bacterial resistance (PAIM, 2014).

CONCLUSION

With this, we can conclude that, as the results of this study pointed out, there are still many flaws in health care, lack of knowledge of guidelines and protocols, lack of scientific information on improving hand hygiene by the multidisciplinary team. It should be noted that there must be greater awareness work among these professionals, motivating them to adopt better strategies in adopting correct and safe practices, such as the importance of simple hand washing with soap

and water, since these are proven to be important measures to interrupt the transmission chain of micro-organisms avoiding dissemination and cross-contamination. Also, the conscious use of antibiotics should be another control measure, since studies have shown that the misuse and excessive use of low-potential antimicrobials on bacteria are behind the high increase in multidrug-resistant bacteria in the ICU. As well, we emphasize the limitation of articles that resulted in a small number of studies published with the purpose of the research, this may have occurred due to the use of the descriptors addressed in this review. However, further studies on this subject are suggested based on epidemiological data of the most prevalent infections in Brazilian ICUs and, concomitantly, the assistance provided by the multidisciplinary team and the mechanisms used by these professionals as a prevention strategy.

REFERENCES

- ANVISA. National Health Surveillance Agency. National Program for the Prevention and Control of Infections Related to Health Care (2016-2020). Brasília: ANVISA, 2016. Available at: <http://portal.anvisa.gov.br/documents/33852/3074175/PNPCIRAS+2016-2020/f3eb5d51-616c-49fa-8003-0dcb8604e7d9>. Accessed on Sep 10, 2022.
- ARMOND, G, A. Epidemiology, Prevention and Control of Infection Related to Health Care. São Paulo : Coopmed , 2013.
- ASSUNÇÃO, Luma Kaline Lima, et al.Aspects that contribute to the dissemination and transmission of bacterial multidrug resistance. Multidisciplinary Scientific Journal Nucleus of Knowledge., v. 04, pp. 21-32, 2020. Fiocruz Booklet: Rio de Janeiro, 2018.
- BEHLING, Eduarda L. Prevalence of microorganisms and bacterial resistance in isolates from samples of the respiratory tract of patients admitted to a philanthropic hospital in the Vale do Rio Pardo region. 52f. 2021. Monograph. the University of Santa Cruz do Sul, 2021
- BRAZIL. Ministry of Health. Ordinance No. 2616, provides for the organization and implementation of nosocomial infection control programs in hospitals, May 12, 1998. [Accessed on: 11 set. 2022] Available at: http://www.anvisa.gov.br/legis/portarias/2616_98.htm.
- COELHO, et al. Bacterial profile of nosocomial infections in surgical patients in a tertiary hospital. HU Rev., v.47, p.1-7, 2021.
- CORREIA, Camila MO Impact of bacterial resistance in combating healthcare-associated infections. 57f. 2013.Monography. Federal University of Paraíba, 2013.
- COSTA, GS Proposals for improving patient care actions based on the diagnosis of healthcare-associated infections (HAIs) in a university hospital in Fortaleza.139f. 2019. Monograph. Federal University of Ceará, 2019.
- FERNANDES AT, Fernandes MO, Ribeiro Filho N. Hospital Infections and their Interfaces in the Health Area. Rio de Janeiro: Atheneu; 2000.
- FREIBERGER MF, Silva DG, Pinheiro EC, Duarte RM, Santiago PO. Prevention of Cross-Infection between caregivers and patients in a hospital environment . Rev Cie Fac Edu Mei Amb.2011 [accessed on: 04 sep. 2011]; 2(Sup-I):74-76. Available at: <http://www.faema.edu.br/revistas/index.php/Revista-FAEMA/article/view/66>.
- LICHY RF, Marques IR. Risk factors for nosocomial infection in intensive care units: update and implications for nursing. Rev Enferm UNISA 2002; 3:43-9.
- MENDONÇA KM, Neves HCC, Barbosa DFS, Souza ACS, Tipple AFV. Nursing performance in the prevention and control of catheter-related bloodstream infection. Rev nurse UERJ. [Internet]. 2011 Apr/Jun [cited 13 Jun 2012]; 19 (2): 3303. Available at <http://portal.revistas.bvs.br/index.php?mfn=5238&about=access&lang=p>.
- NEVES, Zilah Cândida Pereira das et al. Hand hygiene: the impact of OLIVEIRA, HM; SILVA, CPR; LACERDA, RA Policies for control and prevention of infections related to healthcare assistance in Brazil: a conceptual analysis. Journal of the USP School of Nursing, v.50, n. 3, p. 502-508, 2016.
- PEREIRA, M.S. et al Nosocomial infection control in an intensive care unit: challenges and perspectives . Electronic Journal of Nursing. Goiânia, v.2, n.1. Oct-Dec 2000.Available at: <http://www.revistas.ufg.br/index.php/fen>.
- ROCK; Lorena Ferreira, LEME Natália Alves; BRAZILIAN; Marislei Espíndula: The role of the Commission for Infection Control in Health Services in the Intensive Care Unit: What to do? Electronic Journal of Nursing of the Center for Nursing and Nutrition Studies.[Serial online] 2010 Jan-Jul 1 (1) 1-16.Available from:<http://www.ccen.com.br/revistaeletrônica>.
- RODRIGUES EAC, Richtmann R. Health care-associated infections: practical guidelines. Sao Paulo: Sarvier; 2009.
- SAINTS; Liara Ferreira dos, VIEIRA JUNOR; Valdir Marcelino, SANTOS; Aline Ferreira dos, ALVAREZ; Cláudia Cecília de Souza, PEREIRA; Cíntia Alves de Souza, LOPES; Fernando Aguiar, CARVALHO; Nádia Cristina Pereira, OLIVIERA; Olcinei Alves de: Potential Sources of Agents Causing Hospital Infections: Adhesive Tapes, Adhesive Tapes and Procedure Gloves. See: Panam Infectol 2010; 12(3):8-12.
- TONINI, TFF Hospital Infection Control in an Intensive Care Unit: perception of nurses. Santa Maria, 2013.
- TURRINI RN, Santo AH – Nosocomial infection and multiple causes of death. *J Pediatr*, 2002; 78:485-490.
