

Malnutrition of patients admitted to the intensive care unit

A desnutrição do paciente internado na unidade de terapia intensiva

Desnutrición de pacientes ingresados en la unidad de cuidados intensivos

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REVISA

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RESUMO

Objetivo: identificar o papel do enfermeiro no controle e prevenção do quadro de desnutrição do paciente internado na unidade de terapia intensiva. **Método:** Trata-se de revisão integrativa da literatura. Para o levantamento bibliográfico do presente trabalho, foram utilizados os descritores: Desnutrição, Cuidados Críticos, Estado Nutricional e UTI. Por meio de pesquisas em artigos científicos foram encontrados artigos correntes na base de dados: Google Acadêmico. A pesquisa foi realizada durante o intervalo de novembro de 2021 a março de 2022. **Resultados:** A análise dos artigos selecionados evidenciou a existência de nove temáticas que apresentam dados importantes sobre papel do enfermeiro no controle e prevenção do quadro de desnutrição do paciente internado na unidade de terapia intensiva, as quais foram agrupadas e categorizadas em três categorias: Correlação entre o Estado Nutricional e o desenvolvimento de Lesões por pressão; Cuidados ao paciente em Terapia Nutricional Enteral; Processos de Enfermagem. **Conclusão:** Este estudo enfatizou a necessidade de capacitação contínua do profissional enfermeiro, acerca da sua participação na equipe multiprofissional e seu papel na Terapia Nutricional, além disso evidenciou a necessidade de mais estudos sobre a temática.

Descritores: Desnutrição; Cuidados Críticos; Estado Nutricional; UTI

ABSTRACT

Objective: to identify the role of the nurse in the control and prevention of malnutrition of the hospitalized patient in the intensive care unit. **Method:** This is an integrative review of the literature. For the bibliographic survey of the present study, the following descriptors were used: Malnutrition, Critical Care, Nutritional Status and ICU. Through research in scientific articles were found current articles in the database: Google Academic. The survey was conducted between November 2021 and March 2022. **Results:** The analysis of the selected articles showed the existence of nine themes that present important data on the role of the nurse in the control and prevention of malnutrition of the hospitalized patient in the intensive care unit, which were grouped and categorized into three categories: Correlation between the Nutritional Status and the Development of Pressure Injuries; Patient Care in Enteral Nutritional Therapy; Nursing Processes. **Conclusion:** This study emphasized the need for continuous training of the nurse professional, about their participation in the multiprofessional team and their role in Nutritional Therapy, besides evidenced the need for more studies on the subject.

Descriptors: Malnutrition; Critical Care; Nutritional Status; ICU.

RESUMEN

Objetivo: identificar el papel de las enfermeras en el control y la prevención de la desnutrición de los pacientes hospitalizados en la unidad de cuidados intensivos. **Método:** Se trata de una revisión integradora de la literatura. Para la encuesta bibliográfica del presente estudio se utilizaron los siguientes descriptores: Desnutrición, Cuidados Críticos, Estado Nutricional y UCI. A través de la investigación en artículos científicos se encontraron artículos actuales en la base de datos: Google Academic. La encuesta se realizó durante el período comprendido entre noviembre de 2021 y marzo de 2022. **Resultados:** El análisis de los artículos seleccionados mostró la existencia de nueve temas que presentan datos importantes sobre el papel de las enfermeras en el control y prevención de la desnutrición de los pacientes hospitalizados en la unidad de cuidados intensivos, los cuales fueron agrupados y categorizados en tres categorías: Correlación entre el Estado Nutricional y el desarrollo de lesiones por presión; Atención a pacientes en Terapia Nutricional Enteral; Procesos de enfermería. **Conclusión:** Este estudio enfatizó la necesidad de capacitación continua del profesional de enfermería, sobre su participación en el equipo multidisciplinario y su papel en la Terapia Nutricional, además de resaltar la necesidad de más estudios sobre el tema.

Descriptores: Desnutrición; Cuidados Críticos; Estado Nutricional; UCI.

Introduction

Malnutrition can be understood as any nutritional imbalance that affects the health of individuals, such as malnutrition and obesity, is also a public health problem that affects thousands of individuals, with elderly patients being statistically considered the most vulnerable to this situation.¹

The Brazilian Hospital Nutritional Assessment Survey (IBRANUTRI), considered the largest Brazilian study on malnutrition, found that almost half (48.1%) of hospitalized patients were malnourished, and this rate becomes even higher as the hospitalization period increases.² In addition, the consequences of malnutrition that affects patients extend to the hospital, as the increase in hospitalization days increases the costs of treatment.³ In view of this situation, Nutritional Therapy (TN) is an extremely important procedure to face this problem, considering that it is a set of therapeutic procedures performed for the maintenance or recovery of the patient's nutritional status, being performed through oral supplementation, Enteral Nutritional Therapy (TNE), Parenteral Nutritional Therapy (NPT) or the combination of these procedures.²

In view of this context, there is in Brazil the Multidisciplinary Team of Nutritional Therapy (EMTN), regulated by the Ministry of Health through Ordinance No. 272 and the current Resolution RDC No. 503/2021, which is composed of health professionals who work for the recovery or maintenance of the patient's nutritional status, among which the nurse is, which has among its attributions the administration of the nutritional diet.⁴⁻⁵

Thus, it is observed the importance that health professionals, especially nursing professionals, understand and reflect on their professional practice about THE, so that their care is effective in coping with this serious Brazilian public health problem.

Thus, the accomplishment of this research is justified in its relevance to the academic environment, for the training of health professionals, especially nurses, who will work in hospitals performing the PROCEDURES of NT, because it is necessary to discuss about the importance of nurses' actions in this aspect of health care.

In this sense, this study aimed to identify the role of nurses in controlling and preventing the malnutrition of patients hospitalized in the intensive care unit.

Method

The study was carried out, this is an integrative review of the literature. That is, a method that aims to perform the summary of results obtained in research on a specific issue or theme, in a systematic, orderly and integral way.⁶

This type of study should follow a stream of well-defined steps. The first stage consists in the characterization of the theme and choice of the right-hand question, in this stage we identify the search strategies, descriptors and database. The second stage is where the inclusion and exclusion criteria will be established, such as which databases and search for studies. The third stage is characterized as the identification of pre-selected and selected studies, from a precise reading following to the elaboration of a table with the studies pre-selected for the integrative review.⁶

The fourth stage aims to synthesize and document the information obtained from the scientific articles found and analyzed in the previous phases, that is, where the characterization of the selected studies occurs. Next, the fifth stage concerns the discussion about the texts analyzed in the integrative review, where the researcher should perform his interpretation about the data. In the sixth and last stage presented by the author, consists in the preparation of the document that should detail the description of all phases trodden by the researcher, cautiously, and should present the main results obtained.⁶

Therefore, for the bibliographic survey of the present study, the following descriptors were used: Malnutrition, Critical Care, Nutritional Status and ICU. Through research in scientific articles, in the electronic databases Bireme, Lilacs, Scielo, no articles were found covering the theme of the work. Current scientific articles were found in the database: Google Scholar. The survey was conducted during the period from November 2021 to March 2022. Using the descriptors, a total of 166 articles were found. Next, the inclusion and exclusion criteria were applied, resulting in 10 articles.

The inclusion criteria used were: Articles in Portuguese, consistency with the theme, articles published in the last 5 years (2017-2022). Articles that were not published in full in journals, articles without scope to the theme addressed and those that were not published within the established time frame were excluded from the analysis.

Results

After the detailed reading of the selected studies, Table 1 was elaborated with the layout of the data: Author and year; Sample characteristic, Methodology and Main results.

Table 1- Description of selected studies.

Author	Sample characteristics	Method	Main Results
Prado, et. al. ⁷	Study conducted with 42 individuals hospitalized in the wards and intensive care unit (ICU) of adults of the Hospital Samuel Libânio Clinics (HCSL).	The study was divided into 3 groups. Group A used enteral diet, a hyperprotein and hypercaloric dietary supplement. plus zinc, group B, enteral diet, a supplement hypercaloric food and hyperprotein and group C only enteral diet.	Among the 42 patients in the study, only three developed pressure lesions, 1 patient in group A and 2 patients in group C. The study shows that the nutritional status of the patient is correlated with the development of pressure injuries.

Souza et al. ⁸	Sample composed of 21 articles.	Integrative review of the literature published from 2006 to 2016.	Nutritional status was related to the development of pressure injury in 11 articles, evidencing the need for the use of protocols to identify risk factors, prevention and treatment of PPL by the nursing team.
Pachá et al. ⁹	Sample composed of 189 patients who were considered as cases (developed pressure lesions) and 570 patients considered controls (did not develop lesions).	Case-control study, conducted in five Intensive Care Units (ICUs) with 103 beds. Data collection was performed between September 2014 and August 2015	The results showed that elderly patients with neoplastic diseases are conducive to developing pressure injuries, because they present difficulties in feeding, which leads to malnutrition and dehydration. It highlights the role of nurses in identifying risks, as well as in the prevention of pressure injuries.
Lima. ¹⁰	Sample composed of 8 articles.	An integrative review carried out through research in the VHL database, in which eight articles were selected and analyzed.	The results presented 5 main adverse events related to the use of Enteral Nutritional Therapy. And they demonstrated the responsibility of the nurse as a member of the multidisciplinary team in Nutritional Therapy (TN), to ensure quality in nutritional support.
Silva, Cruz. ¹¹	Sample composed of 10 studies.	Integrative review of the scientific literature in the databases of the Virtual Health Library (VHL) and SCIELO, from 2011 to 2017.	The importance of nurses during the whole process of care for patients using Enteral Nutrition is evidenced.
Silva, Cruz. ¹²	Sample composed of 10 studies.	Integrative review of the literature published from 2011 to 2019, in which a survey of scientific production related to evidence-based nursing practices on blood glucose level in intensive care units was conducted.	It was evidenced the importance of the participation of nurses not only to control glycemic oscillations, but also to provide safe care and assist decision-making, and ensure effective and quality care.
Figueiredo Junior et. al. ¹³	13 articles	Integrative Review with an approach descriptive qualitative performed through research in the VHL, LILACS, BDENF and MEDLINE databases, with a time frame from 2012 to 2017.	Pressure injuries are due to multifactorial stems, among which is nutritional deficit. This fact requires health professionals to recognize risk factors, as well as actions to prevent these injuries.

Ortiz et. al. ¹⁴	20 individuals participated in a study conducted in a public hospital in Campo Grande/MS predominantly white. 50% adults and 50% elderly, 55% male and 45% female.	The nutritional status was assessed by applying the Subjective Global Assessment. The evaluation of the presence of pressure injury was made by a nurse and, to categorize the stage, the National Pressure Ulcer Advisory Panel scale was used. The SPSS program was used, considering 5% significance.	It was observed that most of the participants were bedridden (80%) which suggests an increased risk for nutritional status. In addition, the study showed sacral injury, the most prevalent type among the others.
Barcellos et.al. ¹⁵	A sample composed of 218 individuals with whom adverse events occurred during the use of invasive devices, 62.8% of whom were male, with a mean age of 59.8 years.	Data collection was performed retrospectively in electronic medical records, and the Simplified Acute Physiology Score 3 (SAPS-3) prognostic system was also used to establish a predictive mortality index. The data were categorized and descriptive analysis was performed.	The study showed accidental loss of enteral tube as the highest occurrence among adverse events with invasive devices, being detected in 107 medical records (49.1%). Such incidents directly imply iatrogenic malnutrition.
Silva et. al. ¹⁶	Sample consisted of 122 medical records of ICU patients between December 1, 2016 and November 31, 2017.	The medical records with nursing history and nursing diagnoses (ND) were selected, completed in the first 24 hours of hospitalization. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) 22.0. Descriptive analysis was performed with absolute and relative frequency distribution. The discussion of the data was carried out using as a cutoff point frequency of ED equal to or greater than 50%.	Among the results found, it was evidenced that the UNbalanced Nutrition ND: lower than body needs, was present in 120 (98.4%) medical records.

The analysis of the selected articles showed the existence of nine themes that present important data on the role of nurses in the control and prevention of malnutrition of patients hospitalized in the intensive care unit, which were grouped and categorized into three categories: Correlation between nutritional status and the development of pressure injuries.; Care for patients in Enteral Nutritional Therapy; Nursing processes. This thematic categorization was illustrated in Chart 2.

Table 2 - Thematic categorization

Themes discussed in the studies	Category
Influence of nutritional status on the development of pressure injuries.	Correlation between nutritional status and the development of pressure injuries.
Epidemiological, clinical and nutritional profile of patients with pressure injuries.	
Risk factors for the development of pressure injuries.	
Enteral nutritional therapy in critically obese patients.	Care for patients in Enteral Nutritional Therapy.
Glycemic control of intensive care patients.	
Patient safety in Enteral Nutritional Therapy.	
Care for critically ill patients in Enteral Nutritional Therapy.	
Adverse events with invasive devices	
Nursing diagnoses	Nursing Processes

Discussion

Correlation between Nutritional Status and The Development of Pressure Injuries

The results revealed the importance of the nursing professional's role in the nutritional care of icu patients in so that complications of the clinical picture with the development of other pathologies such as pressure injuries (PPL) are avoided.

Ortiz's study, et al.¹⁴ when discussing the epidemiological, clinical and nutritional profile of patients who developed pressure injuries, showed that of the 20% of patients who developed lesions were malnourished, demonstrating that a deficient nutritional status contributes to the development of pressure injuries in bedridden patients.

In this same perspective, Prado, et al.⁷ pointed out in their study that patients with supplemented enteral nutrition obtained improvements in nutritional status, biochemical tests and braden scale score, finding that unbalanced nutritional status is correlated with the development of pressure injuries.

Corroborating the results, Souza et al.⁸ found that unbalanced nutritional status is one of the factors for the development of PPL in the elderly. Because insufficient nutrition, besides being related to the patient's immobility, because it influences functional capacity, can cause a low oxygenation of the skin and, consequently, reduce the amount of nutrients in the tissue.

Thus, the study highlights the need for nursing to be screened for the predisposition of patients to develop these lesions due to nutritional status, and when the risk of malnutrition is contacted, the cases are evaluated by the nutritionist so that the necessary nutritional support is offered to each patient.

Pachá et. al⁹ also present results on this aspect, in their study elderly patients affected by neoplastic diseases develop PPL because they present difficulties in feeding, due to therapy and the advancement of the disease, which results in malnutrition and dehydration of them. The study points out that it is essential that nurses be aware of risk factors for the development of injuries, as well as to record the appearance of PPL and empower professionals involved to

act in prevention. Considering that PPLs are a marker of the quality of health care and are considered to be widely avoidable.

From this perspective, the study by Figueiredo Júnior et al.¹³ also points to the development of pressure injuries as a result of multifactorials, among which is the deficit of nutritional status. And it emphasizes the importance of nurses being integrated with the multidisciplinary team, for systematized and effective care in health promotion and improvement in the quality of life of patients.

Care for patients in Enteral Nutritional Therapy

The results showed a great relevance of the nurse's performance regarding the care of patients admitted to the ICU in Enteral Nutritional Therapy.

The study by Lima¹⁰, when discussing the safety of patients using NE, showed the prevalence of five adverse events to therapy, which are: obstruction of the tube; inadvertent exit or unplanned exit of probe; Divergences between the volume of the prescribed diet and infused volume; Gastrointestinal complications and emotional complications. And it emphasized the need for nurses, as a professional member of the multidisciplinary team in NM, to be integrated with the nutrition team in the planning and development of actions that reduce the risks of adverse events to NE, considering that part of the events can be avoided with simple actions such as the training of the nursing team and the development of control protocols.

In the same segment, Barcellos et. al ¹⁵ showed in their study on adverse events with invasive devices that accidental loss of tube is the most recurrent, being found in 49.1% of the occurrences recorded by nurses, directly implying iatrogenic malnutrition. In this sense, it stresses that the nursing team has an important role in the recognition and notification of these occurrences, as well as in the investment in actions to improve professional practice, both interventionist and preventive actions, so that such events are reduced and that a good quality in the care provided is ensured.

In agreement with previous studies, Silva and Cruz ¹¹ discuss the role of nurses in the care of patients who use NE, and emphasize the importance of invest in training and in the elaboration of NE protocols, considering that this nutritional pathway is the most recommended for critically ill patients, as it reduces the risk of infection, therefore, complications such as pulmonary aspiration that can generate pneumonia should be avoided. Because these adverse effects can result in inefficient NE and consequently malnutrition.

The study by Silva and Cruz ¹² also contributes to the results by pointing out the participation of nurses in glycemic control of ICU patients, the study shows that the glycemic variability of these patients has several factors, including the type of nutrition, whether enteral or parenteral. Thus, the patient receiving this type of diet needs more careful monitoring regarding glycemic levels, since hyperglycemia or hypoglycemia may increase the risk of morbidity and mortality. The study also highlights the importance of nursing professionals in the early identification of factors that may arouse glycemic variability, in order to perform procedures for the control and prevention of this risk.

Nursing Process

In this aspect, the study by Silva et al.¹⁶ points out the importance of performing nursing diagnoses (ED), the second stage of the Nursing Process (PE), which constitutes a technology and method of improving the care provided.

The study showed that the majority (98.4%) of the diagnoses made by nurses found unbalanced nutrition: lower than the body needs in ICU patients. And he emphasized that the performance of this ED, which is the competence of the nurse, enables the intervention together with the nutritionist, and multiprofessional team, in the search for alternatives that help the patient to recover and maintain the basal metabolism necessary for their recovery. In addition, it emphasizes that the nursing team requires constant attention, scientific domain and effectiveness, with regard to the clinical condition, treatment and recovery of the patient.

Final Considerations

This study presented very relevant results for the research question: the role of nurses in controlling and preventing the malnutrition of patients hospitalized in the intensive care unit?

The results showed that the nursing professional has an extremely important role in the positive result of nutritional therapy of patients admitted to the ICU and, as a professional member of the Multidisciplinary Team, it is necessary to have knowledge about the therapy as well as about the importance of its performance, in order to guarantee the improvement and quality of care provided.

The relationship between nutritional status and the development of pressure injuries was the most evidenced data in the research, this aspect pointed out the need for nurses to be aware of this risk factor for the development of injuries, using screening tools that favor, together with the nutrition team, the maintenance of the nutritional balance of patients, complications of the clinical picture with the appearance of these lesions.

Care for patients in Enteral Nutritional Therapy was also evidenced as the nurse's responsibility for effective therapy. The data demonstrated the need for training of this professional and the implementation of TNE protocols, so that occurrences and complications in the administration of the diet that can generate its interruption and consequently the malnutrition of the patient are avoided, that is, the inverse of what is proposed in the care of Nutritional Therapy.

Nursing diagnoses were also pointed out as important knowledge for nurses, because it shows that the implementation of a Nursing Process, which includes the stage of diagnoses, enables an improvement in the care of this professional. Considering that after the clinical diagnosis, treatment and recovery procedures can be established.

Finally, this study emphasized the need for continuous training of the nursing professional, regarding their participation in the multidisciplinary team and their role in Nutritional Therapy, in addition to highlighting the need for further studies on the subject.

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