COMPLICATIONS AND CARE FOR ELDERLY PEOPLE IN INTENSIVE CARE UNITS

INTERCORRÊNCIAS E CUIDADOS A IDOSOS EM UNIDADES DE TERAPIA INTENSIVA

INTERCURRENCIAS Y CUIDADOS A ANCIANOS EN UNIDADES DE TERAPIA INTENSIVA

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ABSTRACT

Objective: to analyze the clinical complications and the care provided to the elderly in Intensive Care Units. **Method:** this is a descriptive bibliographical study, of integrative review type, with search of articles published between the years 2007 to 2017 in the LILACS database and SciELO and VHL Libraries. Descriptive statistics was used in the analysis, by means of frequencies and percentages. **Results:** a total of 19 publications were selected. The elderly were more susceptible to infections, especially respiratory infections in the Intensive Care Units, increased stress and anxiety, stroke and acute renal injury, thus becoming more subject to safety incidents as a result of the time of hospitalization. There was a gap in the discussion of nursing care for the elderly hospitalized in these units, since few nursing publications emphasized this issue. **Conclusion:** the complications in the elderly in the Intensive Care Unit were related to complications of chronic conditions, such as infections, stress, anxiety, stroke and acute renal injury. This review showed that the intensive care provided to the elderly is still little discussed in the national scientific literature. **Descriptors:** Elderly; Intensive Care Units; Hospitalization; Intensive Care; Nursing; Review.

RESUMO

Objetivo: analisar as intercorrências clínicas e os cuidados prestados a idosos em Unidades de Terapia Intensiva. **Método:** trata-se de estudo bibliográfico, descritivo, tipo revisão integrativa com busca de artigos publicados entre os anos de 2007 a 2017, na base de dados LILACS e Bibliotecas SciELO e BVS. Utilizou-se no processo de análise estatística descritiva por meio de frequências e percentuais. **Resultados:** selecionaram-se 19 publicações. Apresentaram-se os idosos mais suscetíveis às infecções, principalmente respiratória nas Unidades de Terapia Intensiva, aumento do estresse e ansiedade, acidente vascular encefálico e lesão renal aguda, sendo assim, tornam-se mais sujeitos a incidentes de segurança, em decorrência do tempo de internação mais prolongado. Observou-se lacuna na discussão dos cuidados de enfermagem aos idosos internados nessas unidades, haja vista que poucas publicações de enfermagem enfatizaram o tema. **Conclusão:** relacionaram-se às intercorrências do idoso em Unidade de Terapia Intensiva as complicações de condições crônicas, tais como infecções, estresse, ansiedade, acidente vascular encefálico e lesão renal aguda. Demonstrou-se, por esta revisão, que os cuidados intensivos prestados ao idoso ainda são pouco discutidos na literatura científica nacional. **Descritores:** Idoso; Unidades de Terapia Intensiva; Hospitalização; Cuidados Intensivos; Enfermagem; Revisão.

RESUMEN

Objetivo: analizar las interurrencias clínicas y los cuidados prestados a ancianos en Unidades de Terapia Intensiva. **Método:** se trata de estudio bibliográfico, descriptivo, tipo revisión integradora con búsqueda de artículos publicados entre los años de 2007 a 2017, en la base de datos LILACS y Bibliotecas SciELO y BVS. Se utilizó en el proceso de análisis estadístico descriptivo por medio de frecuencias y porcentajes. **Resultados:** se seleccionaron 19 publicaciones. Se presentaron los ancianos más susceptibles a las infecciones, principalmente respiratoria en las Unidades de Terapia Intensiva, aumento do estrés y ansiedad, accidente vascular encefálico y lesión renal aguda, siendo así, se tornan más sujetos a incidentes de seguridad, en decurrencia del tiempo de internación más prolongado. Se observó una laguna en la discusión de los cuidados de enfermería a los ancianos internados en esas unidades, ya que pocas publicaciones de enfermería enfatizaron el tema. **Conclusión:** se relacionaron a las interurrencias del anciano en Unidad de Terapia Intensiva a las complicaciones de condiciones crónicas, tales como infecciones, estrés, ansiedad, accidente vascular encefálico y lesión renal aguda. Se demostró por esta revisió que los cuidados intensivos prestados al anciano aún son poco discutidos en la literatura científica nacional. **Descriptor:** Anciano; Unidades de Terapia Intensiva; Hospitalización; Cuidados Intensivos; Enfermería; Revisión.

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INTRODUCTION

Population aging is a worldwide phenomenon that stems from technical and scientific advances, especially in the area of health, as well as from cultural changes and improvements in living conditions, such as reduction of fertility rate, drop in infant and overall mortality, increased life expectancy, healthier eating habits, and improved health care. In Brazil, the aging process has occurred in an accelerated way due to the significant reduction of the fertility rate and increase of longevity. It is estimated that by 2050 the number of Brazilians over 60 will increase from 24 million to 66 million.¹

Although the aging process is not directly related to diseases and disabilities, chronic-degenerative conditions are common among the elderly and an increasing number of older people have presented more chronic health problems.²

Therefore, such conditions encompass both chronic noncommunicable diseases (CNCDs) and those diseases that can be transmitted and become chronic, as well as long-term mental disorders and physical disabilities. Thus, it becomes a population vulnerable to common problems, such as persistence and the need for permanent care, which require changes in lifestyle and health management.³

Thus, CNCDs are the main burden of disease in the country and are classified into four groups, namely cardiovascular diseases, cancer, chronic respiratory diseases and diabetes. CNCDs are the major health problem in Brazil and, according to data from the Global Burden of Disease Study 2015, they correspond to about 75% of the causes of death.⁴

So, the aging process can cause changes in some health indicators and, besides the decrease in mortality rates, there is an increase in morbidity with the appearance of CNCDs, which when aggravated can lead the elderly to hospitalizations in Intensive Care Units (ICUs). In this way, such situations are related with the greater vulnerability and frailty of the elderly, since these individuals generally have reduced capacity of physiological adaptation.⁵

In this sense, nurses' work in an ICU is characterized by complex managerial and assistance activities, which require technical and scientific competence, whose decision-making and adoption of safe behaviors is directly related to people's life and death.⁶

Therefore, the professionals providing care in these units should know the clinical complications of the assisted elderly so as to provide a of high-complex, adequate and safe nursing care to this population.

OBJECTIVE

- To analyze the clinical complications and the care provided to the elderly in Intensive Care Units.

METHOD

This is a bibliographic, descriptive study of integrative review type, which followed the following steps: 1) definition of the hypothesis or research question; 2) delineation of the inclusion and exclusion criteria; 3) definition of the information to be selected from the sample; 4) evaluation of the studies included in the sample; 5) interpretation of results; 6) presentation of results.⁷

The following research question was defined: What are the clinical complications and care reported in the national publications about the elderly hospitalized in Intensive Care Units?

Inclusion criteria were original articles, in full, in the Portuguese language and published between the years 2007 and 2017. Theses, dissertations, book chapters and works that did not answer to the research question were excluded. Duplicate articles in databases were considered only once.

Peer search was carried out independently, in months of July, August and September of 2017, in the Latin American and Caribbean Literature in Health Sciences (LILACS) database and SciELO and VHL libraries. The following descriptors were available in the DeCS: "Intensive Care Units", "Hospitalization", "Intensive Care" and "Elderly", crossed by means of the Boolean marker AND.

During the search, 282 articles were identified in LILACS, 15 in SciELO and 8 in the VHL, totaling 305 articles (Figure 1). No duplicate studies were identified. The selection was made considering as potentially eligible those papers whose titles and abstracts mentioned people aged 60 years or more and studies that were developed in ICUs.

After this step, 45 studies were obtained, whose texts read in full. Of these, 26 articles were excluded because they did not respond to the study question. Thus, the final sample was composed of 19 articles, as presented in Figure 1.

Figure 1. Flowchart of study selection according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2009). Teresina (PI), Brazil, 2018

After selecting the studies, the information was extracted. In this stage, we used a form developed by the authors of the study, divided into two parts: a) publication data (database, authors' name, study location, journal, year of publication, methodological design, level of evidence, results and conclusions); b) information about the study (profile of the elderly participant of the research, clinical complications, type of care provided to the elderly and conclusions of the study).

The level of evidence was evaluated according to the classification: level I - meta-analysis of multiple controlled studies; level II - individual study with experimental design; level III - study with quasi-experimental design, as a study without randomization with single group pre- and post-test, time series or case-control; level IV - study with non-experimental design, as descriptive correlational and qualitative research or case studies; level V - case report or data obtained

systematically, of verifiable quality or program evaluation data; level VI - opinion of reputable authorities based on clinical competence or opinion of expert committees, including interpretations of non-research based information.⁸

The Critical Appraisal Skills Program (CASP) (<http://library.kent.ac.uk/library/info/subject/healthinfo/atapprais.shtml>) instrument was applied to the included studies for evaluating their quality. This instrument consists of 10 items (maximum 10 points) and covers: 1) objective of the study; 2) adequacy of the methodological design to the research question; 3) justification of the methodological procedures; 4) selection criteria of the sample; 5) (6) relationship between researcher and participants; (7) ethical considerations; (8) rigor in data analysis; (9) adequacy in presentation and discussion of results; (10) value of the research: note of contributions, limitations and need of further research.

The studies were classified into two categories according to the obtained score: A) 6 to 10 points - studies of good methodological quality and reduced bias; B) up to 5 points - studies with satisfactory methodological quality but with increased risk of bias.

A descriptive statistical analysis was performed through the presentation of frequencies and percentages of quantitative synthesis. The extracted data were analyzed and the final synthesis was constructed in a descriptive manner.

RESULTS

A summary of the studies included in the review is presented in Figure 2, and it can be seen that the studies included in the sample were published between the years 2006 and 2017. Publications were found in 13 different journals, and the *Jornal Brasileiro de Pneumologia*, which published 3 articles (15.8%), stood out.

Regarding the geographic location of the studies, the Southeast region stood out, with 8 surveys (42.1%), followed by the South, with 5 articles (26.3%). No studies on the subject was identified in the North region.

There was prevalence of quantitative studies, with 18 (94.7%) articles, and with only one research had a qualitative approach (5.3%). Regarding the study type, 7 (36.8%) were descriptive, 7 (36.8%) cohorts, 3 (15.8%) longitudinal and 1 (5.3%) randomized clinical trial.

When assessing the quality of the included studies, all had concept A and, therefore, they were classified as good quality methodological research and with reduced bias.

Database/Author/Location/ Journal/Year	Design/Sample	Results/Conclusions	Level of Evidence	Qualidade do estudo
SciELO/Feijó CAR et al./Fortaleza/ Revista Brasileira de Terapia Intensiva/2006 ⁹	Descriptive retrospective/ 130 patients.	The main dysfunctions were the cardiovascular and respiratory ones. Sudden decline of organ/function almost always occurs due to acute diseases, and not because of age.	VI	A
LILACS / Latado AL et al./ Salvador/ Arquivos Brasileiros de Cardiologia / 2006 ¹⁰	Prospective cohort/ 299 patients.	Coronary artery disease was the leading cause of heart failure (49%). Patients with decompensated heart failure have elevated hospital mortality.	IV	A
BVS ENF / Ciampone JT et al. / São Paulo / Acta Paulista de Enfermagem / 2006 ¹¹	Prospective cohort/ 50 elderly people.	It was found that 84.0% had preexisting chronic disease. Similar needs of care and demand for nursing work were observed in elderly and non-elderly patients admitted to the ICU.	IV	A
LILACS / Myata DF et al. / Maringá / Ciência, Cuidado e Saúde / 2007 ¹²	Retrospective/ 117 patients.	71.6% of the elderly over 70 years old died, mainly due to cardiorespiratory system pathologies. Increasing age and medication use was associated with poor prognosis.	VI	A
SciELO / Stein FC et al. / São Paulo / Revista Brasileira de Terapia Intensiva / 2009 ¹³	Prospective/ 199 patients.	Assistance to elderly patients in the ICU requires new prognostic models to correct errors and improve care performance.	VI	A
LILACS / Caldeira VMH et al. / São Paulo / Revista da Associação Médica Brasileira /2010 ¹⁴	Prospective cohort/359 elderly people.	The refusal of the ICU patient occurs due to the presence of morbidity, age and the prognostic score of organic dysfunction, presenting high priority rate seems to be more efficient in the screening of patients who will have greater benefits of intensive care support.	IV	A
LILACS / Schein LEC; Cezar JA / Rio Grande / Revista Brasileira de Epidemiologia / 2010 ¹⁵	Cross-sectional descriptive/213 elderly people.	Of the 213 elderly people admitted, 88% had gone to the doctor's office in the last six months and 56% had been hospitalized in the last 12 months; half of them had come to the ICU unconscious due to clinical problems from the hospital's own ward; 147 had been submitted to mechanical ventilation; and 45% of the total group evolved to death.	VI	A
LILACS / Teixeira C et al. / Porto Alegre / Jornal Brasileiro de Pneumologia /2011 ¹⁶	Prospective cohort/213 elderly people.	The monitored elderly presented high mortality in the first two years. However, they have preserved the capacity to perform self-care even with reduced functional status.	IV	A
LILACS / Juncal VR et al. /São Paulo /Jornal Brasileiro de Pneumologia /2011 ¹⁷	Longitudinal/144 patients.	There were statistically significant associations between the diagnosis of sepsis and the variables: APACHE II score, ICU and hospital mortality, HR, mean arterial pressure, white blood cell count, hematocrit and antibiotic use. Patients with sepsis had worse outcomes. Hematocrit was the only variable capable of predicting the risk of death.	VI	A
LILACS / Veiga EP; Gomes L; Melo GF / Brasília / Revista Kairós / 2013 ¹⁸	Cross-sectional descriptive/40 patients.	The intensity of the stressors was higher in the elderly's perception. In view of this, the health professional must rethink their actions to guarantee the dignity of the human being, including the environment in which care is provided.	VI	A
LILACS / Guedes LPCM et al. / Brasília / Einstein / 2013 ¹⁹	Cross-sectional descriptive/355 elderly people.	Of the patients hospitalized in the study period, 23.2% died, presenting PaO2 on average 62.9% above the ideal, FiO2 on average 54.2% above what should be offered, in addition to a gas exchange 21.2% below what would be ideal.	VI	A

LILACS / Naue WS et al. / Porto Alegre / Jornal Brasileiro de Pneumologia / 2014 ²⁰	Randomized cross-over trial /34 elderly people.	The intervention group had a higher median amount of aspirated secretion, a greater increase in variation of the mean expired tidal volume and a larger increase in the mean variation in dynamic compliance.	II	A
LILACS /Palomba H et al. /São Paulo / Einstein / 2015 ²¹	Retrospective cohort/848 patients.	Elderly patients presented higher APACHE II score 22 (18-28) versus 19 (15-24). There were no differences observed in hospital mortality, although hospitalization time was higher among the elderly. Resuscitation of elderly patients with severe sepsis or septic shock was not associated with an increase in this mortality.	IV	A
LILACS / Leite MT et al. / Rio Grande do Sul / Estudos Interdisciplinares sobre o Envelhecimento / 2015 ²²	Qualitative/6 elderly people and 8 family members.	Two categories were elaborated: intensive care unit as an unknown and necessary space to maintain life and orientations of the health team that contribute to face the hospitalization in ICU. Discussing the aspects related to the hospitalization of the elderly contributes to qualify the nursing care in these units.	VI	A
LILACS / Pereira BJ et al. / São Paulo / Revista da Sociedade Brasileira de Clínica Médica / 2016 ²³	Observational prospective/ 98 elderly people.	Acute renal injury was observed in 35 (35.7%) patients and 24 (68.57%) required dialysis. Mortality in those with acute renal injury was 46% vs 11% of those without acute renal injury. Acute renal injury presented high mortality in elderly subjects submitted to elective surgery with high preoperative risk.	VI	A
BVS ENF / Toffoleto MC et al. / São Paulo / Revista Brasileira de Enfermagem / 2016 ²⁴	Retrospective cohort/315 elderly people.	The clinical process and procedure event was predominant (37.1%), with an association between adverse event and ICU stay. The identification of the events and associated factors support the prevention of occurrences due to the vulnerability of this age group.	IV	A
SciELO / Pedrosa IL; Freire DMC; Schneider RH / João Pessoa / Revista Brasileira de Geriatria e Gerontologia / 2017 ²⁵	Prospective cohort/205 elderly people.	Because there is a growing demand for hospitalization of the elderly in the ICU, the proposed construction of the instrument to assess the risk of prognosis of this elderly person, besides being innovative, is aimed at meeting the need for reality in Brazilian ICUs.	IV	A
SciELO / Barcelos RA; Tavares DMS / Minas Gerais / Acta Paulista de Enfermagem /2017 ²⁶	Retrospective/109 elderly people.	Length of stay, gender, re-hospitalization and age group were associated with increased harmless incidents and adverse events.	VI	A
SciELO / Sousa AFL et al. / Nordeste / Revista Brasileira de Enfermagem /2017 ²⁷	Cross-sectional/ 308 elderly people.	The clinical outcome of the elderly who acquire infection in the Intensive Care Unit is influenced by sociodemographic and clinical variables, with a greater impact on those aged 80 or over who have a higher death rate.	VI	A

Figure 2. Summary of the studies included in the review. Teresina (PI), Brazil, 2018.

Figure 3 shows the profile of the elderly hospitalized in the Intensive Care Units, included in the studied publications, and the length of hospital stay in these units. They were mostly younger elderly men, with average age ranging from 60 to 75.4 years. In relation to the length of ICU stay, the mean time ranged from 1 to 41 days.

Regarding the clinical complications and the type of care provided to the elderly hospitalized in the ICUs, of the 19 selected studies, 15 described the complications that affect the elderly during their stay in these services and 12 presented the care provided to these patients.

Profile of the elderly in ICU/Length of hospital stay	Complication	Type of care provided
Mean age was 72.2 years, ranging between 60 and 93 years, female. Higher prevalence of patients between the ages of 65 and 74 years. Length of stay: 8.2 ± 7.6 days . ⁹	Infections related to immunological deficiency and comorbidities.	Study did not address the type of care.
Male elderly (54%) with mean age of 69 years. It did not present length of stay. ¹⁰	Pulmonary embolism in 15%, sepsis in 5.7% and stroke in 4% of cases. Acute renal failure in 42% of patients.	Study did not address the type of care.
Equal distribution in relation to gender, both with 50.0%. The mean age was 70 years. Patients aged 60 years and over were the majority (66.0%). Length of stay: average of 1 to 5 days. ¹¹	No complications reported.	Observation at bedside, medications, routine hygiene, artificial airway care, change of position and laboratory investigations.
The age group of 70 to 79 years represented 40%. The mean age was 74.7 years. There was no significant difference between the genders. Length of hospital stay: 60 to 69 years - 14.4 days; 70 to 79 years - 18.9 days; ≥80 years - 13.1 days. ¹²	Cardiorespiratory complications.	Study did not address the type of care.
The mean age was 75.4 years, of which 58.8% were female. Length of stay: average of four days . ¹³	No complications reported.	Hyperglycaemic monitoring and mechanical ventilation.
The mean age was 66 years, being 52.6% female. Length of stay: 4.2-28.8 days . ¹⁴	Sepsis and systemic and organic dysfunctions.	Study did not address the type of care.
Male elderly, white, mean age 73 years; 50% married; 17% were not literate and the others had, on average, 4.6 years of schooling. Length of stay: 8.5 days, on average . ¹⁵	No complications reported.	Volume replacement, mechanical ventilation, vasoactive drugs.
Among the elderly, 66.4% were males, with a mean age of 74 years. Length of stay: 5 to 18 days, on average . ¹⁶	Respiratory infection 60%; septic shock - 31.8%; ventilatory support- 82%; dialysis support - 19.6%.	Study did not address the type of care.
Among the elderly, 55.2% were males, the mean age was 73.1 years. In the non-septic group, 36.3% were males, the mean age was 68.7 years. Length of stay: 9.3 ± 10.1 days, on average. ¹⁷	Respiratory, urinary, blood and abdominal infections.	Antibiotic therapy/corticoid therapy, vasoactive drugs and mechanical ventilation.
Among the 20 elderly participants in the study, the mean age was 67.8 years, 50% were males. Length of hospital stay: between 48 and ≤ 145 hours of hospitalization . ¹⁸	Increased stress levels.	Analgesia, sedation and anxiolytics to control pain and anxiety.
Of the inpatients, 61.5% were 60 years old or older. The mean age was 62.83 years, with a maximum of 101 years and a minimum of 13, of which 177 were males. Length of stay: mean of 11.15 days . ¹⁹	Pulmonary, circulatory, surgical, renal, neurological, gastrointestinal, metabolic complications and cancer.	Study did not address the type of care.
Male elderly, aged 64.2 years. It did not present the length of stay . ²⁰	Increased ECV after chest compression associated with hyperinflation.	Aspiration of secretions.
The mean age of the elderly was 80 years, the majority were males (56.2%). Length of stay: average of 15 days . ²¹	Respiratory and intra-abdominal infections.	Use of vasopressors and mechanical ventilation.
Elderly people in clinical unit after hospitalization in the ICU. It did not present the length of stay . ²²	Anxiety, worry, anguish, despair, pain, sadness, impotence and sorrow.	Study did not address the type of care.

<p>Elderly patients with a mean age of 70.7 years; 57.1% of males; and 88.8% were in postoperative elective surgery. Length of stay: more than 24 hours .²³ Of the elderly, 60.6% were men with an average age of 70.7 years. Length of stay: mean of 6.72 days .²⁴</p> <p>The mean age was 74.6 years, the youngest being 60 years old and the oldest being 96 years old. Length of stay: from 1 to 126 days, with an average of 11 days .²⁵ Of the surveyed elderly, 52.8% were males, with a predominance of the age group of 60 to 69 years (44.4%). Length of stay: median of four days, ranging from 1 to 103 days .²⁶ The study had a prevalence of women (181/58.8%), mean age of 71, with a maximum age of 97 years. Length of stay: 41 days or more .²⁷</p>	Acute renal injury, dialysis, hypotension, hypovolemic shock, CRP, bronchospasm, bronchial aspiration.	Nephrological monitoring, dialysis.
	Adverse events (clinical process/procedure, accidents with the patient, healthcare-associated infection, clinical administration of medication/fluids, organization management.	Careful evaluation of the elderly patient on the appropriate time for discharge and control of AD.
	No complications reported.	To stay alert to cardiac monitoring and glycemic control.
	Clinical procedure and process, care-related infection.	Adverse event investigation.
	Respiratory, urinary, bloodstream and surgical site infections.	To identify clinical risk factors, which may interfere in the reduction of invasive procedures and the epidemiology of infection in ICUs.

Figure 3. Profile of the elderly, length of hospitalization, complications and type of care. Teresina (PI), Brazil, 2018.

DISCUSSION

This review showed that the selected articles were mostly observational studies. The emphasis given to this design seems to derive from the aspects related to the phenomenon under study, and the quantitative approach responds more adequately to the questions that disturb the researchers investigating this area. However, investments in qualitative approach studies are needed, since subjectivity analysis can help understanding issues that permeate critical and concomitant care and the constant experience of complications.

The researches of this review were mainly concentrated in the Southeast and South regions. The greatest amount of research carried out in these regions is mainly due to the pioneering nature of the graduate courses, which support the research initiative, besides the fact that these regions concentrate the largest and most specialized intensive care services in the country. In view of the relevance of evidence-based practice to support qualified care and the need for studies to address the particularities of each region, further studies should be conducted in the other regions, especially in the Northern region, which did not have any study included.

With respect to the elderly participants of the studies, the average age was of younger elderly (60 to 79 years). There has been an increasing number of severe elderly patients who require intensive care and, given the high cost of this care, it is necessary to evaluate the factors related to their evolution. Therefore, this justifies the concern with the logistic support to the elderly in a critical situation, as well as the economic management and the effectiveness of this support to the elderly population.⁹ However, while the aging process alone is a risk factor for long-term mortality, this risk increases with the number of comorbidities, low cognitive function and the difficulty in performing routine activities.¹³

Nevertheless, a study aimed to know the profile of elderly patients hospitalized in the ICUs of a city of Rio Grande do Sul found that, in general, the older the age, the shorter the length of stay and the greater the occurrence of death. This is, as a rule, due to the severity of the disease, the existence of comorbidities, as well as poor general condition and reduction of the elderly's recovery capacity.¹⁵

In a study carried out in João Pessoa/PB, elderly people aged 80 years or older were 1.42 times more likely to progress to death than an elderly person in a lower age group.

Thus, age alone is not related to the worst prognosis, but other associated factors, such as severity of acute illness, comorbidities and functional status, may contribute to the worst prognosis.²⁵

It was observed predominance of men in ICU admissions.^{10,15-18-21,23-24,26} A longitudinal study on the clinical and laboratory characteristics and clinical outcome of septic and non-septic patients admitted to the ICU showed that the male sex was more associated with admission due to sepsis in this service. This research highlighted that hormonal differences between the sexes, as well as higher levels of anti-inflammatory mediators in women, may be causes of the higher incidences of sepsis and worse outcomes in males. It was also observed that the hematocrit value was the only laboratory marker that was related to the worse prognosis in septic patients.¹⁷

Therefore, this predominance of hospitalization among men is due to the male reluctance to seek medical care for both cultural issues and lack of conditions, due to the type of professional activities developed by them. In this sense, the low demand for health services among men may favor their hospitalization in ICUs due to the appearance of complications of chronic diseases, sometimes undiagnosed. Contrary to this, women are more stable in relation to their clinical conditions because they seek health services more frequently.²⁶ So, men have a higher frequency of hospitalization in these units because they use primary and secondary health care services less frequently.²⁵

In this context, it is extremely important to implement the lines of action of the National Policy for Comprehensive Care to Men's Health for recognizing that male diseases constitute real public health problems and thus enabling strategies and actions planned for this public so as to reduce morbidity and mortality rates due to preventable causes in this population. This will make it possible to improve quality of life expectancy.

In relation to clinical complications in the elderly patients admitted to the ICU, the studies highlighted the exacerbations of chronic conditions, such as cardiopulmonary and neurological complications manifested through infections, stroke, acute renal injury, hypotension, shock, anxiety, increased stress and susceptibility to harmless incident and adverse event.

A retrospective study carried out in Paraná revealed that among the elderly there was an increase in the number of infections acquired during ICU stay, in addition to increased

complications related to the stay in that environment, suggesting that these factors can lead to the death of these patients.¹²

Regarding the high mortality observed among the elderly in the ICU, a study pointed to the association of different factors, in addition to advanced age, the presence of preexisting morbidities, the current disease and the clinical severity, considering patient admissions out of therapeutic possibilities in these units.¹¹

A prospective cohort study developed in Rio Grande do Sul showed that approximately 60% of hospitalized patients developed respiratory infection during ICU admission, 31.8% developed septic shock, approximately 82% required ventilatory support and 19.6% dialytic support.¹⁶

A cross-sectional study conducted in the Federal District revealed that the elderly had a higher overall average of perceived stress in the ICU, especially among the 20% who used psychotropic drugs. It was also identified that the main stressors of the elderly in these environments were the presence of strange machines in their environment, perceiving hurry in the nurse, as well as the nursing team demonstrating to be more attentive to the equipment than to the patient, being constantly examined by doctors and nurses, the team using terms they do not understand, being waken up by the nursing and not receiving explanations about the treatment.¹⁸ Thus, the importance of qualified professionals in the ICU, with a view to a more humanized care, is highlighted here.

In analyzing the gas exchange parameters predicted and found in mechanically ventilated elderly patients, we found among the most prevalent complications the acute respiratory insufficiency, followed by pneumonia and stroke. It should be noted that the high prevalence of respiratory failure requires the need for further studies on the adequacy of inspired oxygen fractions, since acute respiratory insufficiency almost always evolves to mechanical ventilation and consequently to the administration of supplementary oxygen, which if misused, may lead to toxic effects.¹⁹

In a study that aimed to understand the experiences of the hospitalization process in an ICU, the elderly patients and their relatives reported that the greatest distress refers to the lack of information about the health status of hospitalized elderly people. So, there should be investment in professional training for the geriatrics and gerontology areas, which may contribute to increase the quality of care provided to this population.²²

A clinical study carried out in São Paulo showed that, of the patients who were in the postoperative period of elective surgery, 35.7% developed acute renal injury. Therefore, this leads us to conclude that this complication was associated with high mortality in the elderly submitted to elective surgery with high preoperative risk and previous chronic renal disease, being important the early identification of these risk factors and acute renal injury in these patients.²³

A retrospective cohort study revealed the factors related to the occurrence of adverse events in elderly ICU patients in nine ICUs of specialties in São Paulo, and it was found that such complications were moderate and severe, related to clinical process/procedures that corresponded to 37.1%, followed by accidents with the patient (31.1%) and infection associated with health care (25.5%). These events and associated factors in the elderly should be identified to support the prevention of these occurrences in view of the vulnerabilities of this age group.²⁴

The demographic and clinical factors associated with safety incidents (SI) among elderly patients in intensive care units were investigated in an ICU of a public hospital in the interior of Minas Gerais, and the results indicated a higher prevalence of harmless incident (HSI) on documentation, that corresponded to 88.1%, and adverse event (AE) on process/procedure, that represented 77.4%. For clinical practice, it has been suggested the search for strategies to reduce HSI on documentation and AE on process/procedure, since, among the types of SI, these have been a priority and can have serious consequences for patients.²⁶

A cross-sectional study conducted in an ICU of a clinical reference hospital in the Northeastern region of Brazil showed that the clinical outcome of the elderly patients who acquired infection in these units was influenced by sociodemographic and clinical variables, especially among the older elderly, among whom there was a higher death rate.²⁷

Among the studies included in this review, one article revealed the relationships with the length of stay of the elderly in the ICU, which varied from 1 to 41 days. It is worth noting that, for elderly patients, the longer the stay in these units, the greater the number of complications acquired, which can lead to the death of these patients, related to the presence of infection on admission and to contraction of infection in the ICU. Therefore, the higher mortality in the elderly in these

units may be due to the presence of serious diseases, not to age.¹²

Thus, in the elderly patients admitted to the ICU, changes in morphological and physiological variables should be considered, as they have repercussions on the various organ functions, with emphasis on immunity, which makes them more vulnerable to infections and may cause an prolongation of the hospitalization, the use of invasive procedures and increased expenses with treatment, also increasing the chances of death.²⁷

Also, the length of stay of the elderly over six days in the ICU was a risk for unfavorable outcome, considering this variable as a risk factor for worse prognosis among the elderly in ICU.²⁵

A prospective study carried out for five months in the general ICU of a tertiary hospital showed that the main risk factors associated with death in the elderly were related to their own advanced age, to the evaluation of daily activities, to high glycemia and to the need for invasive mechanical ventilation on admission to this unit.¹³

We verified that, the longer the length of stay in the ICU, the greater the chances of occurring adverse events, since each day of stay increases in 10.0% the chance of a patient suffering from AE. It is, therefore, recommended that the elderly be evaluated for the best time to be discharged from the ICU, staying in this unit only the minimum time necessary as a prevention for the occurrence of adverse events, cost reduction and impact on family members.²⁴

Regarding nursing care for the elderly in ICU, only six articles discussed this subject.^{13,15,22,24,26-27} When comparing the nursing care needs of elderly and non-elderly patients in the ICU according to the Nursing Activities Score (NAS), we verified that 100.0% of patients received bedside care and continuous or active observation for four hours or more on some shift, such as medication and routine hygiene procedures, performing routine administrative and managerial tasks requiring less than two hours (99.7%), respiratory support, support and caring for family members and patients for about one hour (99.4% each), followed by quantitative measurement of urinary output (88.8%) and drainage care (87.3%).¹¹

A study on the risk factors of the elderly in ICU revealed that hyperglycemia and use of mechanical ventilation were aggravating factors in these patients, which guides for

continuous monitoring for reversing it as soon as possible.¹³

A cross-sectional study carried out in Rio Grande do Sul with 213 elderly patients suggested that the ICUs should have these patients as a population with different needs and that they should be treated as so. Also, criteria for admission should be elaborated based on the severity of the cases to reduce the overcrowding of this unit, ensuring this care to those who in fact need it. In addition, the Family Health Strategy teams should be motivated to identify the elderly at risk of hospitalization and to periodically monitor their health status, as well as to promote integration among the different levels of health care, with the objective of monitoring elderly patients who were discharged from the ICU. Home care should also be encouraged, including home hospitalization, with identification of families that demonstrate capacity and interest in this type of care, and, finally, research should be conducted that makes it possible to know the elderly better in order to improve their survival.¹⁵

Among the selected publications, two articles have raised issues related to the occurrence of adverse events in elderly patients admitted to the ICU, seeking to solve problems related to health care. Thus, one can perceive the contribution to a more assertive practice, focusing on the factors related to hospital infection among the elderly in the ICU that need to be early identified and treated because they influence their stay in this environment and their clinical outcome.^{24,26}

Therefore, systematized preoperative care with identification of risk factors can directly interfere in the reduction of invasive procedures and in the epidemiology of infection in ICUs. A Brazilian study evidenced that, in Brazil, there is a research gap in relation to hospital infection involving the elderly.²⁷

Thus, the vulnerability of the elderly is unquestionable and deriving from the reduction of the common physiological capacity in this age group, as well as to the increase in non-communicable chronic diseases, which may lead to worsening of the clinical picture.

In this sense, it is important to emphasize the importance of effective nursing participation in care for the elderly, both in primary care, through health promotion and prevention actions, and in pre-hospital and in-hospital care for the elderly, with special attention to preexisting diseases and

observation of the factors that may affect the occurrence of complications.

Thus, few studies have discussed the nursing care provided to these patients in these units, which leads to the existence of a gap in the publications on the subject, as some articles describe the complications, but do not discuss the recommended or implemented care, which compromises the caring process, the main object of nursing work.

The limitations of this study consisted of the inclusion of only Brazilian studies, in the Portuguese language, which may not portray the reality of other countries.

CONCLUSION

Changes deriving from aging, combined with the worsening of clinical conditions resulting from non-communicable chronic diseases, have led more and more elderly people to be hospitalized in ICUs, most of whom are young elderly and males. The elderly in these units are more susceptible to infections, especially respiratory infection, increased stress and anxiety, stroke and acute kidney injury, with greater vulnerability to safety incidents due to the longer length of stay in these units.

There are some gaps in the literature that address the investigation of complications and nursing care to the elderly hospitalized in ICUs, especially in states in the Northern region of Brazil. There is also need of studies with other methodological designs that contribute to the robustness of the research and to the professional practice. It is also necessary that nurses, as members of the multidisciplinary team and for providing direct care to critical elderly patients, invest in the discussion of care to this public so that they guide other professionals and promote advancement in the scientific dimension of nursing.

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