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Review Article

Nursing specialized in the care of the person in critical situation: a scoping review

Enfermería especializada en el cuidado de la persona en situación crítica: una revisión del alcance

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Resumen

Marco Contextual: la complejidad del cuidado a la persona críticamente enferma fundamenta la necesidad de áreas de especialización en Enfermería que doten a los enfermeros de mayores competencias, posibilitando la prestación de cuidados individualizados y especializados.
Objetivo: mapear el conocimiento sobre el impacto de la enfermería especializada en el cuidado de personas en situación crítica.
Metodología: se realizó una revisión de alcance, propuesta por el The Joanna Briggs Institute, segundo los siguientes pasos: definición del objetivo, pregunta de investigación y criterios de inclusión; investigación, selección y análisis de publicaciones; Resumen de Resultados. Las bases de datos incluidas fueron: EBSCOhost (MEDLINE, CINAHL Complete, eBook Collection), SciELO y Science Direct. La investigación abarcó publicaciones entre 2017 y 2021, siendo el corpus de la revisión compuesto por cinco artículos científicos.
Resultados: los estudios describieron los efectos positivos de la atención de enfermería especializada en el contexto del cuidado de la persona en situación crítica y, en consecuencia, de los servicios a los que está adscrita.
Conclusión: la atención de enfermería especializada en el contexto del cuidado de la persona en situación crítica aumenta los niveles de satisfacción general de la persona, permite la identificación oportuna de complicaciones y reduce el tiempo de estancia, los costos asociados a la atención y el tiempo de inicio del tratamiento.

Palabras clave: evaluación del impacto en la salud; enfermería médico-quirúrgica; cuidados intensivos; enfermedad crítica

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Introdution

Nursing, as a discipline, provides care to human beings, whether healthy or ill, throughout the life cycle, and to the social groups in which they are integrated, in order to maintain, improve, and recover health, helping them achieve their maximum functional capacity as quickly as possible (Decreto-Lei n.º 161/96). Thus, in situations of alteration of the health-disease binomial, nurses focus their intervention on the complex interdependence between person and environment, nurturing a holistic view of the person/family to promote a therapeutic relationship that favors positive nursing care outcomes (Silva, 2012).

Concurrently, with the increase in life expectancy in Portugal, specialized nursing with advanced competencies gains emphasis, becoming a national trend and a growing need in healthcare, seeking to respond to an increasingly aging population with chronic diseases and multiple comorbidities (Lopes et al., 2018).

In this way, specialization in nursing is seen as a complement in the construction of identity, an expansion of learning, and a deepening of knowledge and skills in a specific area (Pires, 2012), with competencies being the effective application of knowledge and abilities, demonstrative of a level of professional performance (Regulamento n.º 140/2019).

Assuming that the nurse builds their professional competence based on their experience, the environment they are in, the opportunities that arise, their motivation, theoretical knowledge, and personal characteristics, while also mobilizing knowledge for each situation and/or context (Correia, 2012), it is imperative that the specialist nurse (SN) demonstrates competencies in the management of quality and care provided, ethical and legal responsibility, and the development of professional learning, competencies that are the basis of specialized nursing training (Regulamento n.º 140/2019). Moreover, it is the SN who provides highly qualified care and demonstrates competencies such as observation, data collection, and continuous systematic and systematized data search, with the aim of understanding the situation of the person and their family under care, predicting and early detecting complications, and ensuring precise, concrete, and efficient intervention (Regulamento n.º 361/2015).

In parallel, the quality standards for specialized nursing care for the Person in Critical Condition define these care practices as highly qualified, provided continuously to the person with one or several vital functions at immediate risk, thereby maintaining vital functions, preventing complications, limiting future disabilities, and maximizing the person's recovery (Regulamento n.º 361/2015). A person in a critical illness situation and/or organ failure is “someone whose life is threatened by failure or imminent failure of one or more vital functions and whose survival depends on advanced means of surveillance, monitoring, and therapy” (Regulamento n.º 361/2015).

In this line of thought, the person in a critical condition requires specific, continuous, and specialized care. This aspect must take into account the increasing complexity of equipment, techniques, and procedures necessary for their care, and justifies the need for competencies in this area by nurses (Silva, 2012), specifically Medical-Surgical Nursing Specialists (MSNS).

In this context, assuming the complexity of caring for the critically ill person and the need for individualized and specialized nursing care, the objective of this study is to map the knowledge about the impact of specialized nursing on the care of the person in a critical condition.

Methodological review procedures

Thus, this study, adopting the scoping review methodology, aims to identify the impact of specialized nursing on the care of critically ill patients. The scoping review is presented as a model of literature review and is described as a technique for mapping the literature in the researcher's area of interest, tending to address broader topics, identifying the relevant literature on the subject under study, and used to investigate key concepts underlying a research area, provide a map of the available evidence, and identify gaps in the knowledge base/unclear specific issues (Arksey & O'Malley, 2005). For its development, the guidelines of the methodology were followed, taking into consideration the recommendations proposed by The Joanna Briggs Institute (JBI) and in accordance with the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (The Joanna Briggs Institute, 2015; Tricco et al., 2018). Having established the objective of this study, using the mnemonic PCC, where "P" (population) refers to critically ill patients, "C" (concept) refers to the specialization of nursing care, and "C" (context) refers to care delivery, the following research question was formulated: What is the impact of specialized nursing on the care of critically ill patients?

Regarding the participants, studies within the scope of critically ill patients were included. Concerning the concept, studies developed within the scope of the impact of nursing care were included. Regarding the context, studies conducted within the scope of specialized nursing care were integrated.

As for the search strategy and identification of studies, studies developed on the topic, including quantitative, qualitative, randomized controlled trials, case studies, experimental and quasi-experimental or observational studies, were used. All literature reviews, reports, theses, or dissertations, among others, considered relevant to the research question were also considered.

Regarding the language of publication, articles written in portuguese and english, from 2017 to 2021, were included, with the search being conducted in the databases on February 25, 2022. The authors opted to limit the search to this time frame to ensure the inclusion of recent, updated, and relevant literature. The following inclusion criteria were defined: articles published between 2017-2021; scientific articles indexed in the EBSCOhost, SciELO, and Science Direct databases; publications in portuguese and english; studies conducted with samples of adults (19 years or older) and all types of studies.

The search was conducted in scientific databases, namely, EBSCOhost (which includes the Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and eBook Collection), SciELO, and Science Direct.

As a search strategy, the boolean operators AND or OR were used to combine the following terms from the Health Sciences Descriptors (DeCs) and Medical Subject Headings (MeSH): Impact/impacto; critical care/cuidado crítico; nurse specialist or specialist nurse/especialistas em enfermagem ou enfermeiro especialista (table 1).

Table 1 Descriptors

Descriptors	Number of articles found
Impact/impacto; critical care/cuidado crítico; nurse specialists/enfermeiros especialistas or specialist nurse/especialista em enfermagem	319

((impact) AND (critical care) AND ((nurse specialists) OR (specialist nurse)))	

Based on the described strategy, we accessed 319 articles through the scientific databases, of which 279 articles were from EBSCOhost (MEDLINE, CINAHL Complete, eBook Collection); 34 articles from SciELO; and 6 articles from Science Direct, all of which met the inclusion criteria.

The following were excluded: two articles due to duplication; and 305 articles because the title content did not fit the inclusion and exclusion criteria defined by the authors; 1 article due to the content of the abstract, and 1 due to lack of access to the full text.

In total, 10 articles were analyzed, which constituted the final sample of this scoping review.

The process of identification, screening, and selection of studies for this review is presented in the flowchart (figure 1), following JBI recommendations and according to the checklist adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Three independent reviewers evaluated the studies identified through the electronic search, using predefined criteria. Disagreements among reviewers were resolved through discussion and subsequent consensus. We used the Rayyan® platform as an aggregator to facilitate the organization and selection of articles. No other tools were used for data collection, analysis, or processing.

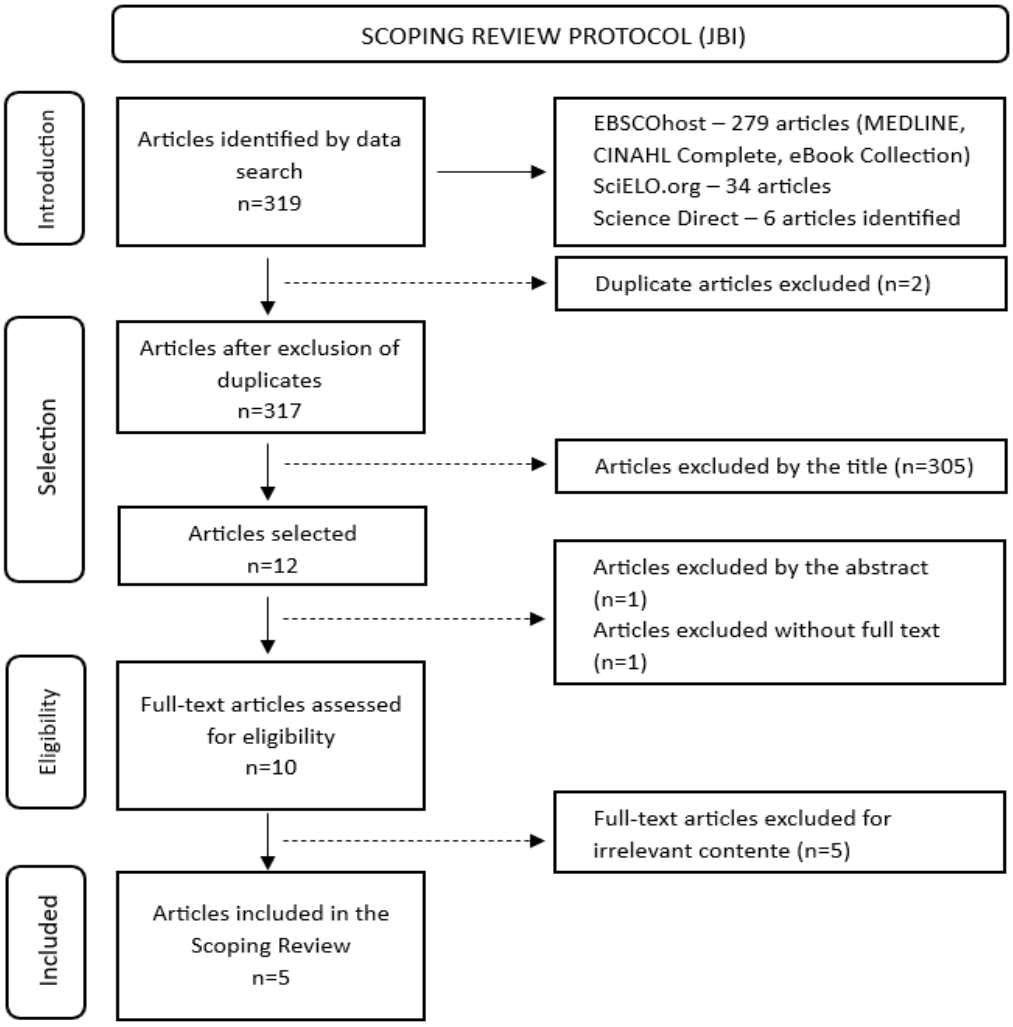

Figure 1Flowchart of the study selection process (PRISMA)

Results

For data extraction, tables were created that include:
article title, authors, year, methodology, and main conclusions (table 1 and table 3).

Table 2 Summary table of article identification

Code	Title	Authors	Year	Country
A01	Impact of having a certified nurse specialist in critical care nursing as head nurse on ICU patient outcomes.	Tomohide Fukuda, Hironori Sakurai, Masanori Kashiwagi.	2020	Japan
A02	Clinical Nurse Specialist: A Critical Member of the ICU Team	Erika R. Gabbard; Deborah Klein; Kathleen Vollman; Tracy B. Chamblee; Lisa M. Soltis; Mary Zellinger	2021	United States of America
A03	Taking outcomes to the next level: The clinical nurse specialist as a partner in changing practice	Andrea Slivinski; Tracy Philips; Jeanie Bollinger; Vallire Hooper	2020	United States of America
A04	The effectiveness of the role of advanced nurse practitioners compared to physician-led or usual care: A systematic review	Maung Htay; Dean Whitehead	2021	United Kingdom
A05	What is the impact of professional nursing on patients' outcomes globally? An overview of research evidence.	Samantha Coster, Mary Watkins, Ian. J Norman	2017	United Kingdom

Out of the 5 selected studies, all were published in English between the years 2017 and 2021, classified as retrospective cohort (1), literature review (2), experimental (1), and systematic review of primary research evidence (1). In the conducted research, there is a lack of scientific literature on the studied topic globally, scarcity at the European level, and no national studies were found.

Table 3 Summary table of selected articles for analysis

Code	Methodology	Results
A01	Retrospective cohort study	Clinical Nurse Specialists (CNS) are defined as advanced practice nurses. Having a CNS as the nurse leader in the ICU may have helped improve patient outcomes by leveraging advanced nursing management skills.
A02	Literature review guided by experts from the Society of Medicine and the American Association of Critical Care Nurses	The care provided by Clinical Nurse Specialists in advanced practice roles in the ICU is a unique and valuable approach for organizations striving to promote evidence-based practice and drive quality through an interprofessional approach. The valuable contributions of CNSs, who efficiently and effectively care for the needs of patients, physicians, and organizations, improve patient outcomes and optimize cost prevention strategies, further reducing economic demands on the healthcare system.

A03	Experimental study	The role of the Clinical Nurse Specialist is often underutilized or improperly utilized due to wide variations in practice standards and a lack of understanding about their role. As an Advanced Practice Registered Nurse (APRN), the CNS role is an invaluable part of the healthcare delivery team, driving evidence-based and innovative solutions to common clinical practice issues, and enhancing the standard of care while maximizing cost-effectiveness. Executive leaders need to understand the roles of APRNs within organizational structures and advocate for their integration into hospital settings to contribute to safe, effective, and efficient care delivery. Leaders should seek to leverage the advanced knowledge and clinical skills of CNSs to optimize nursing, patient, and organizational outcomes.
A04	Systematic review of primary research evidence	Positive impact of CNS on clinical outcomes and related services such as patient satisfaction, waiting times, chronic disease management, and cost-effectiveness, especially when compared directly to care led by generalist physicians/nurses – in primary, secondary, and specialized care settings.
A05	Literature review	A sufficient number of nurses with specialized training working in acute care areas can reduce the risk of patient mortality, although the evidence is confined to studies in developed countries and is not sufficiently robust to draw definitive conclusions. There is moderate evidence that well-trained nurses produce health outcomes equivalent to physician-led care for individuals with chronic health conditions, particularly those accessing primary care. Nurse-led care may be more effective than medical care in promoting patient treatment adherence and satisfaction.

Discussion

Specialization in nursing leads to gains in healthcare and positive budgetary impacts, supported by ample international evidence that Clinical Nurse Specialists (CNS) produce health gains, institutional benefits, improvements in health, management indicators, and efficiency. Moreover, they also contribute positively to professional development by encouraging continuous education (Lopes et al., 2018).

The analyzed studies have shown that the presence of CNS in units dedicated to critical care has a significant impact on improving care delivery. Their enhanced skills are utilized to enhance patient care, particularly in managing complex pathologies, contributing to complication prevention, promoting health, providing end-of-life care, leading quality initiatives with multidisciplinary teams, always in partnership with families (Gabbard et al., 2021; Slivinski et al., 2020). These professionals are equally capable of identifying improvement opportunities, contributing to the development of innovative solutions, and promoting evidence-based practice (ibid).

Furthermore, the impact of the role of Medical-Surgical Nursing Specialists was highlighted during the COVID-19 pandemic as leaders, consultants, and/or collaborators in designing and implementing protocols, developing strategies, and peer training (Gabbard et al., 2021). Other authors support this idea, pointing out that CNS-MSN are at the forefront of planning and educating professionals involved in the practice and care of COVID-19 patients, as well as in developing guidelines, policies, and workflows, highlighting the impact of CNS-MSN roles and their contributions to healthcare (Posa-Kearney et al., 2021).

Thus, the intervention of CNS-MSN proves important in improving patient care, service cost-effectiveness, efficiency, overall care quality satisfaction, reduction in diagnostic and treatment initiation times,

consequently reducing hospitalization duration, costs, and complications (Coster et al., 2017; Gabbard et al., 2021; Htay & Whitehead, 2021).

The care provided by CNS-MSN in specialized settings allows for a reduction in invasive mechanical ventilation time (Henneman et al., 2002, as cited in Gabbard et al., 2021).

There are also numerous studies documenting the impact of CNS-MSN in reducing hospital-acquired pressure injuries (Fabbruzzo-Cota et al., 2016, as cited in Gabbard et al., 2021), as well as in preventing infections, specifically central line-associated bloodstream infections (Richardson & Tjoelker, 2012, as cited in Gabbard et al., 2021), and reducing urinary tract infections associated with urinary catheters in ICUs (Colwill et al., 2014, as cited in Gabbard et al., 2021). Slivinski et al. (2020) also found that CNS-MSN implemented evidence-based practice measures that reduced infections caused by urinary catheter use, reducing their incidence by 21%, and also decreased central line-associated bloodstream infections from 19.57% to 14.84%.

In another study, it was found that the proportion of CNS-MSN positively influences the prevalence rate of pressure injuries, the rate of central line-associated bloodstream infections, and the rate of ventilator-associated pneumonia (Krapohl et al., 2010). Also, Kelly et al. (2014) found that despite critically ill patients on mechanical ventilation and high mortality rates, it is possible to improve outcomes by investing in a better work environment with specialized nursing professionals.

In the study by Slivinski et al. (2020), the actions of MSNS were recognized through the creation of a sepsis protocol, resulting in a 70% reduction in time to initiation of antibiotic therapy, mortality from septic shock (reduced from 25% to 30% in recent years), as well as a decrease in Chronic Obstructive Pulmonary Disease (COPD), which has been an area of interest and intervention focus for MSNS. They achieved a reduction in hospital readmissions due to decompensation (18% to 21%) by stratifying the risk of unplanned readmission or death within 30 days after hospital discharge. These authors also highlight the contribution of MSNS in implementing fall prevention strategies, resulting in a 33% reduction in falls across the entire hospital organization (Slivinski et al., 2020). Additionally, Krapohl et al. (2010) found an association between the percentage of MSNS in an ICU and a low incidence of inpatient falls. In relation to the MSNS role as the chief nurse in an ICU, Fukuda et al. (2020) found a reduction in mortality rates among hospitalized individuals, as well as a decrease in the number of patients on invasive mechanical ventilation. Similarly, Soltis (2015), as cited in Gabbard et al. (2021), asserts that the contribution of MSNS has positively affected the number of patients extubated within 6 hours post-cardiothoracic surgery, reducing ICU length of stay by 2.2 days and lowering costs and readmissions. Krapohl et al. (2010) also observed a statistically significant relationship between the proportion of MSNS and a reduction in hospitalization days.

Woo et al. (2017) state that involvement of MSNS improves patient outcomes, resulting in reduced hospital stay days, treatment duration, mortality, and costs, while increasing patient satisfaction. Landsperger et al. (2016) affirm a decrease in mortality rates for patients under MSNS care in the ICU, as well as a reduction in overall hospital stay duration.

Limitations of the study

This review included only virtual libraries, studies available for online consultation, articles published in english and portuguese, mostly focused on defining/validating competencies of the Medical-Surgical Nursing Specialists, pathologies, and guideline development/validation. Therefore, it would also be useful to broaden the context and include articles in other languages. Grey literature was also not included, which could have enriched our review.

Conclusion

This scoping review reinforced the impact of specialized nursing care in the context of caring for critically ill individuals. The included studies highlighted that the interventions of Medical-Surgical Nursing Specialists are visible in improving patient care, resulting in increased satisfaction, reduced complications, shorter hospital stays, and lower healthcare costs. This underscores the value of the Medical-Surgical Nursing Specialists role as a consultant and change agent within healthcare systems.

Regarding implications for nursing, it demonstrates that Medical-Surgical Nursing Specialists interventions impact infection prevention, intervention, and control of device-related infections, reduction of pressure injuries, decreased time and number of patients on invasive mechanical ventilation, and consequently, shorter hospital stays. This creates opportunities to decrease mortality rates associated with critical situations and achieve health gains. In other words, it shows the efficiency and effectiveness of Medical-Surgical Nursing Specialists interventions, aligning with continuous quality improvement systems in nursing practice.

However, measuring health gains resulting from these nurses' practice remains limited, thus hindering the full understanding of their impact. Finally, given the lack of studies in this area, this scoping review concludes that it is useful to justify the need for developing assessment tools for specialized care, aiming for better quantification of health gains directly related to nursing care provided by Medical-Surgical Nursing Specialists. This will further fuel the discussion on critical care by Medical-Surgical Nursing Specialists and continue to enhance the quality and dissemination of nursing research.

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