Intensive care unit context: analysis of scientific production on nursing

Contexto da unidade de terapia intensiva: análise da produção científica da enfermagem

Contexto de la unidad de cuidados intensivos: análisis de la producción científica de enfermería

Alcides Viana de Lima NetoI, Andréa Tayse de Lima GomesII, Cecília Olívia Paraguai de Oliveira SaraivaIII, Suzane Gomes de MedeirosIV, Mayara Lima BarbosaV, Viviane Euzébia Pereira SantosVI

Abstract: Objective: to characterize the dissertations and theses available in the Catalog of Theses and Dissertations of the Brazilian Nursing Association from research on the context of the intensive care unit. Method: bibliometric research, developed from data extracted through an instrument composed of indicators collected from dissertations and theses available in the catalog of volumes XIX (2001) to XXXIV (2014). All dissertations and theses produced by nurses from research in intensive care units were included. Results: research related to nursing care and procedures stood out (46; 18.9%); workload, stress, and sizing of nursing staff (28; 11.5%) and systematization of nursing care and process (20; 8.2%), both in the intensive care unit. Conclusion: The research analyzed reveals a profile in which most studies presented a descriptive-quantitative design and focused on the care and procedures performed in intensive care units. Descriptors: Intensive Care Units; Nursing; Research; Critical Pathways; Critical Care

Resumo: Objetivo: caracterizar as dissertações e teses disponíveis no Catálogo de Teses e Dissertações da Associação Brasileira de Enfermagem oriundas de pesquisas sobre o contexto de unidade de terapia intensiva. Método: pesquisa bibliométrica, desenvolvida a partir de dados extraídos por meio de um instrumento composto por indicadores coletados das dissertações e teses disponíveis no catálogo dos volumes XIX (2001) ao XXXIV (2014). Incluíram-se todas as dissertações e teses produzidas por enfermeiros, provenientes de pesquisa em unidades de terapia intensiva. Resultados: destacaram-se as pesquisas relacionadas aos cuidados e procedimentos de enfermagem

1Enfermeiro. Mestre em enfermagem. Universidade Federal do Rio Grande do Norte. Natal, RN, Brasil. E-mail: alcides.vln@gmail.com. ORCID: https://orcid.org/0000-0001-6191-9465.
2Enfermeira. Mestre em enfermagem. Universidade Federal do Rio Grande do Norte. Natal, RN, Brasil. E-mail: andrea.tlgomes@gmail.com. ORCID: https://orcid.org/0000-0003-0505-5783.
3Enfermeira. Doutora em enfermagem. Universidade Federal do Rio Grande do Norte. Natal, RN, Brasil. E-mail: cecilia_olivia@yahoo.com.br. ORCID: https://orcid.org/0000-0003-4225-5194.
4Enfermeira. Doutora em enfermagem. Universidade Federal do Rio Grande do Norte. Natal, RN, Brasil. E-mail: suzanegomesm@gmail.com. ORCID: https://orcid.org/0000-0002-4196-4557.
5Enfermeira. Doutora em enfermagem. Professora da Faculdade de Ciências Médicas do Centro Universitário UNIFACISA. Campina Grande, PB, Brasil. E-mail: mayaralimabarbosa@gmail.com. ORCID: https://orcid.org/0000-0002-8063-7903.
6Enfermeira. Doutora em enfermagem. Professora da Universidade Federal do Rio Grande do Norte. Natal, RN, Brasil. E-mail: vivianeeepsantos@gmail.com. ORCID: https://orcid.org/0000-0001-8140-8320.
Introduction

Nursing, considered a science, has a contemporary tendency to increase the production of research that contributes to the practice of evidence-based care. Increasingly, nurses are required, in addition to technical skills, the ability to understand the scientific context and develop research in different professional practice scenarios.¹

For having a specific field of knowledge, the profession has evolved historically and has gained space in different thematic areas and lines of research. It has contributed to the qualification of researchers in these fields, able to perform activities in the different contexts that present the insertion of these professionals, in addition to qualifying the care offered to patients.²

Thus, it is known that a large part of Brazilian research is developed in the stricto sensu postgraduate programs, which offer masters and doctoral courses in academic and professional modalities. Both are monitored by the Coordination for the Improvement of Higher Education Personnel (CAPES), an agency linked to the Ministry of Education. The academic master’s and
doctoral courses have a profile aimed at training for academic careers and research. Professional masters and doctorates, on the other hand, have a clear goal of training for the practice of advanced and transforming procedures to meet social, organizational or professional demands and the labor market. The latter, offered in smaller numbers, however expanding in Brazil.

According to data from CAPES, in the area of nursing evaluation, there are 78 programs, distributed in all Brazilian regions, with greater concentration in the Southeast and Northeast regions, with 32 and 20 respectively, which represents 66.67% of the total. In these programs, 116 courses are developed, of which 52 are academic master's degrees, 38 academic doctorates, 24 professional master's degrees, and 2 professional doctorates.

Regarding to the lines of research, the following stand out: theoretical and philosophical foundations of health and nursing care, technology in health and nursing, ethics on health and nursing and nursing history, health and nursing care process, health and quality of life. in the organizational field, policies and practices in health and nursing, policies and educational practices in nursing, social production and work in health and nursing, health and nursing service management and information/communication in health and nursing.

Among these research lines, several are carried out in the intensive care unit (ICU) environment, which is the critical area for the admission of critically ill patients, who require continuous specialized professional attention, specific materials, and technologies necessary for diagnosis, monitoring, and therapy. The ICU, due to its different complexity from other sectors, requires a different dimensioning of nursing professionals, as well as training for quick and immediate decision-making in situations that demand critical and reflective reasoning to solve certain problems.

Therefore, it is important to develop studies that offer a profile of the knowledge that has been produced about intensive nursing care in the context of Brazilian postgraduate courses.
to identify the main problems investigated, the evidence produced on the subject and the research gaps still to be explored. In this way, subsidies can be offered for the knowledge of this reality, as well as, a basis for the development of several investigations.

Thus, the present study aimed to characterize the dissertations and theses available in the Catalog of Theses and Dissertations of the Brazilian Nursing Association arising from researches on the context of the intensive care unit.

Method

It is bibliometric research, developed from the analysis of dissertations and theses available in the Catalog of Theses and Dissertations (CEPEn) of volumes XIX (2001) to XXXIV (2014). This time segment was chosen due to the availability of the catalogs of abstracts on the website of the Brazilian Nursing Association (ABEn). For its accomplishment, a research protocol was elaborated based on the theme; goal; guiding question; search strategies; selection of studies; data collected; critical evaluation of studies and data synthesis. No keywords were used since all volumes of the catalog were read in full for the selection of theses and dissertations.

The search was conducted guided by the following question: What are the characteristics of the dissertations and theses available at CEPEn - ABEn involving researches in intensive care units? For its operationalization, the strategy of the initial reading of all abstracts of the theses and dissertations available in the online version of the catalog was adopted. Based on this initial reading, a list was prepared using Microsoft Excel® software version 2010 containing the title, authors, higher education institution (HEI) and year of the final presentation. This list served to guide the future search for documents in full in the CAPES Theses and Dissertations Catalog. It is important to highlight that the search was carried out by two independent researchers, both students of the academic master's course in nursing at the Federal University of Rio Grande do Norte.
All dissertations and theses, components of CEPEn - ABEn, produced by nurses, from research in intensive care units, were included. Dissertations and theses with incomplete abstracts were excluded, those that did not respond to the collection indicators in their entirety; dissertations and theses with full text unavailable for download and those that were built from literature reviews. It should be noted that there was no disagreement during the entire process of searching and selecting documents.

After analyzing each thesis and dissertation in full, the following indicators were collected: academic level (master's or doctorate); educational institution; year of publication; location of development of the study (region and state); study object; methodological design: type of study, approach (quantitative, qualitative or mixed); level of evidence according to the Joana Briggs Institute: I - experimental studies; systematic reviews of experimental studies; II - quasi-experimental studies; III - observational studies; IV - descriptive studies; V - expert opinions and consensus; type of ICU surveyed (adult, neonatal, pediatric, mixed pediatric); research subjects (patients; nurses; nursing technicians; nursing assistants; nursing staff; other health professionals; family members of patients; others - specify).  

For data analysis, which was carried out in June 2017, thematic categorization and simple descriptive statistics were used. Figure 1 shows the stages of selection, analysis and final sampling of the documents that composed the study.

Figure 1 - Flow of the selection and analysis process of the research documents, 2018.
Results


Table 1 shows the universities and the number of studies carried out in their respective graduate programs. It was noticed that most were held at the Universities of São Paulo and Federal de Santa Catarina.

**Table 1 – Dissertations and theses from researches in Brazilian universities, 2018.**

<table>
<thead>
<tr>
<th>Instituição de Ensino Superior</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal University of São Paulo</td>
<td>86 (35.3%)</td>
</tr>
<tr>
<td>Federal University of Santa Catarina</td>
<td>40 (16.3%)</td>
</tr>
<tr>
<td>Federal University of Minas Gerais</td>
<td>27 (11.1%)</td>
</tr>
<tr>
<td>Federal University of Rio de Janeiro</td>
<td>16 (6.6%)</td>
</tr>
<tr>
<td>Federal University of Bahia</td>
<td>14 (5.7%)</td>
</tr>
<tr>
<td>Federal University of Ceará</td>
<td>8 (3.3%)</td>
</tr>
<tr>
<td>Federal University of Goiás</td>
<td>7 (2.9%)</td>
</tr>
<tr>
<td>Federal University of Rio Grande do Norte</td>
<td>5 (2.1%)</td>
</tr>
</tbody>
</table>
Regarding the academic level, the majority came from master's courses (204; 83.6%), followed by productions at the doctoral level (40; 16.4%). As for the characterization according to the place where the research was carried out, Figure 2 shows the distribution by Federation Unit (FU). There was a concentration of studies in the Southeast, with more than half (127; 52.0%), followed by the South (58; 23.8%) and Northeast (36; 14.8%). The region with the lowest percentage was the Midwest (11; 4.5%). None of the studies analyzed were carried out in the North and some did not mention the place of development (12; 4.9%).

It is noteworthy that the data presented in Figure 2 refer to the place where the research data were collected, which may differ from the geographic location of the university where the course is offered.

Figure 2 – Quantitative of studies by Brazilian Federation Unit, 2018.

### Table 1: Distribution by Brazilian Federation Unit

<table>
<thead>
<tr>
<th>University</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal University of Paraná</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>Federal University of Rio Grande</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>Federal University of Paraíba</td>
<td>5 (2.1%)</td>
</tr>
<tr>
<td>Federal University of the State of Rio de Janeiro</td>
<td>4 (1.6%)</td>
</tr>
<tr>
<td>Federal University of Rio Grande do Sul</td>
<td>3 (1.2%)</td>
</tr>
<tr>
<td>Federal University of Santa Maria</td>
<td>3 (1.2%)</td>
</tr>
<tr>
<td>University of Campinas</td>
<td>3 (1.2%)</td>
</tr>
<tr>
<td>University of Brasília</td>
<td>3 (1.2%)</td>
</tr>
<tr>
<td>Federal University of Alagoas</td>
<td>2 (0.8%)</td>
</tr>
<tr>
<td>Federal University of Maringá</td>
<td>2 (0.8%)</td>
</tr>
<tr>
<td>Universidade Estadual de Londrina</td>
<td>2 (0.8%)</td>
</tr>
<tr>
<td>Federal University of São Paulo</td>
<td>1 (0.4%)</td>
</tr>
<tr>
<td>University of Guarulhos</td>
<td>1 (0.4%)</td>
</tr>
<tr>
<td>Federal University of Maranhão</td>
<td>1 (0.4%)</td>
</tr>
<tr>
<td>Federal University of Espírito Santo</td>
<td>1 (0.4%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>244 (100%)</strong></td>
</tr>
</tbody>
</table>
The objects of study of theses and dissertations were related, mainly to: nursing care and procedures in the ICU (46; 18.9%); workload, stress and dimensioning of nursing staff (28; 11.5%); systematization of care and the nursing process in the ICU (20; 8.2%); feelings and experience of family members of patients admitted to the ICU (19; 7.8%); not informed (15; 6.2%); nursing work process in the ICU (13; 5.3%); quality, culture and patient safety (13; 5.3%); healthcare-related infections (12; 4.9%); worker health, quality of life of professionals, occupational risks and biosafety (11; 4.5%); injuries by pressure and other injuries in patients admitted to the ICU (10; 4.1%).

About the methodological design of the studies, descriptive studies predominated (202; 82.9%), followed by observational studies (11; 4.5%). Regarding the design, quantitative (133; 54.5%) and qualitative (85; 34.8%) studies were highlighted. The others were mixed (20; 8.2%) and some did not report the type of design (6; 2.5%).

From the types, the studies were classified according to the criteria of the JBI® in the following levels of evidence: I (3; 1.2%); II (5; 2.1%); III (15; 6.2%); IV (221; 90.5%). The
predominant approach was quantitative (133; 54.5%), followed by qualitative (85; 34.8%) and mixed (20; 8.2%). Six studies (2.5%) did not inform the approach in the method.

Regarding the type of ICU in which the research was carried out, a higher percentage was found in adult ICUs (165; 67.6%). There were also studies carried out in neonatal ICUs (46; 18.9%), pediatric ICUs (14; 5.7%), some carried out simultaneously in adult and pediatric ICUs (6; 2.5%), adult and neonatal (1; 0.4%), adult, pediatric and neonatal (1; 0.4%), pediatric and neonatal (1; 0.4%) and in a mobile ICU (1; 0.4%). Nine studies (3.7%) did not report the type of ICU surveyed.

The research subjects were categorized and distributed, as presented in the studies. Most of them were carried out with patients (84; 34.4%), nurses (54; 22.1%), nursing staff - did not specify whether the public were nurses or technicians (46; 18.9%) and family members of patients (16; 6.6%) who together make up 82.0% of the study subjects.

**Discussion**

The analyzed documents represent a sample of only 2.66% of all research carried out in Brazilian nursing graduate programs. This number can be considered low, given the complexity involved in the process of caring for the patient in these environments. It is well known that the work in the ICU aims to provide qualified and uninterrupted care to people who need intensive monitoring, due to their clinical conditions as well as those who are at risk of dying.9

Given this expressiveness, the concentration of research in the Southeast, South and Northeast regions in the analyzed period stands out. This fact may have occurred due to the greater number of beds for intensive care being located in these regions, according to data from a survey conducted by the Federal Council of Medicine.10 It is also important to emphasize that the majority of postgraduate courses at the master’s and doctoral level in nursing are located in these regions.5

Regarding the objects of study, their importance is highlighted when they contribute to the qualification of care in different professional practice scenarios. Cares that can also involve the performance of technical procedures and demand a load of responsibilities for their
execution. These objects were the most relevant since they had a predominance in the number of productions.

There was also a significant number of studies that address workload, stress and the dimensioning of nursing staff. These three points are related and interfere with the quality of life of workers and are the subject of international\textsuperscript{12-13} and national studies.\textsuperscript{14-15}

Thus, a survey carried out in eight ICUs at a public hospital in São Paulo revealed that nursing professionals consider the factors that trigger stress in the workplace to be a challenge. It is seen that this is also challenging for the organizational context since stress can directly affect the quality provided of care.\textsuperscript{15}

A study mentions that in the current context, many nursing professionals go through situations that generate high workload and pressure in ICU environments, which can directly interfere in their personal lives and the care process.\textsuperscript{16} Such situations may be related to the exposure of professionals and patients to risk situations, handling many technological resources, living with the process of death and dying, anxiety, among others.\textsuperscript{9} Therefore, it is essential to consider the factors that interfere in the professional's life and actions that promote the health of the nursing worker.\textsuperscript{16}

Regarding methodological characterization, it was noticed that the presence of descriptive, quantitative, and with the highest classification at the level of evidence IV studies was common. This result was also found in another investigation that analyzed postgraduate productions in Brazilian nursing.\textsuperscript{17} Although this type of research presents its importance, more specifically in analyzing and explaining what happens in professional practice, it is still necessary to generate knowledge of these situations, which requires the development of studies at other levels of evidence.\textsuperscript{18}

When dealing specifically with the types of ICU, in which the research was carried out, the expressiveness of the adult intensive care setting was highlighted, which is intended for the
care of patients aged 18 years or over, and which can also admit patients aged 15 to 17, if defined in the institution's rules.⁷

It should be noted that studies dealing with the profile of these units in Brazil are rare. A project developed by the Brazilian Intensive Care Association (AMIB) in partnership with Epimed Solutions, entitled Brazilian ICUs, aimed to characterize the epidemiological profile of Brazilian ICUs and share information that may be useful to guide health policies and strategies to improve the care of critical patients in the country. According to project data, 621 units joined. However, classification by type of unit was not cited according to the age group of the patients.¹⁹

The target audience of the research was, in its majority, patients admitted for treatment, followed by nurses and nursing staff in general. The nursing technician was the exclusive subject of only one of the studies, which represents an incipience of investigations in this scenario from these professionals.

Thus, in addition to the less frequent studies evidenced, it is considered necessary to develop research with a greater depth of the patient’s physiological responses to nursing interventions in intensive care, since they were incipient. It is also suggested to look at the priority themes of the Ministry of Health’s Research Priorities Agenda²⁰, whose research objects can be applied in the context of intensive care, such as the development of technologies and innovation in health, maternal and child health, and the elderly.

Besides, as a limitation of the study, the exclusion of 190 surveys stands out, representing 39.63% of the abstracts selected for analysis of the full thesis and dissertation reports, because the documents are not available for download. This number is significant and may have influenced the results presented here.

**Conclusion**
The study made possible to characterize the theses and dissertations produced by nurses who deal with topics of interest in the context of intensive care. It presented a profile in which most of the research was carried out in the Southeast, South and Northeast regions, with a descriptive design and focusing on the care and procedures performed in the ICU.

Thus, it was noticed that the highlighted themes are of contemporary relevance to nursing because they are related to the procedures performed by the team, workload, stress, and dimensions, in addition to the systematization of care, both in the context of intensive care.

Despite this, further research by nurses in the intensive care setting with evidence levels I, II and III is recommended, which can further contribute to the qualification of the care offered to the patient in intensive care, in addition to other processes that involve the daily work of nursing. It is also suggested that further research similar to this one be carried out so that the profile of the studies developed in the following years can be traced.

References


**Corresponding Author**

Alcides Viana de Lima Neto

E-mail: alcides.vln@gmail.com

Adress: Campus Universitário da UFRN, Departamento de Enfermagem, Av. Senador Salgado Filho, 3000, Candelária, Natal, RN.

Zip Code: 59064-741
Authorship contributions

1 – Alcides Viana de Lima Neto
Conception and planning of the research project. Obtaining, analyzing and interpreting the data. Critical writing and review.

2 – Andréa Tayse de Lima Gomes
Obtaining or analyzing and interpreting the data. Critical writing.

3 – Cecília Olívia Paraguai de Oliveira Saraiva
Obtaining or analyzing and interpreting the data. Critical writing.

4 – Suzane Gomes de Medeiros
Obtaining or analyzing and interpreting the data. Critical writing.

5 – Mayara Lima Barbosa
Obtaining or analyzing and interpreting the data. Critical writing.

6 – Viviane Euzébia Pereira Santos
Conception and planning of the research project. Obtaining, analyzing and interpreting the data. Critical writing and review.

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