

Nursing Doctorates in Brazil: research formation and theses production

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Objective: to analyze the formation of nursing doctorates in Brazil, from theses production, disciplines and other strategies focusing on research offered by courses. Method: a descriptive and analytical study of the performance of 18 doctoral courses in nursing, running from 1982 to 2010, and defended their theses between 2010-2012. Results: 502 theses were defended in this period, most linked to the online research process of health and nursing care. There are gaps in the knowledge of theoretical and philosophical foundations of care, nursing history and ethics. There are also weaknesses in the methodological design of the theses, with a predominance of descriptive and/or exploratory studies. This was consistent with international standards set with regards to the proposition of research of disciplines and complementary strategies in forming the doctorate. Conclusion: despite the efforts and advances in research formation, it is essential to expand to more robust research designs with a greater impact on production knowledge that is incorporated into practice.

Descriptors: Nursing Post-Graduate Education; Education, Nursing; Nursing Research.

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Introduction

The evolution of graduate nursing programs is accompanied by the development of the profession, from the historical and social context of social transformations, influenced by the economy, changes in information and the emergence of new cultures⁽¹⁻³⁾.

Graduate nursing programs in the context of the Americas began in the 1930s in the United States, later expanding to Latin American countries. At the doctoral level, the first courses also appear in the US, followed by Brazil, Venezuela, Chile, Mexico, Argentina and Colombia and Cuba⁽⁴⁻⁵⁾.

In 2009, there were about 386 doctoral programs worldwide, distributed as follows: Europe 120 (30%), Asia 44 (11%), Oceania 22 (6%), Africa 20 (5%) and America 180 (47%), of which 156 (41%) in North America and 24 (6%) in Latin America⁽⁶⁾. Despite its peculiarities, the programs have a common core focused on the nursing discipline, with emphasis on research, theoretical and philosophical science construction⁽⁵⁾. The purpose of these is the production of knowledge, the development of global leaders, seeking above all the development of the profession, discipline and researchers⁽⁴⁾.

International criteria and standards of the International Network for Doctoral Education in Nursing (INDEN) indicate that they should guide doctoral programs toward the science of nursing and research. The contents must turn to the theoretical, methodological and ethical development of qualitative and quantitative research. The investigations, both theoretical and philosophical, must respond to the professional phenomena, enabling the formative development, information and transformation of nursing practice⁽⁷⁾.

The first doctorate in nursing in Brazil and Latin America - *Programa Interunidades da Universidade de São Paulo* - was in 1982, through the joint work of teachers, the University of São Paulo (USP) School of Nursing, based in São Paulo, and Ribeirão Preto. Later, other universities were opened in the State of São Paulo and Rio de Janeiro⁽⁸⁾.

Gradually, the doctorates in this area have been increasing throughout the country, especially from 2009, reaching 34 programs in 2014, 32 of them with training also for the master's level, pointing to the relative growth of 127% in five years. On the other hand, there is a persistent regional imbalance, predominantly with doctoral courses in the Southeast (50.0%), followed by the South (21.9%) and Northeast (21.9%), with significant deficiency in the Midwest (6.2%) and this

level of training in the North is lacking as well as in the professional doctorate mode.

To minimize such regional asymmetry, 15 doctoral programs of national excellence in the area of nursing and international integration have met these demands with solidarity actions, forming masters and doctoral classes apart from headquarters - Minter/Dinter in various regions of the country, besides partnership projects in research - Procad. Such actions serve the policy adopted by the Higher Education Personnel Improvement Coordination (*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES*), the foundation of the Ministry of Education (MEC), with a key role in expanding and consolidating graduates in the strict sense (masters and doctorate)⁽⁹⁾.

The first thesis defense was in 1983, up until the year 2012 there are now 2,049 doctorates in Nursing, the majority (1,367) in the last ten years, with 18 courses in operation. In the coming years, this number should increase, with the first titles of 14 courses in the consolidation phase, in addition to the Dinter classes in progress. This expansion meets the National Plan for Graduate Studies 2011-2020, which sets a target to double the national indicator of 1.4 doctorates /1000 inhabitants by the year 2020⁽¹⁰⁾.

Given this national context, it justifies the realization of this research which focuses on the training of nursing doctorates, the results of which will bring subsidies for critical reflection on the research training offered by doctoral programs, enabling the establishment of guidelines for its strengthening. Therefore, it is necessary to analyze the formation of doctorates in nursing in Brazil, including the production of these disciplines and other strategies focusing on research offered by courses.

Method

This is a descriptive and analytical study, which has its central focus on the description and analysis of a particular phenomenon or population characteristic⁽¹¹⁾. It included data from 18 nursing doctoral courses, which began operations from 1982 to 2010 and which had theses between 2010-2012, 502 in total. Thus, participated in the study included: the University of São Paulo (seven doctorates - Inter EE/EERP, Nursing/EE, Nursing Health of the Adult/EE, Nursing Management/EE, Fundamental Nursing/EERP, Psychiatric Nursing/EERP and Public Health Nursing/EERP), Federal University of Rio de Janeiro (UFRJ), Federal University of São Paulo (UNIFESP), Federal University de Minas Gerais (UFMG),

the State University of Campinas (Unicamp), State University of Rio de Janeiro (UERJ), Federal University of Santa Catarina (UFSC), Federal University of Rio Grande do Sul (FURG), Federal University of Rio Grande (FURGS), Federal University of Paraná (UFPR), Federal University of Ceará (UFC) and Federal University Bahia (UFBA).

The CAPES database was used for access to data, specifically, the description of the proposed course and cast of disciplines for the year 2012, and worksheets/banks of theses defended during the 2010-2012 period. Through access to the discipline menus, the description of training strategies and the summaries of 502 theses defended during this period we were able to collect the data using this instrument; built specifically for the research, which synthesizes information on the contents of disciplines focusing on training research (teaching internship, thesis seminar, participation in research groups and other training strategies), other strategies to complement this training, and thesis content according to the theme (area/field and research line), type of study and theoretical and methodological approach. For the classification of these area/field of research, it was done by reference proposals representing the area of nursing in CAPES, the National Council for Scientific and Technological Development - CNPq and the Brazilian Nursing Association - ABEn⁽¹²⁾ and a national study returned for analysis about graduate nursing in Brazil⁽¹³⁾.

Analysis and discussion of the results were based on descriptive and analytical synthesis in the light of the national and international scientific literature on nursing doctorates. Because it is in the public domain of information and does not involve human beings directly in data collection, it was not necessary to get approval by the Research Ethics Committee, as indicated by the National Health Council.

Results

With respect to the results of 18 doctoral courses from 2010 to 2012, 502 theses were defended in nursing; two of them did not have their abstracts located. Figure 1 shows the 500 theses distributed by their institution, predominantly defended at the Federal Universities of Rio de Janeiro (57) and Santa Catarina (50). The seven courses at the University of São Paulo accounted for 45.8% (229) of theses defended during this period.

One of the theses that was summarized was blank and thus the data presented from now on refer to 499 theses. Table 1 shows the theme of this thesis according to area/field and their lines of research.

Regarding the type of study, Figure 2, there is predominately descriptive (42.7%), followed by exploratory descriptive (29.3%) and explanatory or analytical (28.0%).

The predominant approach of the theses was qualitative (330 to 66.1%), followed by quantitative (139 to 27.9%) and less frequently qualitative quantitative (30 to 6.0%).

The incompleteness of summaries, particularly those with a qualitative approach that did not explain the theoretical or methodological framework or the theoretical picture used for data analysis, hampered this trial. Most of them mention only the use of content analysis and discourse (95). The benchmarks spelled out in the theses were: phenomenology (24), hypothetical-deductive (17), historical-social (17), ethnography (14), dialectic (13), grounded theory (13), hermeneutics (8), symbolic interaction (6) and social representation (6), among others.

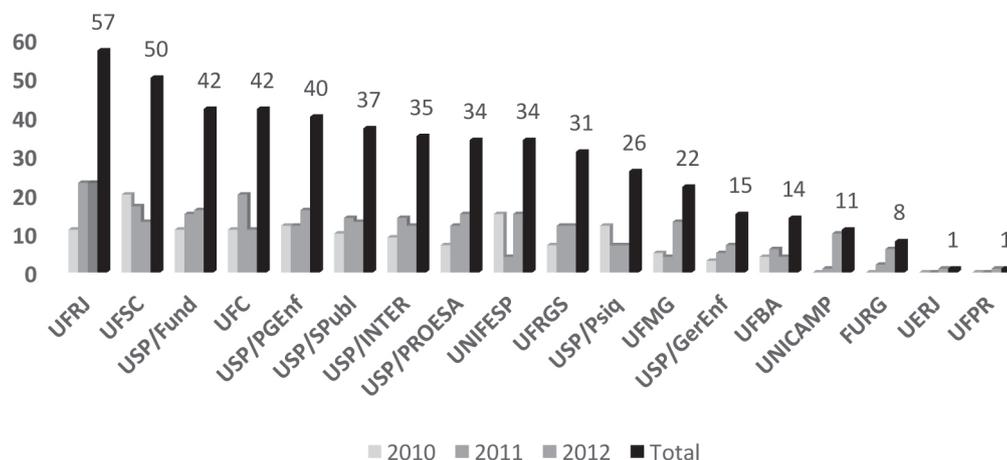


Figure 1 - Doctoral thesis defended during the 2010-2012 period. Brazil, 2014

Table 1 - Distribution of theses defended during the 2010-2012 period, according to the area/field and lines of research. Brazil, 2014

Area/field	Line of research	Nº	%
Professional	Theoretical and philosophical foundations of care in health and nursing	21	4,2
	Technology in health and nursing	47	9,4
	Ethics in health and nursing	4	0,8
	Nursing history	22	4,4
Subtotal		94	18,8
Health care	Process of health care and nursing in health and quality of life	168	33,7
		82	16,4
Subtotal		250	50,1
Organizational	Policies and practices in health and nursing	43	8,6
	Policies and practices in nursing education	31	6,2
	Social production and work in health and nursing	67	13,4
	Management of services in health and nursing	13	2,6
	Information/communication in health and nursing	1	0,2
Subtotal		155	31,1
Total		499	100

Theses in the quantitative approach are characterized as: methodological studies (51), epidemiological (48), experimental (33, 11 of them are randomized controlled trials), intervention studies (17), quasi-experimental (9), among others with a predominate use of descriptive statistics for data processing.

With regards to the training of doctoral students, there were 462 existing courses in disciplines dealing, primarily, with research-related content (50.65%), followed by relevant thematic areas such as: organizational (24.9%), health care (13, 5%), professional (13.4%) and others (6.5%). Of the total of 234 subjects analyzed, the average was 11, ranging from 5-23 subjects per course. Among these are epistemology and research methodology, addressed in programs 11 and 13, respectively. We also analyzed the methodological approaches in specific disciplines, highlighting qualitative (15 subjects in 11 courses), followed by the quantitative approach (8 subjects in 6 courses). In programs where methodological approaches were not discussed in specific subjects, they were discussed in the methodology of the discipline.

The content of the research disciplines covers: epidemiology (17 subjects in eight courses), biostatistics (2 subjects in 2 courses), statistics (10 subjects in 7 courses, one with a specific subject for descriptive and analytical statistical approach), social representations (3 subjects in 2 courses), dialectic (1 subject in a course), phenomenology (2 subjects in 2 courses), ethnography (1 subject in a course), clinical research (3 subjects in 3 courses) and evidence-based research (4 subjects in 4 courses). There are also 8

subjects related to data collection and analysis, offered by 7 courses, and address issues such as formulating questionnaires, work groups, discourse analysis and thematic analysis.

The programs have invested in courses that allow students to improve the process of drafting and analyzing articles, comprising 10 subjects in 6 courses. The discussion of emerging issues or to provide projects that deepen the developed of doctoral students, was the subject of 18 subjects in 10 courses, called: research topics and thematic seminars or research. In addition to these, 19 subjects offered in 10 courses are focused on the orientation of the activity of the research project (thesis seminar).

It is worth mentioning that there are also 60 subjects offered in 16 courses, which deal with conceptual aspects or the deepening of different themes, such as: care models and theories, women's health, child health, health promotion, family, education, gender, etc. Disciplines are aimed at the discussion of theoretical and methodological references related to specific themes, guided by knowledge production.

In addition to the subjects formally adopted by programs for training in research we also analyzed additional strategies used to complement the training of the researcher. These were identified from reading the descriptive document of each program for the year 2012. These document reports, in the form of discourses, described the actions of the programs in various dimensions, including aspects related to the formation of the general student and, particularly, related to training in research.

Among the strategies identified as complementary in the formation of the researcher, this occurred in each of the 18 courses studied, in ascending order: experience in research groups (18 courses), exchange visiting researcher (17), participation in events and technical visits abroad (17), scientific and technical activities with foreign researchers (16), orientation of research to undergraduate or master's students (13), scientific article development (11), requirement of an article for thesis defense (6), support for preparation in foreign language (5), doctoral training as an examination board member of undergraduate work or for completion of an undergraduate degree course (4) and training as an *ad hoc* consultant for scientific journals (2).

The experience in research groups is considered a strategy that enables an integrated view of the actions of a researcher. Five of these courses give hours to the student who participates in this type of activity. This experience is considered a privileged space for the student, they experience working together on the discussion and further development of research projects, in fundraising, development of multicenter projects, and the reception of foreign researchers as well as others.

The exchange visiting researcher (17), participation in events and technical visits abroad (17), scientific and technical activities with foreign researchers (16) are considered essential strategies in the graduate's internationalization process and has been increasingly stimulated between the programs.

The orientation of students in the undergraduate or master's programs (13) has been considered a strategy of fundamental importance for the formation of the doctoral student, to allow the same experience of the development stages of research and training for their future mission as a researcher. Similarly, the search for increasingly focused strategies in the development of scientific papers, is present in 11 courses (six of them in the form of subjects) and spaces for discussion and further development of research projects (8) are initiatives of programs seeking to improve the quality of research projects and their derivatives to ensure success in submissions of articles to qualified journals. Support for the development of scientific writing is considered necessary in the formation of the doctorate, especially to adapt text to international standards and is by means of workshops with editors and intensive training for writing articles.

The requirement of an article submitted or published for thesis defense (6), although it does not explicitly appear in all reports of study programs, it

has been a strategy to ensure not only the formation of the researcher, but a productivity indicator of the programs.

Another less initiative cited in the reports, but of fundamental importance in the formation of the researcher, is the support for the preparation of a foreign language (5) in the form of funding for English courses and preparation for the TOEFL exam. Finally, the two strategies involving doctoral training as an examination board member of undergraduate work or for completion of an undergraduate degree course (4) and training as an *ad hoc* consultant of scientific journals (2), which are concerned with the training of the future doctorate for actions that require judgment skills, either in the evaluation of scientific papers or articles submitted to journals.

Discussion

Considering the attributes of nursing as a profession, that enables the care of people, the care process develops in three major dimensions that embrace the practices of caring for humans: practices of care, research and the administrative-management dimension⁽¹⁴⁾.

The majority of productions in the line of research theses involve the process of care in health and nursing which shows that the focus of interest of nursing knowledge production is directed toward the area/field of health care, given the vocation of the discipline is to seek answers to practical questions surrounding the service of patients of health services.

Nevertheless, the focus of interest can be returned to the pragmatism of care into its constituent processes, such as science-in-construction⁽¹⁵⁾; nursing still needs to make efforts to produce comprehensive, analytical and explanatory knowledge about their practice, especially those classified in the professional area/field that meet the interests of its theoretical and philosophical foundations of care, just to clarify, the field of knowledge that identifies the profession⁽¹⁶⁾. However, it is observed that this line of research lacks investments because it accounts for only a small portion of what has been produced in doctoral courses in nursing.

In addition to this line, the productions that meet the historical and ethical foundations representing together an output of 9.4%, matching the care and technology line; this finding indicates that such programs need to increase production to contribute to studies leading to an epistemology of nursing care⁽¹⁵⁾.

With regards to the types of studies, there is a clear predominance of descriptive studies and/or exploratory studies produced, like that found in previous studies^{13,17}. This situation points to the needs of nursing as a discipline, there is still a generation of knowledge related to practical issues involving the care processes and not exactly in their analysis and explanation.

The shortage of these in Brazil contributes to strong evidence for nursing care and management that reflects what should be also occurring in other countries, because, in a survey done in US National Institutes of Health⁽¹⁸⁾, in September 2014, 159,328 registered clinical trials were found, with only 1,446 (0.91%) being in nursing.

If all the socio-historical movements in the area has been done for the formation of doctorates, researchers, so as to strengthen the scientific field of nursing, it is necessary to produce science through doctoral theses, investing in generations of knowledge which add up to form an epistemological status to sustain the status of nursing in science. This requires systematic investigative approaches with informed explanations, appropriate methodologies and theories that give support to models and care processes⁽¹⁹⁾.

These aspects include the recommendations of the International Network for Doctoral Education in Nursing (INDEN)⁽⁷⁾ that, in addition to specific contents for the development of knowledge and skills for research, signals the importance of providing students with training opportunities to complete the process of submission to publication of scientific articles in journals with renowned editorial boards.

In this sense, doctoral courses in nursing in Brazil are in line with international set of standards, with regard to the proposition of research disciplines, since all of the courses offer such content. Importantly, with this type of education, different strategies are employed by most of the courses as a way to strengthen training in research, either through shared activities with other researchers in research groups, conducting doctoral programs with a center stage of international standards of excellence, or orientation of undergraduate and master's students. Initiative is also important, although mentioned by few courses; about 20.0% include the doctoral student as an examination board member of an undergraduate work or for completion of an undergraduate degree, and training as an *ad hoc* consultant for scientific journals, contributing to the development of analytical skills, judgment and evaluation of research papers.

If one considers the advances mentioned, the resulting products from such training still show

weaknesses, particularly in the types of studies which are also predominantly exploratory and descriptive, or the content related to the science of nursing in its philosophical, theoretical and ethical aspects. These findings are parallel to the small supply of courses about the science of nursing and the experimental type of research with the use of quantitative methods, particularly clinical trials, to be able to generate robust evidence about nursing care. However, beyond the quantitative subjects in research, we must assess the quality and density of its contents, which is essential to solidify the background of research.

The results on the production of knowledge and support offered by disciplines as well as strategies used in the training of doctorates by Brazilian courses are indicative of the existence of the vulnerable aspects of the process, similar to results observed in previous studies^(13,17,20).

In summary, the results show that, despite the need for improvements of providing and consolidating subjects, the courses cover the basic content for the training of doctorates. Nevertheless, the product of theses does not seem to reflect the progress that the training content and complementary strategies in research offer by the available courses, because it turns out that most of the studies are descriptive and exploratory and there are still timid advances in different methodological approaches.

Consider, therefore, that the training of doctorates should result in the means of human excellence, leaders are able to leverage research, education and care in advanced practice nursing within the legal and ethical scope of the profession^(4-6,20-21), the noted weaknesses pose challenges, while pointing to the advances to be pursued by researchers in nursing^(8,21).

The improvement process of theoretical and methodological approaches of the thesis, is another challenge to overcome, it refers to the increasing incorporation of scientific and technological knowledge into new processes and products that are able to meet these needs⁽²²⁾, as well as expanding the search for excellence in teaching and world-class research in doctoral programs, in accordance with the global guidelines of the nursing area.

Conclusion

Given the initial objective of analyzing the training of nursing doctorates in Brazil, from the production of theses disciplines and other strategies, focusing on

research offered by courses, it was possible to map the strengths and weaknesses of the doctoral training process.

These findings indicate some related advances, especially in the provision of courses and other training strategies as well as internationalization initiatives. On the other hand, it also showed weaknesses already described in previous studies, showing difficulty in moving forward in proposing more robust designs with a higher impact in the production of knowledge that is embedded in practice.

One limitation of this study points to the analysis period restricted to a single three-year period (2010-2012) and the quality of the abstracts used, many with little clarity, especially with regards to the methodological design of the study. From the results obtained, some recommendations and challenges are presented to the graduate programs:

- Increase the development of stronger research projects and clinical trials to generate better evidence for decision making in health care and nursing;
- Use references to transfer knowledge, aimed at implementing evidence, making changes in professional practices in the research process itself;
- Carry out studies with qualitative design approaches and with a higher degree of innovation;
- Increase other strategies of excellence and internationalization of doctorates in nursing with greater proactivity of research groups to complement the training of doctoral students in research;
- Facilitate greater mobility of researchers and students to national centers of excellence and abroad;
- Increase the dissemination of research results at national and international events, and reference journals in the area with greater impact factor;
- Create or expand networks of regional, national and international cooperation between nursing graduate programs to strengthen training and the science of nursing.

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