



SCIENTIFIC PRODUCTION OF ONCOLOGY NURSING: TEMPORAL CUT 2002 TO 2012

PRODUÇÃO CIENTÍFICA DA ENFERMAGEM ONCOLÓGICA: RECORTE TEMPORAL 2002 A 2012

PRODUCCIÓN CIENTÍFICA DE ENFERMERÍA ONCOLÓGICA: RECORTE TEMPORAL 2002 A 2012

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ABSTRACT

Objective: to identify the nursing publications related to chemotherapy at a national level. **Method:** bibliometric and scientometric research held in BDNF, MEDLINE, LILACS and SciELO with the descriptors "nursing" and "chemotherapy", from 2002 to 2012. Variables investigated: objective of the study, degrees and affiliation of the first author; year, journal and classification in WebQualis of CAPES publication; design and theoretical framework of the study. 70 publications analyzed by simple descriptive statistics were included. **Results:** 48.58% of knowledge were produced by masters and nurses linked to educational institutions in the Southeast region; 62.86% were published in journals in the strata A2 and B1; 41.44% of the subjects covered nursing care, breast cancer, cervical cancer, side effects caused by chemotherapy; the studies were predominantly qualitative, 75.71% used no specific theoretical framework. **Conclusion:** the production of knowledge in the investigated area is still in incipient, but has been increasing with the growing incidence of cancer and the development of oncology. **Descriptors:** Chemotherapy; Nursing; Oncology; Bibliometrics.

RESUMO

Objetivo: identificar as publicações da enfermagem referentes à quimioterapia no âmbito nacional. **Método:** pesquisa bibliométrica e cienciométrica, realizada na BDNF, MEDLINE, LILACS e SCIELO a partir dos descritores "enfermagem" e "quimioterapia", período 2002-2012. Variáveis investigadas: objetivo do estudo, titulação e vínculo do primeiro autor; ano, periódico e classificação na WEBQUALIS do CAPES da publicação; delineamento e referencial teórico do estudo. Foram incluídas 70 publicações, analisadas por estatística descritiva simples. **Resultados:** 48,58% dos conhecimentos foram produzidos por mestres e enfermeiros vinculados às instituições de ensino da região Sudeste; 62,86% publicados em periódicos nos estratos A2 e B1; 41,44% das temáticas abrangeram o cuidado de enfermagem, câncer de mama, colo do útero, efeitos colaterais ocasionados pela quimioterapia; os estudos foram predominantemente qualitativos, 75,71% não utilizaram referencial teórico específico. **Conclusão:** a produção de conhecimento na área investigada ainda é incipiente, mas vem aumentando com o crescimento da incidência do câncer e com o desenvolvimento da oncologia. **Descritores:** Quimioterapia; Enfermagem; Oncologia; Bibliometria.

RESUMEN

Objetivo: identificar las publicaciones de enfermería referentes a la quimioterapia en el ámbito nacional. **Método:** investigación bibliométrica y cienciométrica, realizada en la BDNF, MEDLINE, LILACS y SCIELO a partir de los descriptores "enfermería" y "quimioterapia", período 2002-2012. Variables investigadas: objetivo del estudio, título y vínculo del primer autor; año, periódico y clasificación en la WEBQUALIS del CAPES de la publicación; delineamiento y referencial teórico del estudio. Fueron incluidas 70 publicaciones, analizadas por estadística descriptiva simple. **Resultados:** 48,58% de los conocimientos fueron producidos por maestros y enfermeros vinculados a las instituciones de enseñanza de la región Sudeste; 62,86% publicados en periódicos en los extractos A2 y B1; 41,44% de las temáticas envuelven el cuidado de enfermería, cáncer de mama, cuello del útero, efectos colaterales ocasionados por la quimioterapia; los estudios fueron predominantemente cualitativos, 75,71% no utilizaron referencial teórico específico. **Conclusión:** la producción de conocimiento en el área investigada aún es incipiente, pero viene aumentando con el crecimiento de la incidencia del cáncer y con el desarrollo de la oncología. **Descriptores:** Quimioterapia; Enfermería; Oncología; Bibliometría.

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INTRODUCTION

Historical records show the use of chemotherapy in the form of metal salts, from ancient times to the control of cancers. However, the therapeutic arsenal available today is the result of studies that emerged from World War II, after the accidental exposure of a group of people to mustard gas, due to a military operation that blew up a tank of this substance.^{1,2}

After exposure, there was significant reduction in white blood cell count in people exposed. Therefore, the scientists of that time administered, intravenously, mustard gas in people diagnosed with advanced lymphoma. In response to therapy there was temporarily reduction of the disease. This experience has led scientists to investigate other substances for cancer control. The first clinic trial took place in the 50's. So, in the form of experimentation, chemotherapy appeared in 1950 and has evolved since 1980, giving birth to the Clinical Oncology specialty.^{1,2}

Nursing began operations in the care to people undergoing chemotherapy, and the first evidence of the Oncology Nursing specialty emerged from the 70's. With nurses acting also in research centers, it was created in 1975, the Oncology Nursing Society in the United States of America, the world's largest scientific organization in this area of knowledge.³

In Brazil, in 1983, during the XXXV Brazilian Congress of Nursing, a meeting was held with nurses who work in Oncology, which resulted in the organization of this category in the country. The following year, there was the creation of the Brazilian Oncology Nursing Society of the State of Sao Paulo and, in 1988, in Salvador/Bahia, there was the election and installation of the first board of the Brazilian Society of Oncology Nursing.³

Being Oncology a science that is developing rapidly, the oncology nursing accompanies this development contributing to the construction of knowledge in the care of cancer patients. Among the therapeutic treatment modalities, chemotherapy stands out as the most used option. So it was established as objective of this study to identify and characterize the nursing publications concerning the chemotherapy subject at the national level from 2002 to 2012.

The theoretical and methodological framework that guides the development of this study is bibliometrics and scientometrics.

Bibliometrics, as information science study area, allows the study of the quantitative

aspects of scientific production, dissemination and use of recorded information. The evaluation within a particular branch of knowledge allows showing society how such knowledge has been evolving and how it has contributed to solve the problems that arise within their area. It thus has an important role in analyzing the scientific production, since its indicators depict the degree of development of an area of knowledge of a scientific field.^{4,5}

When bibliometrics has as object the analysis of scientific fields it is called scientometrics. This method of analysis is based on statistical techniques that aim at checking and processing information contained in scientific and technological publications available in the databases and information systems.⁴ Scientometrics discovers the links between science and technology for the advancement of knowledge and seeking to relate it with social issues and public policies.^{5,6}

OBJECTIVE

- To identify the nursing publications relating to chemotherapy at the national level.

METHOD

Bibliometric and scientometric study held in publications available on the Nursing Database (*Base de Dados em Enfermagem - BDENF*), Medical Literature Analysis and Retrieval System Online (MEDLINE), Latin American Literature in Health Sciences (LILACS) and Scientific Electronic Library Online (SciELO).

Data collection was carried out in August 2013, from the terms: nursing AND chemotherapy and the following research question: How many and what are the characteristics of nurses publications concerning the subject chemotherapy at the national level from 2002 to 2012. The terms chose to search were considered relevant as they allow a comprehensive search because the use of more specific descriptors would limit the number of references identified from the subject of interest.

For the initial selection of articles we established the following limits: time frame from 2002 to 2012, articles available in full text for online access, in the Portuguese language and the first author of the article linked to a Brazilian institution.

Initially, we proceeded to search using the terms described above, which resulted in the selection of 217 publications. Then the

checking of titles, authors and abstracts was performed. In this process, 96 repeated publications and two with the authorship of the first author not affiliated with Brazilian institution were excluded. Thus, 119 publications were selected for reading the abstracts, with the purpose of determining the material actually relevant to this study. Of these, 49 did not meet the search theme, since addressed the following topics:

antiretroviral therapy, HIV, mental health, not chemotherapy drug administration and errors in drug administration. The selection of the articles included in the study was carried out in pairs.

Then we started the data collection, with analytical and comprehensive reading of the 70 publications included in the study (Table 1).

Table 1. Publications included in the study, recorded by authorship of the first author and journal of publication. SciELO, LILACS, BDEF and MEDLINE. 2002-2012.

Authorship	Journal	Authorship	Journal
Soares CR	Esc Anna Nery Rev Enferm	Omoboni NA	Cienc Cuid Saúde
Araújo MMT	Rev esc enferm USP	Schneider F	Rev Rene
Sales CA	Acta Scientiarum Health Sciences	Mansano-Schlosser TC	Rev Latino-Am Enferm
Anjos ACY	Rev Latino-Am Enferm	Gonçalves LLC	Rev enferm UERJ
Barreto TS	Rev enferm UERJ	Bergold LB	Texto Contexto Enferm
Martins FTM	Rev esc enferm USP	Simão DAS	Rev Rene
Gomes PI	Rev bras Enferm	Pereira NMLA	Rev enferm UERJ
Soares LC	Cogitare Enferm	Silva SR	Rev bras enferm
Fontes CAS	Acta paul. Enferm	Elias MC	Rev bras cancerol
Bittencourt AR	Rev Bras Cancerol	Almeida EPM	Rev Latino-Am Enferm
Moura ACF	Esc Anna Nery Rev Enferm	Santos RCS	Rev esc enferm USP
Jaconodino CB	Cogitare Enferm	Melo EM	Rev bras cancerol
Oliveira AM	Rev esc enferm USP	Funghetto SS	Rev bras enferm
Andrade M	Rev bras Enferm	Henriques MCL	Rev enferm UERJ
Gomes IP	Texto contexto- enferm	Gonçalves LLC	Rev enferm UERJ
Santos LR	Esc Anna Nery Rev Enferm	Sonobe HM	Rev esc enferm USP
Reis PED	Rev Latino-Am Enferm	Silva CA	Rev Pesq Cuid
Feijó AM	Texto contexto-enferm	Sales CA	Rev bras enferm
Lemos FA	Rev Latino-Am Enferm	Gozzo TO	Rev Latino-Am Enferm
Frigato S	Rev Bras Cancerol	Soares EM	Rev bras enferm
Henriques MCL	Rev enferm UERJ	Souza RS	Rev Rene
Nascimento TG	Rev bras enferm	Gondim FM	Rev enferm UERJ
Sawada NO	Rev esc enferm USP	Chaves PL	Rev Gaúcha Enferm
Da Fonseca SM	Rev bras Enferm	Nicolussi AC	Rev Gaúcha Enferm
Silva PA	Rev bras Enferm	Ferreira NMLA	Rev Eletr Enf
Oliveira CL	Rev Rene	Esírito Santo EA	Cogitare Enferm
Martinz EZ	Acta paul enferm	Guerrero GP	Rev bras enferm.
Lemos IP	Psic Teor Pesq	Albuquerque LA	Rev. Baiana Enferm
Barbosa LG	Cienc Cuid Saúde	Souza MGG	Rev enferm. UERJ
Costa JC	Rev Latino-Am Enferm	65. Oliveira RRBA	Cien Cuid Saúde
Lemos FA	Rev Latino-Am Enfermagem	Simão DAS	Rev bras enferm
Soares LC	Cienc Cuid Saúde	Polo LHV	Rev Einstein
Salvadori AM	Esc Anna Nery Rev Enferm	Artilheiro APS	Acta Paul enferm
Arruda IB	Cogitare Enferm	Salles OS	Rev esc enferm. USP
Lima IS	Rev enferm UERJ	Guerreiro GP	Rev bras enferm

While reading the articles, the following variables were investigated: degrees of the first author; affiliation institution of the first author; journal used for publication of the study; classification of the journal as to assessment area released by the Coordination for the Improvement of Higher Education Personnel (CAPES), in the WebQualis of CAPES - nursing/stratum; year of publication of the study; objective of the study; study design; theoretical framework of the study.

Each variable investigated was recorded in Microsoft Excel® spreadsheet and then the data were processed and analyzed by simple descriptive statistics (absolute frequency, relative frequency, cumulative relative frequency).

RESULTS

The results shown in the following text were obtained with the data processing and statistical application.

In relation to the first author's degree, it was found that most are masters (17) and nurses (17), both with 24.29%, followed by graduates (13), with 18.57%, doctorates (eight) with 11.43%, master students (six), with 8.57%, doctoral students (five), with 7.14% and specialists (three), with 4.29%. One study (1.43%) had no record of the first author's degree.

As for the institutional affiliation of the first author, we found 38 different institutions. The University of São Paulo stood

out, with eight articles (11.43%); and also the Faculty of Medicine of the Triangulo Mineiro, with seven publications (10%), Ribeirao Preto School of Nursing and Federal University of Sergipe, both with four publications (5.71%). Of all affiliations, 27 (71.05%) refer to educational institutions, ten (26.32%) refer to health units and one affiliation (2.63%) was not possible to identify due to the absence of the record in the published article.

The federative units of Brazil that most contributed to publications were Sao Paulo (38.57%), with 27 publications, Minas Gerais

(15.71%), with 11 publications, and Rio de Janeiro (10%), with 7 publications. The cumulative relative frequency by region of Brazil was equivalent to 64.29% (45 publications) for the Southeast, 15.71% (11 publications) in the Northeast, 10% (seven publications) for the South region, 7, 14% (five publications) for the Midwest region and 1.43% (one publication) for the North region.

Table 2 presents the institutional affiliation of the first author by region and federative unit of Brazil.

Table 2. Institution of affiliation of the first author by region and federative unit of Brazil, in the production on nursing and chemotherapy. SciELO, LILACS, BDENF and MEDLINE. 2002 to 2012.

Federative unit	Region of Brazil	n	%
Sao Paulo	Southeast	27	38.57
Minas Gerais	Southeast	11	15.71
Rio de Janeiro	Southeast	7	10.00
Sergipe	Northeast	5	7.14
Rio Grande do Sul	South	5	7.14
Parana	South	2	2.86
Distrito Federal	Midwest	3	4.29
Paraiba	Northeast	2	2.86
Ceara	Northeast	2	2.86
Para	North	1	1.43
Pernambuco	Northeast	1	1.43
Mato Grosso	Midwest	1	1.43
Bahia	Northeast	1	1.43
Goiias	Midwest	1	1.43
No record	No record	1	143
Total		70	100.00

Among the 19 journals chosen by the authors to disseminate the results seized, there was prevalence of: *Revista Brasileira de Enfermagem* (17,14%), *Revista de Enfermagem UERJ* (12,86%), *Revista Latino-Americana de Enfermagem* (11,43%), *Revista Escola de Enfermagem USP* (10%), *Escola Anna Nery Revista de Enfermagem*, *Cogitare Enfermagem*, *Revista Brasileira de Cancerologia*, *Revista Ciência Cuidado e Saúde* (all, respectively, with 5.71% of publications found), *Acta Paulista de Enfermagem*, *Texto & Contexto Enfermagem*, *Revista da Rede de Enfermagem do Nordeste* (all, respectively, with 4.29% of publications found). Table 1, as presented above, shows all the findings.

The classification of journals found by assessment area published by CAPES, in WebQualis of CAPES - nursing/stratum, was equivalent to: A1 classification: 11.43%; A2: 35.71%; B1 classification: 27.14%; B2 classification: 18.57%; B3 classification: 7.14%. Thus, it is evident that the choice of the A2 classification of the selected journals

for publication of studies was the highest, followed by the B1, B2, A1 and B3 classifications.

As to publication by year of study, there has been an increase in the number of publications in the last four years, in the temporal cut of the investigated time. The percentages found were: the years 2002 and 2003 amounted respectively to 4.29% of the publications, 2004 amounted to 7.14%, 2005 amounted to 1.43%, 2006 amounted to 4.29%, 2007 amounted to 2.86%, 2008 amounted to 8.57%, 2009 amounted to 14.29%, 2010 amounted to 18.57%, 2011 amounted to 20% and 2012 amounted to 14.29%. The years with the highest percentage of publication were 2010 and 2011, followed by the years 2009 and 2012.

By analyzing the objectives proposed by the studies, they were organized into 25 research themes, which are presented in Table 3. The issues of main interest of research covered care in the administration of chemotherapy (14.08%), side effects (14,08%)

and women with breast cancer and cervical cancer (14.08%).

Table 3. Research themes, in the production on nursing and chemotherapy. SciELO, LILACS, BDNF and MEDLINE. 2002 to 2012.

Research themes	n	%
Care in the administration of chemotherapy	10	14.29
Women with breast cancer and cervical cancer	10	14.29
Side effects	9	12.86
Care needs as perceived by patients and family members	7	10.00
Patient-team relationship	4	5.71
Chemotherapy in children and adolescents	4	5.71
Quality of life	3	4.29
Impact of cancer	2	2.86
Woman with cancer	2	2.86
Sociodemographic profile	2	2.86
Spirituality and cancer	2	2.86
Alternative therapies	2	2.86
Sleep quality in the elderly	1	1.43
Music in the therapeutic process	1	1.43
Central venous access	1	1.43
Oncology injury	1	1.43
Children with cancer	1	1.43
Men with cancer	1	1.43
Rights of patients with cancer	1	1.43
Maternal care in pediatric oncology	1	1.43
Therapeutic play	1	1.43
Informative and educational material	1	1.43
Body image	1	1.43
Perceptions about sexuality	1	1.43
Ambience	1	1.43
Total	70	100.00

In these studies, the most common goals of research and knowledge production were: the need to prepare and follow-up protocols in the administration of chemotherapy; care for the extravasation of chemotherapeutic; the importance of guidelines and nursing care provided to patients in chemotherapy treatment; the discomfort caused by the side effects of chemotherapy treatment and the importance of controlling these symptoms through pharmacological protocols or complementary therapies, chosen by patients in treatment or indicated by health professionals.

The results also highlighted the relevance of studies performed by nursing on complementary practices to better guidance to patients and the importance of research about women with breast cancer and cervical cancer due to the incidence of the disease and its care demands. Results also highlighted

the interest in developing research involving the understanding of women on preventive care related to breast cancer and cervical cancer, focusing on self-care.

Concerning the design of the studies, we identified 18 types of different approaches, with the predominance of qualitative research. Table 4 presents the designs found.

Table 4. Study design, in the production on nursing and chemotherapy. SciELO, LILACS, BDENF and MEDLINE. 2002 to 2012.

Study design	N	%
Description and/or quantitative exploratory	15	21.43
Exploratory and/or qualitative descriptive	13	18.57
Qualitative	12	17.14
Descriptive and/or exploratory	8	11.43
Observational	4	5.71
Experience report	3	4.29
Quantitative	3	4.29
Phenomenological	2	2.86
Evaluative and descriptive	1	1.43
Case Study	1	1.43
Ethnographic	1	1.43
Critical incident technique proposed by John C. Flanagan	1	1.43
Narrative review	1	1.43
Literature review	1	1.43
Experimental	1	1.43
Convergent-Care	1	1.43
Integrative review	1	1.43
Qualitative-quantitative	1	1.43
Total	70	100.00

Regarding the analysis of data supported by a theoretical framework, it was observed that

most studies (75.71%) did not adopt this scientific strategy. Table 5 shows the results.

Table 5. Theoretical framework used in the production of nursing and chemotherapy. SciELO, LILACS, BDENF and MEDLINE. 2002 to 2012.

Theoretical framework of the study	n	%
No specific theoretical framework	53	75.71
Phenomenology	2	2.86
Roy Adaptation Model	2	2.86
Methodological theoretical thinking of the interpretative anthropology	1	1.43
Critical incident technique proposed by John C. Flanagan	1	1.43
Creativity and sensitivity technique named Almanac	1	1.43
Bioecological Model of Human Development by Urie Bronfenbrenner	1	1.43
Quality of Life Questionnaire Core-30 (EORTC QLQ-C30)	1	1.43
Observation Scale of Behavior Distress (OSBD).	1	1.43
Leininger's Theory	1	1.43
Dorothea Orem's Theory	1	1.43
Sleep Quality Index by Pittsburgh; Fatigue Scale-revised by Piper and Subjective Measurement Scale of Pain	1	1.43
National Scale Cancer Common Toxicity Criteria (NCI-CTC)	1	1.43
King's Theory of Goal Attainment	1	1.43
Evaluation process proposed by Donabedian	1	1.43
Existential analysis by Viktor Emil Frankl.	1	1.43
Total	70	100.00

DISCUSSION

From 1991 to 2010 there was an increase of 645.28% in undergraduate courses in Nursing. This expansion occurred predominantly in the Southeast region of Brazil, which absorbs 43% of all courses in the country, followed by the Northeast region, with 24.12%, Southern region, with 14.61%, the Midwest, with 10, 96%, and North, which has only 7.3% of courses.⁷⁻⁹

In addition to the graduation expansion occurred in the last 30 years, there has been also the expansion of the postgraduate system. In nursing area, in 1974, the country had two Master degree courses in nursing. In Triennial Assessment 2007-2009, the nursing area had 41 postgraduate programs and 61

courses accredited by CAPES, being 20 doctorates, 38 academic masters and three professional master's degrees. In 2010, postgraduate in nursing finished with a total of 48 programs, totaling 72 courses, distributed as follows: 42 Academic Masters, 23 Doctorates and seven Professional Masters. From 2007 to 2009 139,736 people received masters and doctors degrees, with 99,645 in the academic master's degree, 8,086 in professional master's degree and 32,005 in doctorate.⁷⁻¹⁰

Given these quantitative results, one can understand that the most of the first author's degree percentage found in this study has been with masters and nurses degrees. Added to this reality there is the requirement of Postgraduate Programs for the production and

dissemination of studies, both for entering the master as to the continuity of doctorate training. It can still be seen that the nurse specialists have produced little knowledge in this area of research, however, despite the production of nurses being the second highest, it was identified in the findings that these professionals are, in most publications, linked to institutions of education, which strengthens the bond of these professionals with the development of postgraduate courses.

The results found here, as to the institutional affiliation of the first author, are similar to the results found by bibliometric study in nursing scientific production on the theme hematopoietic stem cell transplant¹¹ and by integrative review of Brazilian production in oncology nursing,¹² that highlight the production of the Universities of São Paulo and Rio de Janeiro. However, in this study, it also highlighted the production of educational institutions of the state of Minas Gerais.

The percentage of production by federative unit found in this research is proportional to the offer of graduate and postgraduate courses in Brazil, that is, Southeast offers 294 graduate and 19 postgraduate courses, Northeast 165 graduate and nine postgraduate courses, South 100 graduate and nine postgraduate, Midwest 75 graduate and three postgraduate, North 50 graduate and postgraduate courses.⁷ Thus, it is evidenced the contribution of training courses in the production of scientific knowledge in nursing.

It is noteworthy that, in the Southeast, the first Postgraduate and Graduate Programs in Nursing were established and it still has most of these programs.¹² However, there are over 270 Brazilian hospitals qualified to treat cancer. All Brazilian states have at least one hospital qualified in oncology.¹³ So before this universe and the high incidence of cancer in Brazil, it appears that the production of knowledge in the field of chemotherapy in the Brazilian scenario is still incipient.

For the dissemination of knowledge, the authors chose, in most cases, by journals linked to educational institutions in Southeastern Brazil and by publication in the *Revista da Associação Brasileira de Enfermagem*. The preference for publication in the *Revista Brasileira de Enfermagem* and in the *Revista Latino-Americana de Enfermagem* was also evident in integrative review study on the Brazilian production in oncology nursing.¹²

Approximately 60% of the publications were made in journals with stratum A2 and B1 in the Classification QualisCAPES Journal. This

finding demonstrates the quality of production of studies.

Qualis is the set of procedures used by CAPES for stratification and assessment of the value of intellectual production of postgraduate programs. The journal classification is performed for the areas of assessment and is updated annually. Eight quality indicative, or strata, were defined; A1, the highest stratum; A2; B1; B2; B3; B4; B5 and C, stratum with zero weight.¹⁴

As for the number of research publications per year, it was observed in this study and in others that have also investigated the production in oncology^{11,12,15} that the number of publications despite incipient has been progressively increasing. Considering that clinical oncology emerged as science in the 80s, this fact justifies the present scenario, since, as a developing science, the oncology nursing area also accompanies this expansion of knowledge.

Study by the National Cancer Institute (INCA), with professional nurses of the five territorial regions of Brazil, states that nurses working in the public health system refer to the lack of specialist nurses in oncology and the need for qualification of nursing across the care line from the less complex to the most complex procedures.¹⁶ This result justifies, even though partially, the incipient number of publications from 2002 to 2012, and the production of knowledge in oncology nursing, especially in the first six years of the time frame set for this study.

In this research, research themes were predominantly directed to the administration of intravenous chemotherapy, its side effects and the care of women with breast and cervical cancer undergoing chemotherapy. In this context, there is a concern with nursing care, which was also found in other studies.

Study on HSCT nursing highlighted investigations on care and management of nursing care.¹¹ In a study on the production of Anna Nery School of Nursing in oncology, results show the trend of research on aspects related to the assistance and the organization of the care process, to the training of human resources and organization of health and nursing services. This study also states that this trend follows the scientific production of Brazilian nursing whose predominance of subjects studied is related to care and organizational areas.¹⁵

Integrative review, as quoted above, also highlighted the focus of research in Oncology involving nursing care actions, the prevention of cancer and the relationship of the nursing staff who works with cancer patients.¹²

Another integrative review, which investigated the quality of life in cancer patients, says that side effects diminish the quality of life, and the most prevalent toxicities were gastrointestinal, presented by nausea, diarrhea and vomiting, followed by hematological toxicity with neutropenia, anemia, leukopenia and thrombocytopenia.¹⁷

Given the findings, we identified the influence of the difficulties encountered in nursing practice for patient care in chemotherapy in the choice of studies research topics. For despite national and international publications in the field, in clinical practice, nurses still face doubts and difficulties regarding the best choice of venous access, the best puncture device and its attachment, the precise care to prevent extravasation of chemotherapy, and when overflows occur which the best care are to be instituted, among other difficulties.

This fact is due to the still insufficient production to standardize the nursing care of the patient with cancer, regarding the prevention, diagnosis, treatments and its side effects, rehabilitation and palliative care. It is understood that much remains to be investigated and built as a body of knowledge for the performance of oncology nursing. A strategy for improving care is the construction of protocols built from evidence-based research, still incipient in the country. Another alternative is the review studies that bring together diverse knowledge.¹⁸⁻²⁰

The study design chosen by the majority of the studies was the qualitative method. This method is widely used in social research because it is a form of research that shows the subjective dimension, addressing the space of emotions, experiences, feelings, beliefs and perceptions, whose nature does not allow measurement as it relates to the uniqueness. This approach is interested in the micro social, based on words, stories and narratives, using the inductive method, and the open interview as one of the privileged techniques to obtain information.^{21,22} The choice of this design suits the defined research themes as objects of study.

As for the theoretical framework, most studies did not choose a specific theoretical framework, to support analysis of the results, but opted for analysis from the results of studies related to the topic of research. The choice of theoretical support is personal, however, in the case of study, in most cases, qualitative, adopting a specific theoretical framework could have further contributed to the quality of the knowledge produced,

because it would better define the look of researchers and the built analysis.

CONCLUSION

The quantitative aspects of scientific production identified in nursing publications at the national level from 2002 to 2012, related to chemotherapy show incipient production in the area but also show development in a vertiginous way in the last four years of the research period.

We emphasize the quality of production, as most publications occurred in journals classified at higher strata in QualisCAPES classification and production performed by professionals with master's graduate degrees and linked to educational institutions of southeastern Brazil, the largest production. This demonstrates that the production of knowledge in nursing is still strongly linked to Postgraduate Programs in Brazil.

As for scientometric aspects, it can be said that nursing, active in oncology, gives priority to research by the qualitative method and shows interest in the search for answers to better qualify nursing care in the administration of chemotherapy treatment, its side effects, and care of women with breast cancer and cervical cancer. It is noticed that these priority focus of research are understood by professionals as contributions to solving problems in the practice of care for people undergoing chemotherapy treatment. However, it is noticeable that much still needs to be accomplished, politically, in the public health system to meet all the demands of need for knowledge production in the area of cancer and oncology nursing.

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