



Nursing and hematopoietic stem cell transplantation: scientific production from 1997 to 2007*

Enfermagem em transplante de células tronco hematopoéticas: produção científica de 1997 a 2007

El papel de la enfermería en el trasplante de células tronco hematopoyéticas: producción científica de 1997 a 2007

Nen Nalú Alves das Mercês¹, Alacoque Lorenzini Erdmann²

ABSTRACT

Objective: To identify the existing nursing publications in the period 1997 to 2007 relating to the topic of bone marrow transplantation and its main characteristics. **Methods:** Bibliometric study of scientific productions indexed on the following data bases: BDENF, LILACS, SciElo, CEPEn and CAPES's theses and dissertations data bank, using the key words: nursing and bone marrow transplantation, in the period from 1997 to 2007. **Results:** Were included 37 papers nationwide, including 17 dissertations, 2 theses and 18 articles, published in Brazilian magazines, related to nursing care, organization and administration of bone marrow transplantation services, quality of life, psychological suffering and knowledge production. **Conclusions:** The scientific production, even if quantitatively small, is increasing and it is based on theories, concepts and methods, primarily qualitatively oriented.

Keywords: Bone marrow transplantation; Nursing research; Scientific and technical publications

RESUMO

Objetivo: Identificar as publicações de enfermagem existentes no período de 1997 a 2007 referentes à temática do transplante de medula óssea e suas principais características. **Métodos:** Estudo bibliométrico das produções científicas indexadas nas bases de dados: BDENF, LILACS, SciElo, CEPEn e Banco de Dissertações e Teses da CAPES, utilizando os descritores: enfermagem e transplante de medula óssea no recorte temporal de 1997 a 2007. **Resultados:** Foram incluídos 37 trabalhos em âmbito nacional, sendo 17 dissertações, 2 teses e 18 artigos publicados em periódicos brasileiros, que abordam o cuidado de enfermagem, organização e gerenciamento de Serviços de Transplante de Medula Óssea, qualidade de vida, sofrimento psíquico e produção de conhecimento. **Conclusões:** A produção científica, mesmo que quantitativamente pequena, está em ascensão. E está baseada em teorias, conceitos e métodos, principalmente de orientação qualitativa.

Descritores: Transplante de medula óssea; Pesquisa em enfermagem; Publicações científicas e técnicas

RESUMEN

Objetivo: Identificar las publicaciones de enfermería existentes en el período de 1997 a 2007 referentes a la temática del trasplante de médula ósea y sus principales características. **Métodos:** Estudio bibliométrico de las producciones científicas indexadas en las bases de datos: BDENF, LILACS, SciElo, CEPEn y en el banco de disertaciones y tesis de la CAPES, utilizando los descriptores: enfermería y trasplante de medula ósea en el intervalo de 1997 a 2007. **Resultados:** Fueron incluidos 37 trabajos del ámbito nacional, siendo 17 disertaciones, 2 tesis y 18 artículos, publicados en periódicos brasileños, que abordan el cuidado de enfermería, la organización y administración de los Servicios de Trasplante de Médula Óssea, la calidad de vida, el sufrimiento psíquico, y, la producción de conocimiento. **Conclusiones:** La producción científica, cuantitativamente pequeña, está aumentando; ella está basada en teorías, conceptos y métodos, principalmente de orientación cualitativa.

Descriptores: Transplante de médula ósea; Investigación en enfermería; Publicaciones científicas y técnicas

* Study developed in the Federal University of Santa Catarina – UFSC – Florianópolis (SC), Brazil.

¹ Ph.D in Nursing, Adjunct Professor, Federal University of Paraná – UFPR – Curitiba (PR), Brazil

² Ph.D in Philosophy of Nursing, Professor in de Federal University of Santa Catarina – UFSC – Florianópolis (SC), Brazil

INTRODUCTION

The bone marrow is used as a strategic treatment for a variety of immune deficiencies: oncological diseases, hematologic, oncohematological, metabolic disorders, such as: leukemia, lymphoma, myeloma, aplastic anemia, myelofibrosis, myelodysplastic syndromes, thalassemia major, primary cell immunodeficiency, germinative cell tumor, among other potentially lethal diseases⁽¹⁾. The beginning of early hematopoietic stem cell transplantation (HSCT), in Brazil, occurred in 1979 at the *Hospital das Clínicas*, linked with the Federal University of Parana⁽²⁾. Current studies show that the achievements of HSCT has been growing over the past 15 years, on average are performed, in the world, 40,000 each year⁽³⁾.

The HSCT is not presented as a totally successful therapeutic method because is an aggressive procedure that can allow the patients cure (complete disease remission) or cause his death. This contrast exists because of the immunosuppression caused by the pre-conditioning regimen for Bone Marrow Transplantation (administration of chemotherapy drugs in high doses for treatment of main diseases), that leaves the patient vulnerable to complications that may cause death. Thus, around 40% of patients undergoing HSCT may have a fatal clinical outcome⁽⁴⁾.

The HSCT can be divided into three types, depending on the stem cell donor, or hematopoietic progenitors-HPC: 1- the allogeneic HSCT, where progenitor cells are derived from a genetically different donor, HLA (human leukocyte antigens) compatible or not, related or not; 2- the HSCT autologous, where the utilized progenitor cells belongs to the patient; and, 3- the HSCT syngeneic, where the utilized progenitor cells belongs to the identical twin brother⁽⁵⁾.

The HSCT process involves actions that are highly complex, thus requires a multidisciplinary team able to assist the patient and family in all stages of the process. Patients with HSCT go through six basic stages, they are: 1- the decision to undergo the transplant, 2- the waiting for admission, 3- the conditioning regimen, 4- the transplantation, 5- the immunosuppression, and 6- the hospital discharge⁽⁶⁾. The occurrence of pancytopenia, the expectation of 'getting' the bone marrow, the gradual proliferation of cells (successful infusion of stem cells) and the potential for complications of various kind (can lead to death or affect significantly the quality of life) generate anxiety and tension on the patient, his family and also on the health team that participates in the process.

The Health Ministry has standardized the policy for bone marrow transplantation, through Decree No. 931/2006, approving the Technical Regulation for Hematopoietic Stem Cells Transplantation, establishing regulations and technical criteria indicated for bone marrow transplants and other hematopoietic precursors. Also, set the standards for authorization, operation and renewal of authorization of establishments-teams that could perform HSCT, as well as for accreditation/qualification in the National Health System⁽¹⁾.

Over the past 20 years, studies related to HSCT, in various areas of knowledge, contributed to the improvement of technical procedures for this therapeutic method, which is no longer an

experimental strategy, being considered now a conventional method for treatment of various diseases, mainly related to oncology and hematology. Currently, however, it has been realized that there is a significant change in the fields of research, because there are an increasing number of studies, mainly in the areas of nursing and psychology that aim at understanding the problems related to care, quality of life, and other aspects (like: psychosocial, organizational and professionals).

The production of knowledge has been a constant concern in nursing; however it has been found, in Brazil, a little nursing production in the field of HSCT. Thus, it is necessary that nurses develop studies and research on the field of bone marrow transplantation. The construction of knowledge that can aid the design of scientific literature and provide tools that can be used in practical assistance, in management and in nursing education, as well as for helping to carry out further studies, affords to see a perspective of the future trends in the area. It is worth mentioning, that, this is an area that presents a consistent production, but numerically small when compared to other productions of the Brazilian Nursing.

OBJECTIVE

Identify the existing publications of nursing in the period 1997 to 2007 related to the topic of bone marrow transplantation and its main characteristics.

METHODS

This is a bibliometric study, conducted in scientific production of nursing indexed in the following databases of nursing: Nursing Databases - BDENF, Latin American Literature in Sciences of Health - LILACS, Scientific Electronic Library Online - SciELO, Information Catalogs on Research and Researchers at the Center of Studies and Research in Nursing - CEPEn, the Brazilian Nursing Association and the Data Bank of dissertations and theses of the Coordination of Improvement for Higher Education Personnel - CAPES, using the keywords nursing and bone marrow transplantation to perform a broader screening of existing publications in those databases. It was considered appropriate to use such terms, which are comprehensive, taking into account that more specific keywords could restrict the number of references located. The time frame covered the period from 1997 to 2007. We adopted the bibliometric study, which is used to quantify the processes of written communication, and employment indicators to measure the scientific production⁽⁷⁾.

Initially, we proceeded to check the titles, authors and abstracts, aiming to eliminating the repeated publications. Thereafter, the abstracts were submitted to a selective preliminary reading aiming at determining the material actually relevant to this study. The reading was guided by the following inclusion criteria: articles, dissertations and theses in nursing, indexed and published between 1997 and 2007, that showed material of study in bone marrow transplantation in nursing, configured in the categories of: research, reviewing, reports of experience/cases, and reflection. Moreover, it was decided to establish the criteria for exclusion, which ignored publications of articles and summaries of

congresses, conferences, symposia and other events.

It was performed a complete analytical reading on each of the selected papers. The results were tabulated, identifying five dimensions of analysis: mode of scientific production; institution of precedence, subjects studied, type of study design, and theoretical framework.

RESULTS

The systematic review consisted of 37 local papers. Of these, 17 were dissertations, 2 theses and 18 articles published in 11 Brazilian journals. According to the Coordination of Improvement of Personnel of Higher Education (CAPES), these journals are classified according to the index Qualis: three Qualis A2 (8 papers), five Qualis B1 (six papers), two Qualis B2 (two papers) and one Qualis B3 (two papers)⁽⁶⁾.

We observe on Chart 1 that the nursing production in bone marrow transplantation, recorded in the graduate databases, is small, with 19 productions in 10 years being 89,5% in master courses and 10,5% in doctorate courses.

It was observed that of 19 productions - dissertations and

theses - found: 1 was descriptive- qualitative using as reference Imogene King; 1 was social-historical qualitative, having as reference Pierre Bourdieu; 1 was a case study, qualitative-descriptive, with quantitative methodology, supported by Ramey; 1 was descriptive-comparative and quantitative; 4 were exploratory-descriptive and qualitative; 1 was a case study, qualitative under the perspective of Kouzes and Posner; 1 was qualitative, supported by the concepts of Benner and the United Kingdom Center; 1 was exploratory-qualitative, having as referential the social representations; 3 were integrative literature review; 1 was descriptive-quantitative; 1 was comparative-retrospective and quantitative; 1 was descriptive-qualitative and quantitative, having Morris as referential; and, 1 was correlational-qualitative and descriptive.

Table 1 shows that the production is concentrated in Universities of Sao Paulo (57,89%), highlighting the highest percentage (31,58%) that belongs to the Nursing School of Ribeirao Preto-USP, and 15,79% to the USP School of Nursing. The state of Rio de Janeiro, also stood out, with 36.85% produced by the universities, and 15,79% by the Anna Nery School of Nursing-UFRJ. The Graduate Program in Nursing in

Chart 1 – Nursing productions – dissertations and thesis in bone marrow transplantation, by theme and author, in the period 1997 to 2007. Brazil, 2008.

Academic Production Themes <i>Strictu sensu</i>	Author	Dissertation	Thesis
The reinsertion of the transplanted client of bone marrow in the context of work: nursing contributions.	Adão, CAE	1	-
The creation of a center for bone marrow transplantation in specialized hospital: a challenge for the service of nursing of the INCA (1982-1984).	Barreto, EMT	1	-
Psychological distress and work organization: the case of nurses in the sector of clinical hematology and bone marrow transplantation in a university hospital in Rio de Janeiro.	Silva, SM	1	-
Bone marrow transplantation: proposal for dimensioning human resources for nursing care.	Torres, RCM	1	-
Infection in the local output of the subcutaneous tunnel in catheters type Hickman in allogeneic bone marrow transplantation, related to the antiseptic based in polyvinylpyrrolidone and glutamate of chlorhexidine.	Rocha, IF	1	-
The quality of life at the work place X frequent stressful factors found by professional nurses in the bone marrow transplantation.	Venâncio, CA	1	-
Leadership in nursing in the night shift: practices in the field of oncology-hematology and bone marrow transplantation in the HUCCF /UFRJ.	Silva, SCSB	1	-
The family in assistance to children and adolescents undergoing bone marrow transplantation - BMT: a stage after BMT.	Anders, JC	1	-
The professional after nursing residency in the National Cancer Institute and his specialized practice.	Santana, CJM	1	-
Nursing care and the Hickman catheter: the search for evidence.	Silveira, RCCP	1	-
Crisis in the family and bone marrow transplantation: evidence for nursing assistance.	Matsubara, TC	1	-
Potential medicines interactions: a study of antimicrobial used in patients undergoing bone marrow transplantation.	Guastaldi, RBF	1	-
Incidence of infection related to semi-implantable catheter in patients undergoing allogeneic bone marrow transplantation.	Felicetti, MAE	1	-
Request of oriented attention for patients undergoing bone marrow transplantation.	Pontes, L	1	-
The analysis of daily life and the nursing care offered to patients undergoing bone marrow transplantation: a contribution to an assistance that should be thought and practiced.	Gonzalez, GRR	1	-
The Mucositis in the patient subjected to BMT under the communication theory of Morris.	Soler, VM	1	-
Quality of life and bone marrow transplantation in hematologic malignancies.	Silva, LMG	1	-
The bone marrow transplantation and its impact on the quality of life of children and adolescents who have experienced it.	Anders, JC	-	1
The knowledge generated by nursing in bone marrow transplantation in Brazil.	Soler, VM	-	1
TOTAL		17	2

Table 1 – Dissertations and theses of nursing in bone marrow transplantation according to institutions and chronology. Brazil 2008.

University	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	n	%
ENSP/FIOCRUZ	-	-	-	-	1	-	-	-	-	-	-	1	5,26
UNICAMP	-	-	-	-	-	-	-	1	-	-	-	1	5,26
UNIFESP	-	-	-	-	-	-	-	1	-	-	-	1	5,26
UNIRIO	-	-	-	-	-	-	1	-	-	-	-	1	5,26
UFPR	-	-	-	1	-	-	-	-	-	-	-	1	5,26
UERJ	-	-	-	-	-	-	1	1	-	-	-	2	10,54
UFRJ	-	-	-	-	-	1	1	1	-	-	-	3	15,79
EE/USP	-	-	-	2	-	-	-	-	-	1	-	3	15,79
EERP/USP	-	-	1	-	-	1	-	1*	2	1*	-	6	31,58
TOTAL	-	-	1	3	1	2	3	5	2	2	-	19	100

* Ph.D theses

Table 2 – Articles about bone marrow transplantation found in nursing journals published in the period of 1997 to 2007. Brazil, 2008

Journal	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	n	%
Acta Paulista de Enfermagem	-	-	-	-	-	-	-	-	1	-	1	2	11,10
Cogitare Enfermagem	-	-	-	1	-	-	-	-	-	-	1	2	11,10
Rev. Bras. de Enfermagem	-	-	-	-	-	-	-	-	1	-	-	1	5,55
Rev. de Enfermagem Escola Anna Nery	-	-	-	-	-	-	1	-	-	-	1	2	11,10
Rev. Eletrônica de Enfermagem	-	-	-	-	-	-	-	-	-	-	1	1	5,55
Rev. Enfermagem UERJ	-	-	-	-	-	-	-	-	-	-	1	1	5,55
Rev. Escola de Enfermagem - USP	-	1	-	-	-	-	-	-	-	-	1	2	11,10
Rev. Gaúcha de Enfermagem	-	-	-	-	-	-	-	-	1	-	-	1	5,55
Rev. Latino-Americana de Enfermagem	1	-	-	-	1	-	-	1	-	-	1	4	22,30
Rev. Medicina	-	-	-	1	-	-	-	-	-	-	-	1	5,55
Rev. Paulista de Enfermagem	-	-	-	-	-	-	1	-	-	-	-	1	5,55
TOTAL	1	1	-	2	1	-	2	1	3	-	7	18	100

the Federal University of Parana contributed with 5,26%. It should be stressed that in these three states there is a greater concentration of Bone Marrow Transplantation Services, the oldest in Brazil. This result also shows that programs that had higher production are located in the southeastern region of Brazil, which has more programs, thus contributing to concentrate the highest percentage of the total production (94.74%).

Table 2 shows that 18 articles were published in Brazilian journals, in that period; being 44,4% (08) from dissertations and theses, 27,8% (05) of articles from post-graduate studies strictu sensu, 22,30% (04) studies developed by nurses from the Bone Marrow Transplantation Services, and 5,5% (01) were produced by a nursing research team, in an institution of higher level, supported by CNPq. Related to the category of items,

44,4% (08) were from research, 16,7% (03) from integrative review, 16,7% (03) from literature review, 11,1% (02) from case studies and 11,1% (02) from reflection. The Latin American Journal of Nursing published 22,30% of the research produced by nursing in bone marrow transplantation during that period.

The Articles published in journals were:

Acta Paulista de Enfermagem: Araújo KM, Brandão MAG, Leta J. A profile of nursing research in Hematology, Hematology and Bone Marrow Transplantation (2007); and, Silveira RCCP, Galvão CM. Nursing care and the Hickman catheter: the search for evidence (2005);

Cogitare: Fermino TZ, Carvalho, EC. The therapeutic communication with patients in bone marrow transplantation: Profile of verbal behavior and effect of educational strategy (2007);

and, Peres AM. Analysis of nursing activities in bone marrow transplant services (2000);

Rev. Bras. de Enfermagem: Anders JC, Lima RAG; Rocha SMM. Experience of parents and other relatives in caring for children and adolescents after bone marrow transplantation (2005);

Rev. Elet. de Enfermagem: Lacerda MR, Lima JBG, Barbosa R. Nursing practice in transplantation of hematopoietic stem cell (2007);

Rev. Enf. Esc. Anna Nery: Santana, CJM, Lopes GT. The specialized care of a professional after residency in the nursing home in the National Cancer Institute (2007);

Barreto EMT, Lourenço LHSC, Almeida AJ. The National Center for Bone Marrow Transplantation in the National Cancer Institute: the early challenges of implementation (2003);

Rev. Enf. UERJ: Moreira MC, Silva SCSB. Leadership practices adopted by nurses in the night shift (2007);

Rev. Esc. Enf. USP: Pontes L, Guirardello EB, Campos CJG. Attention services demanded by patients in the bone marrow transplantation unit (2007); and, Pinheiro EM, Rocha IF, Silva MCM. Identifying types of touch performed in a nursing care outpatient service (1998);

Rev. Lat.-Amer. de Enf.: Matsubara TC, Carvalho EC, Canini SRMS. Family's crisis in the context of Bone Marrow Transplantation (BMT): an integrative review (2007); Anders, JC, Lima RAG. Growing up as a bone marrow transplanted: impact on the quality of life of children and adolescents (2004);

Silva LMG. Brief reflection on self-care in hospital discharge planning in post-bone marrow transplantation (BMT): case study (2001);

Riul S, Aguillar OM. Contribution to the organization of

bone marrow transplantation services and to the nursing assistance. (1997);

Rev. Gaúcha de Enf.: Magalhães AMM, Matzenbacher BCM, Pacheco CRM. Nursing diagnosis of patient who underwent allogeneic bone marrow transplantation: case study (2005);

Rev. Paulista de Enf.: Aquino TP, Sanna MC. Nursing care in the post-bone marrow transplantation in acute lymphocytic leukemia in childhood (2003);

Rev. Medicina (Rib. Preto): Anders JC, Soler VM, Brandão EM, Vendramini EC, Bertagnolli CLS, Giovani PG, Carvalho EC, Suen VMM, Marchini JS, Voltarelli JC. Aspects of nursing, nutrition, physiotherapy and social work in bone marrow transplantation (2000).

In Table 3, were identified 21 objects of study related to the themes, focusing especially on those related to methods for caring patients and families, besides nursing administration and management/assistance models, other topics covered were production of knowledge and professional practice. It was observed that the subjects most published were: 35.4% focused on care, of which 16.2% were related to care for the child undergoing HSCT; 18.9% of the productions were related to psychosocial aspects of patients, family and nursing; also 18.9% related to issues of organization or management; and 8.1% related to the quality of life. These results showed that care - the essence of nursing - have been privileged in these studies, from the perspective of a theoretical approach.

Of the 21 studied objects, it is worthwhile mentioning that 15 were developed in graduate programs, in nursing research, in academic production (theses and dissertations), demonstrating the quest for systematic knowledge building.

Table 3 – Objects of study of the productions of nursing, in bone marrow transplantation, according to the kind of production, in the period from 1997 to 2007. Brazil, 2008

Object	Article journal	Dissertation	Thesis	Total
Performance of the multidisciplinary team in BMT	1	-	-	1
Therapeutic communication	1	-	-	1
Precaution:				
to the child	1	3	-	4
self-care	1	-	-	1
with central venous catheter	1	1	-	2
with mucositis	1	-	-	1
in bone marrow transplant	1	-	-	1
familiar to child and adolescent transplanted	1	1	-	2
attentions demands to the individual transplanted	1	1	-	2
Nursing Diagnoses	1	-	-	1
Family coping	1	1	-	2
Coping of the transplanted individual	-	1	-	1
Psychological distress	-	2	-	2
Drug interaction	-	1	-	1
Nursing leadership	1	1	-	2
BMT organization and management services	3	1	-	4
Organization and Personnel management	-	1	-	1
Oncology Professional practice of the nursing specialist in BMT	1	1	-	2
Production of nursing knowledge in BMT	1	-	1	2
Quality of life	1	1	1	3
Reintegration and labor rehabilitation of transplanted individuals	-	1	-	1
Total	18	17	2	37

DISCUSSION

The reduced number of publications shows beforehand the low production and socialization of nursing knowledge in bone marrow transplantation, although Brazil has 32 *strictu sensu* post-graduate courses in nursing: 29 master courses, 2 professional master degrees, and 14 doctoral courses⁽⁹⁾ and, 40 Bone Marrow Transplant Services⁽¹⁰⁾.

A characteristic of the production was the concentration of scientific production in the Southeast (94.74%), pointing out the need for developing studies and research in other regions. The largest concentration of BMT services and post-graduate nursing courses are concentrated in that region, being the cause of the concentration of research⁽¹¹⁾.

It can be inferred that the themes associated with nursing in bone marrow transplantation have not been fully explored. So, it is necessary to research and to publish for a better understanding of this object. The insignificant number of papers on research and review, is unfavorable for nursing, because it is known that such work enables the design of scientific literature on the subject, and give valuable information for further research, and therefore this scientific production has an undeniable value⁽¹²⁾.

These data demonstrate the little nursing participation in BMT services, in research and in dissemination of knowledge produced in their daily activities. It is known the large laboratory of knowledge production, but this is expressed mostly in congresses presentations by means of posters and oral communication, restricting the access of nursing and other professionals in general to that information. It could be inferred that several factors explain the little scientific production, which are also presented by Soler⁽¹³⁾, such as lack of knowledge of scientific methodology, little encouragement and fostering on research and publication, reduced presence of nurses in BMT services, and little participation in Masters and Ph.D courses, among others.

REFERENCES

1. Brasil. Ministério da Saúde. Portaria nº 931, de 2 de maio de 2006. Aprova o Regulamento Técnico para Transplante de Células-tronco Hematopoéticas. [citado 2008 Mar 3]. Disponível em: <http://www.anvisa.gov.br/legis/index.htm>.
2. Duley FL. Transplante de medula óssea. *Hematol Hemoter*. 1996;1(2):13-20.
3. Rizzo JD, Wingard JR, Tichelli A, Lee SJ, Van Lint MT, Burns LJ, Davies SM, Ferrara JL, Socie G. Recommended screening and preventive practices for long-term survivors after hematopoietic cell transplantation: joint recommendations of the European Group for Blood and Marrow Transplantation, the Center for International Blood and Marrow Transplant Research, and the American Society of Blood and Marrow Transplantation. *Biol Blood Marrow Transplant*. 2006;12(2):138-51.
4. Tabak DG. Transplante de medula óssea na leucemia mielóide crônica. *Medicina (Ribeirão Preto)*. 2000;33(3):232-40.
5. Azevedo W, Ribeiro MCC. Fontes de células-tronco hematopoéticas para transplantes. *Medicina (Ribeirão Preto)*. 2000;33(4):381-9.
6. Haberman MR. Psychosocial aspects of bone marrow transplantation. *Semin Oncol Nurs*. 1988;4(1):55-9.
7. Oliveira JC. Estudo bibliométrico das publicações de custos em enfermagem no período de 1966 a 2000 [dissertação]. São Paulo: Escola de Enfermagem da Universidade de São Paulo; 2001.
8. Brasil. Ministério da Educação. Coordenação de Aperfeiçoamento de Pessoal de Nível Superior. Classificação de periódicos anais, revistas e jornais. [citado 2008 Mar 3]. Disponível em: <http://qualis.capes.gov.br/webqualis/>
9. Brasil. Ministério da Educação. Coordenação de Aperfeiçoamento de Pessoal de Nível Superior. Cursos recomendados e reconhecidos. [citado em 2008 mar 04]. Disponível em: <http://www.capes.gov.br/avaliacao/recomendados.html>
10. Sociedade Brasileira de Transplante de Medula Óssea. Centros de TMO. [citado 2008 Mar 8]. Disponível em: <http://www.sbtmo.org.br/tmo.html>
11. Araújo KM, Brandão MAG, Leta J. Um perfil da produção científica de enfermagem em Hematologia, Hemoterapia e Transplante de medula óssea. *Acta Paul Enferm*. 2007;20(1):82-6.
12. Alves-Mazzotti AJ, Gewandszadner F. O método nas ciências

CONCLUSIONS

In general, the scientific production of nursing in bone marrow transplantation, in the period of 1997 to 2007, corresponds to production of knowledge, predominantly in: situations experienced by patients and family going through HSCT; demands of patient care; psychosocial aspects (among them: stressors, psychological distress and therapeutic communication); organization and management of BMT centers and services; care, self care and specialized care (among them: with central venous catheters and nursing care); nursing diagnosis; HSCT in children and adolescents, with a multidisciplinary team; quality of life; and, production of knowledge.

The design of production is characterized as descriptive, exploratory, comparative, retrospective, and integrative, with a qualitative and quantitative approach aimed at investigate: the variables and psychosocial effects associated with the patient, relatives and professionals involved in the process of HSCT; the organization of BMT centers and services - leadership and dimensioning of professionals; the assessment of the quality of life; and, the assistance and specialized care.

In addition, those productions relied mostly on theories, concepts and methods of qualitative orientation that facilitate the understanding of experiences with patients, families and professionals involved in HSCT.

If we consider the time frame of the last ten years of production indexed in databases (mentioned above) and also that the HSCT began in Brazil in 1979, the scientific production found even if quantitatively small, appears to be increasing. We believe that it is necessary, that nurses that act in health care and in universities should be motivated by the scientific curiosity of researching and by seeking the answers to many research questions that arise, daily, in the BMT units.

- naturais e sociais: pesquisa quantitativa e qualitativa. São Paulo: Pioneira; 1999.
13. Soler VM. O conhecimento produzido pela enfermagem em transplante de medula óssea no Brasil [tese]. Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo; 2006.