APPLICATION OF THE NURSING MODEL “PRIMARY NURSING” TO THE BONE MARROW TRANSPLANT SERVICE*

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ABSTRACT
Objective: To describe the application of the nursing model “Primary Nursing” to patients submitted to hematopoietic stem cell transplantation.
Method: Convergent-care research conducted from June to December 2016 with 20 nursing professionals from the Bone Marrow Transplant Service of a Brazilian Public Hospital. The results were obtained with the administration of a semi-structured interview. Thematic analysis described by Creswell was used in data analysis.
Results: Six thematic categories based on the applicability of the Primary Nursing model emerged, as follows: Ambience and care process; Knowing the patient; Interpersonal relations; Favorable and unfavorable aspects; Organization of the care process; and Nursing Process.
Conclusion: The study reports improvements and difficulties in the nursing care process with the application the Primary Nursing model, but proved above all to be a viable nursing model for the care of patients submitted to hematopoietic stem cell transplantation.

DESCRIPTORS: Primary Nursing; Nursing Models; Hematopoietic Stem Cell Transplantation; Nursing Oncology; Nursing.

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RESUMO
Objetivo: descrever a aplicação do modelo de Enfermagem Primary Nursing a pacientes submetidos ao transplante de células-tronco hematopoéticas.
Método: pesquisa Convergente Assistencial, realizada de junho a dezembro de 2016, com 20 profissionais de Enfermagem do Serviço de Transplante de Medula Óssea de um Hospital Público brasileiro. Os resultados foram obtidos por meio de entrevista semiestruturada. Os dados foram analisados com base na Análise Temática de Creswell. Resultados: emergiram seis classes temáticas baseadas na aplicabilidade do Primary Nursing, denominadas: A ambiência e o processo de cuidado; O conhecer o paciente; As relações interpessoais; Os aspectos favoráveis e desfavoráveis; A organização do processo de cuidado; e o Processo de Enfermagem. Conclusão: o estudo demonstra melhorias e dificuldades no processo de cuidado em Enfermagem com a aplicação Primary Nursing, mas sobretudo mostrou-se um modelo de Enfermagem viável para o cuidado a pacientes submetidos ao transplante de células-tronco hematopoéticas.

DESCRITORES: Enfermagem Primária; Modelos de Enfermagem; Transplante de Células-tronco Hematopoéticas; Enfermagem Oncológica; Enfermagem.
INTRODUCTION

The main objective of nursing care is to provide care to others, in order to meet the patients’ basic human needs, besides managing care, working in a team, carrying out a broad and interactive process of care, based on scientific knowledge(1).

Compared to other services, nursing care delivered in Bone Marrow Transplant Services (BMTS) is more complex. Several special types of care and specific activities are required, as the procedure is intended to treat quantitative or qualitative bone marrow defects in patients with malignant and non-malignant hematological diseases, immunodeficiencies, inborn errors of metabolism, and solid tumors(2-3).

In the Bone Marrow Transplant Service analyzed, health professionals do not have consistent nursing shifts, which results in discontinuity of care to the patients, who remain hospitalized for approximately 30 days, and prevents the establishment of a caring bond with the patients. Given the aforementioned characteristics of this service, and in order to improve nursing care, we proposed a study based on the Primary Nursing model.

Nursing care models aim to guide professional practice to ensure it is systematized, continuous and efficient. In this regard, the application of the Primary Nursing model is a way of defragmenting the care provided to patients undergoing this type of treatment, as well as promoting the bond between patients-caregivers-health professionals.

The Primary Nursing model was developed by Marie Manthey, a nurse, in the late 1960s in the United States. This model highlights the key role played by nurses in any health care team or hospital organization. It consists mainly of the primary nurse, a named nurse who is identified by name as such to the patient, staff and caregivers, designated as being responsible for a patient’s nursing care during hospital stay; an associate nurse, who works in partnership with the primary nurse or as a substitute in the absence of the primary nurse; clinical nurses (the other nurses in direct care to patients) and nursing technicians called extenders(4).

There are few national and international studies about this model, especially regarding its relationship with nursing care in hematopoietic stem cell transplantation (HSCT). Thus, the model and its application in the Bone Marrow Transplant (BMT) Service should be investigated, since it is believed that this will contribute to the improvement of health services and nursing care and to the advancement of scientific knowledge on the subject. Therefore, the present study aims to describe the application of the Primary Nursing model by the Nursing team to patients undergoing HSCT in the BMT Service.

METHOD

Convergent-care research that includes the stages of conception, instrumentation, investigation and analysis(5), developed in a public hospital and reference in HSCT in Brazil. The Bone Marrow Transplant (BMT) Service has 15 hospital beds for adult and pediatric patients. The multidisciplinary team consists of physicians, nurses, nursing technicians, nutritionists, psychologist, an occupational therapist, a social worker and a dental surgeon.

The nursing team is composed of 40 nurses and six nursing technicians. Of these, 17 nurses and three nursing technicians accepted to participate in the study and met the inclusion criterion: nursing professional working in direct care to patients submitted to HSCT.

Professionals on leave and those who had been working at the BMT service for less than three months were excluded. Anonymity was ensured with the use of alphanumeric coding: nurses were identified by letter N and nursing technicians by letters NT, followed by the number of participants corresponding to each category.
From June to December 2016, 38 workshops were held in the meeting room of the BMT Service, which were guided by the following items: theme and analysis of the project, focus, generating issues, framework, flexible planning, sequence and organization of the meetings and use of group dynamics techniques (6). In the first workshops, awareness, presentation and guidance were the topics addressed, and the subsequent topics concerned the application of the Primary Nursing model.

All nursing professionals who worked at the BMT Service were invited to participate in the awareness and presentation workshops in order to know and become familiar with the model. The professionals who agreed to participate in the study were given the Informed Consent form. Subsequently, these professionals participated in the guidance workshop where they watched a presentation on the application of the Primary Nursing model at the BMT Service.

Fixed teams were formed for each two patients, composed of a primary nurse, an associate nurse, clinical nurses and extenders. Approximately every 15 days, follow-up workshops were held with nursing technicians and nurses. They were aimed to discuss positive aspects, obstacles, uncertainties and make observations, in order to collectively construct the application of the model in the BMT Service. The number of participants in each workshop ranged from two to six professionals, as it depended on their availability during working hours.

After the transfer, death or discharge of the patients included in the teams, the professionals’ participation in the study was terminated, and data were collected through a semi-structured interview with each professional, based on the following guiding question: how was the nursing care process with the use of the Primary Nursing model in the BMT Service? The interviews were audio recorded and data was fully transcribed.

The data were submitted to thematic analysis described by Creswell. The steps consist of: organization and preparation of data; reading the data; coding; generation of themes or categories; description; and interpretation of data (7).

For the processing and coding of the data, the program Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires® (IRAMUTEQ), which applies statistical analysis to qualitative textual data was used. One of the forms of presentation of the program analysis is the Descending Hierarchical Classification (DHC) method, which aims to obtain classes of text segments (TS) that have vocabulary similar to each other and concomitantly different from the text segments (TS) of other classes. That is, the DHC groups words that relate to each other and form thematic categories related to the object of study (8).

The research project was approved by the Committee for Ethics in Research on Human Beings under Protocol no. 1,484,379 of 2016, according to the standards of resolution 466/2012 of the National Health Council.

RESULTS

All participants in the study are female, and their length of time working in the BMT service ranged from three months to 25 years.

The results consist in the statements of the participants that were grouped in six thematic categories, as follows:

Ambience and the care process

In this category, ambience comprised all the spaces in which the patients were cared for, including the room where the nursing professionals interacted with the patients and
caregivers and was fully aware of their situation, which favored handover.

When I entered the room I knew what was happening to him, so such information has been useful. I remember times when I knew that the patient had felt dizzy at bath time on the previous day and I was worried about what would happen today. (N17)

When I was taking care of two patients at the same time, I would first enter the room of the patient that got up earlier. I was able to manage these issues that seem insignificant, but that make the difference in a long admission period. (N4)

As I had a greater interaction with the group of patients under my care I usually got more detailed information about them. This was good because it made handover more effective. (N16)

Knowing the patient

The experience with the Primary Nursing model was found to be beneficial to the participants who could closely monitor their patients, ensure continuous care and the establishment of bonds, generating job satisfaction and enthusiasm over the model.

I liked the Primary Nursing model because it allowed me to get to know the patient well. I can better manage care and create a bond of trust with the patients and their families. (N7)

In the Primary Nursing model patient recognition was also a positive aspect ... I was aware that my work had been well done, and other patients had already praised or thanked me in some way, but recognition from the patients I have been taking care of for 25 to 30 days was special. (N2)

The model is good because we get to know the patients well... we know how to interact with them, and there is continuity of care. (N6)

Interpersonal relationships

The mothers of the children were found to be the main caregivers and the individuals with whom the participants of the study established bonds and who inspired confidence in the professional-caregiver relationship.

Talking about issues that had nothing to do with the children’s illnesses so that the mothers who spend 24 hours a day in the hospital could ease their minds was very important to me, and this makes it easier for me to put myself in the place of the mothers of the patients. (NT1)

The model actually facilitated my relationship with the patients... when I am in permanent contact with the patients because I provide care to them, I get to know their mothers, understand their behaviors and their responses. (N1)

The mothers would not feel so safe if they had to talk to a different health professional every day. (N2)

Favorable and unfavorable aspects

The participants were saddened by the suffering of their patients and established bonds with them. However, the patient-nurse interaction was generally considered something positive, and patient care was more efficient with the use of the Primary Nursing model.

I think I would also feel sad if it was another patient, but I may have been a little sadder because of the bond established with that patient. (N2)
We feel sorry for the patients because of the bond created, but now that we are less emotionally shaken we realize that this has made a lot of difference in the care delivered. (N1)

I think that this is an evolution, it is a different way of caring, and we believe that the model really provides a better way of delivering care. (N5)

If there had not been continuity of care, there would have been no interaction, and the bond favors this interaction. I was beside the patient throughout the procedure, and he/she knew I was responsible for him/her (N3)

**The organization of the care process**

In this category, Primary Nursing favored teamwork. However, there were difficulties such as the resistance of nursing professionals who did not participate in the study.

Obviously, in the beginning we always have doubts ... we do not know if everything is going to be fine or if we are going to be overburdened, but this feeling is more associated with the fact that we are facing something unknown, and not with the study itself (N14)

I’ve heard people say that the model does not work and creates problems ... some people have negative thoughts. (N1)

More people should try to implement the model ... When I did not know the model, I did not think it would succeed, I was sure it would fail. (N4)

**The Nursing Process**

In the Primary Nursing model, the participants were able to perform a detailed physical examination, with evaluations and follow-up of the injuries caused by the treatment, such as mucositis. The Nursing prescription involved necessary care targeted to each patient, which improved the quality of the nurses’ work and strengthened the nursing process and Systematization of Nursing Care (SNC).

The SNC made it easier to obtain higher diagnostic effectiveness rates and perform physical examination, with more accurate and customized prescriptions. (N8)

Making nursing diagnoses and changes in prescriptions was faster. On physical examination it was possible to monitor the improvement or worsening of an injury. (N12)

The prescription concerned care that would be actually provided. (N14)

When I used the model, I realized that I knew how to evaluate the progression of the clinical picture or of a mucositis because I have been providing care to the patient every day. (N2)

**DISCUSSION**

In the first category, the speeches addressed how Primary Nursing interfered in the BMT Service environment. Ambience concerns the social, professional and interpersonal physical space, and should provide welcoming, resolutive and human care. It is based on three axes that aimed to ensure comfortability, which is focused on the privacy and individuality of the subjects involved, through action and reflection and facilitation of the work process(9).

Therefore, the model facilitated the application of the environment axes proposed by HumanizaSUS from the patient’s room, the place where care is delivered, and also of the
transplant of hematopoietic stem cells until handover\(^9\).

Handover is part of nursing care planning. Nurses use technical-scientific and interpersonal skills, in this process, with emphasis on communication and management. In order to achieve better planning of nursing care, the healthcare team must perceive handover as a moment of education, reflection and interaction, seeking to reassess conducts, provide mutual growth and a more effective work development\(^10\).

When comparing Primary Nursing with the organization of the current care process in BMT service, the participants reported that the experience provided by the model was positive. They had the opportunity to care for the same patients during the whole treatment, being capable of identifying the possible complications arising from the underlying disease or the treatment and providing continuous nursing care.

A Chinese study conducted in a maternity hospital with 470 pregnant women that compared Primary Nursing with the task-centered nursing model reported improved care due to increased knowledge and patient satisfaction and reduction of clinical complications\(^11\).

This is tangible because Primary Nursing is based on a holistic approach of care, patient-centered care, continuity and transition, aspects that reflect the quality of the care delivered. This model provides for the continuity of care from patient admission to discharge, and care must be provided by the same professional in each period, allowing greater knowledge and better assessment of the needs of each patient, better planning of care and guidance, accurate and appropriate decisions and the promotion of social interaction between professionals, patients and caregivers\(^12\).

Continuity of care is constructed by patients and healthcare professionals with shared responsibility. Health professionals must meet the patients’ needs in a coordinated and integral way\(^13\).

Continuity of care is usually highly valued by patients and health professionals. Scientific evidence suggests that this increases patient and professional satisfaction, decreases costs, and improves health outcomes\(^14\).

The experience with the Primary Nursing model allowed the team to obtain more information about the patients, which was beneficial for the planning of nursing care, for clinical evaluation and for patient-professional interaction.

An Australian study aimed to describe the perception of the multidisciplinary team about the implementation of the Primary Nursing model addressed the multiple perspectives of health professionals. Data was collected approximately one year after the implementation of the model, and the results showed that it favors interaction and individualization of care, autonomy of nurses and closer working relationships. The professionals also became more aware of the importance of the holistic approach to achieve favorable patient outcomes\(^15\).

The application of the model, interaction with patients and caregivers, follow-up of the clinical picture and patient recognition favored professional satisfaction. An environment conducive to nursing practices, the willingness to work and the time spent in work activities in critical units are aspects that promote professional satisfaction. For these reasons, it is important to invest in factors that promote the environment, considering relational aspects and autonomy, and especially the structural aspects of nursing participation in the control of the practices, decision making, management and organizational support for work\(^16\).

A study that compared Primary Nursing with the team and functional nursing models in Finnish hospitals found that professional satisfaction was higher among nurses who used Primary Nursing due to patient accountability, supervision actions and the possibility of making accurate and reliable records\(^17\).

Among the caregivers present at the BMT Service, mothers were the most cited in the respondents’ statements. They were the persons with whom the nursing team established
a close relationship. Therefore, nursing professionals should include guidance to caregivers in the care plan, as well as establish a relationship of support and trust with them, in order to assist the patients in facing the physical, social and psychological changes associated to the treatment (18).

Regarding the favorable and unfavorable aspects of the model, the suffering experienced by health professionals due to the bond established with patients and families and the severity of the patients was reported as an unfavorable aspect. Although for some participants the bond established caused suffering, for others it was perceived as positive, as it provided continuity of care and a good relationship with the patients.

The coexistence between the nursing staff and patients favors the formation of bonds that move beyond a strictly professional relationship, and are based on interaction, exchange of knowledge, experiences and feelings. The bond originated from the close relationship between nurses and patients can be understood as the ability to listen to the human beings perceived in their individuality (19).

The bond established with the patients is possibly related to the length of hospital stay, since they remain hospitalized for a long period of time, which may favor a closer contact with nurses. This is key for humanized care. However, limits must be established. When the bond is created, nurses may identify with the pain of their patients, and this may generate miscellaneous feelings (20).

However, implementing the Primary Nursing model can cause stress to nursing professionals because they are responsible for delivering care to their patients, from hospital admission to discharge. For this reason, it is essential that the nursing managers of health institutions provide sufficient support to the nurses so that they are able to deal with their demanding work (21).

In this study, the participants agreed to experience a different way of performing and planning the nursing care process of patients undergoing HSCT. However, there were doubts, prejudgments and resistance from other professionals of the team.

Resistance to change has several possible causes, but the greater the quantity and quality of information that the individuals involved in the process receive, the greater the sense of belonging to the process, implying more involvement and less resistance (22).

The Systematization of Nursing Care (SNC) and the Nursing Process (NP) are addressed as synonyms by the subjects. However, in the national literature and in care practice, this conception is not widely understood by the professionals, because the terms SNC and NP have been used as synonyms, and lack of time is a complicating factor in the operationalization of the NP (23-24).

In order to enable the SNC practice, a system of nursing application and care that allows the effective use of SNC in the planning and management of care and measurement of care results must be adopted. In this regard, Primary Nursing is a valuable option, since one of its key features is the autonomy of nurses in clinical practice and in the execution of their duties (4).

The Primary Nursing model facilitated the NP in the BMT service, as the physical examination was successfully performed and nursing prescriptions were customized and updated on a daily basis. Accordingly, the nurses who participated in the study identified several clinical disorders that affected the patients, with emphasis to mucositis.

In order to support the scientific character and the quality of nursing care, it is necessary that nurses understand the profile of the susceptible patient, the main etiological factors and the preventive and therapeutic conducts of mucositis and base their practice on the principles of the NP and theories related to this theme (25).

One limitation of this study is the fact that it was conducted in a public institution,
which lacks human resources, making it difficult for health professionals to participate in extra-care activities, e.g. workshops to discuss the proposed model. Moreover, there are scarce national and international studies on the subject, particularly regarding the relationship between Primary Nursing and HSCT.

CONCLUSION

The Primary Nursing model was chosen as the theme of this study due to the need to reduce the high turnover of nursing professionals, in order to improve nursing care in the BMT Service, such as continuity of care and closer relationships between professionals, patients and caregivers, and increased satisfaction of those involved.

Some unfavorable aspects reported include the suffering of the participants generated by the bond with the patients and the resistance of other team members.

As for the favorable aspects, it should be stressed that the model contributed to teamwork, continuity of care, improvements in clinical evaluation and NP. The bond was also considered a positive aspect, as it led to the interaction of health professionals with patients and caregivers, as well as the satisfaction and visibility of nursing professionals.

The study demonstrated that Primary Nursing is feasible in the BMT Service, since its application was discussed and built by a team of nursing professionals who work in the sector. It is suggested that new studies on the implementation of this model in other Brazilian health specialties and institutions are conducted, in order to contribute to improve nursing and hence the care provided to the population.

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