

Developing a nursing healthcare protocol: a case report

Construção de um protocolo de cuidados de enfermagem: relato de experiência

Construcción de un protocolo de cuidados de enfermería: relato de experiencia

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ABSTRACT

Objective: to report the use experience of convergent healthcare research for developing a nursing care protocol. **Method:** convergent care research developed in university hospital, from July to December 2016, with 27 participants. **Results:** the stages of the research and its results are described in the steps: conception, instrumentation, screening and analysis. The end result was the nursing care protocol in day zero of hematopoietic stem cell transplantation. **Conclusion:** convergent care research was an appropriate method for developing the care protocol, and an important contribution to the approximation between theory and practice. The nursing care protocol was the result of this study and confirmed both the purpose of the research as a professional Master's in acquiring knowledge aimed at improving professional practice.

Descriptors: Nursing; Nursing Care; Nursing Assessment; Protocols; Methodology.

RESUMO

Objetivo: relatar a experiência da utilização da pesquisa convergente assistencial para a construção de um protocolo de cuidados de enfermagem. **Método:** realizou-se a pesquisa convergente assistencial desenvolvida em um hospital de ensino, de julho a dezembro de 2016, com 27 participantes. **Resultados:** as fases da pesquisa e seus resultados estão descritos nas etapas: concepção, instrumentação, perscrutação e análise. O resultado final foi o protocolo de cuidados de enfermagem no dia zero do transplante de células-tronco hematopoéticas. **Conclusão:** a pesquisa convergente assistencial foi método apropriado na construção do protocolo de cuidados, e destaca-se a importante contribuição na aproximação entre teoria e prática. O protocolo de cuidados de enfermagem constituiu o produto da dissertação e corroborou tanto o propósito da pesquisa quanto o mestrado profissional no desenvolvimento de conhecimentos voltados para a melhoria da prática profissional.

Descritores: Enfermagem; Cuidados de Enfermagem; Avaliação em Enfermagem; Protocolos; Metodologia.

RESUMEN

Objetivo: relatar la experiencia de la utilización de la investigación convergente asistencial para la construcción de un protocolo de cuidados de enfermería. **Método:** se realizó la investigación convergente asistencial desarrollada en un hospital de enseñanza, de julio a diciembre de 2016, con 27 participantes. **Resultados:** las fases de la investigación y sus resultados se describen en las etapas: concepción, instrumentación, escrutinio y análisis. El resultado final fue el protocolo de cuidados de enfermería en el día cero del trasplante de células madre hematopoyéticas. **Conclusión:** la investigación convergente asistencial fue el método apropiado en la construcción del protocolo de cuidados, y se destaca la importante contribución en la aproximación entre teoría y práctica. El protocolo de cuidados de enfermería constituyó el producto de la tesis y corroboró tanto el propósito de la investigación, como la maestría profesional en el desarrollo de conocimientos orientados a la mejora de la práctica profesional.

Descriptores: Enfermería; Atención de Enfermería; Evaluación en Enfermería; Protocolos; Metodología.

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INTRODUCTION

In nursing there is a current concern that research be methodologically rigorous, and that producing knowledge be relevant to healthcare practice. In order to meet the social contract inscribed in this profession, nurses increasingly reiterate the purpose of nursing research, in that it is not simply “doing aimlessly”⁽¹⁾.

A method consistent with this purpose is the convergent care research (CCR). One of its assumptions is including research in assistance activities, merging the know-how-to-think into the know-how-to-do⁽²⁾.

This method is characterized by converging research actions and health assistance actions, the researcher being involved in both actions simultaneously. For such, CCR is governed by concepts such as dialogical relationship (dialogue mediation between healthcare and research), expansibility (initial objective of the researcher being able to be extended during this intermediation process between healthcare practice and research), immersibility (there must be immersion of the research with active participation in the process of research and care) and simultaneity (concomitance of research and care activities with actions and interactions, without having one dominating the other)⁽²⁾.

The CCR comprises four different stages, namely: conception, instrumentation, screening and analysis, ranging from the choice of the research topic to the contextualization of its results⁽³⁾. The use of CCR enables the development of technical and/or technological knowledge to minimize problems, introduce innovations and changes in the context of health care practice⁽²⁾. Due to these characteristics, the method has been widely used to guide the construction of protocols, especially in nursing research.

In a study that aimed to focus on the methodological path used by Brazilian researchers in the nursing field for developing and validating protocols, amongst 24 graduate theses and dissertations over a period of 13 years, seven dissertations were found which used CCR in the development and validation process of these instruments⁽⁴⁾.

Protocols, in turn, are instruments that contain systematically structured recommendations, based on scientific evidence, technological and economic evaluation of health services, and their quality assurance. One of its purposes is to guide the decisions of health professionals regarding appropriate care in situations of disease prevention, health recovery or rehabilitation⁽⁵⁻⁶⁾. The use of protocols in the nursing field presents positive results, such as reducing the variability of healthcare actions, improving the qualification of professionals in healthcare decision-making, facilitating the incorporation of new technologies, innovating care, among others. The involvement of professionals that will use these instruments in their development process is important, cited as one of the decisive factors for the success of its implementation⁽⁶⁾.

Considering the aforementioned, CCR was the method chosen to guide the construction of a nursing care protocol on day zero of hematopoietic stem cell transplantation (HSCT) in a Master’s thesis. This transplant therapy is considered complex, and the role of the nursing professional is striking, especially on day zero. The care provided to the patient by the nurse on this day is specialized, and it is recommended to use protocols for fostering it in their interventions, considering the complexity of the scenario⁽⁷⁾. This study is justified for contributing to the dissemination of

this research method in the health field and demonstrating the importance of research aimed at the healthcare field.

OBJECTIVE

To report the use experience of convergent healthcare research for developing a nursing care protocol.

METHOD

This is a case report on the development of a nursing care protocol in a professional Master’s thesis, thus there is no presentation of results of the study, only of how the CCR method was used. The study was conducted in a public education hospital of the state of Paraná that has reputation in handling HSCT, with 27 participants, including biochemists, laboratory technicians and nurses.

This research project was submitted to the Research Ethics Committee of *Complexo Hospital de Clínicas* of the Federal University of Paraná, according to Resolution 466/2012 of the National Health Council⁽⁸⁾.

RESULTS

The stages of CCR are: conception, instrumentation, screening and analysis⁽³⁾. Therefore, the research was developed in four stages presented separately below.

Stage 1: conception

At this stage, the researcher decides what will be investigated in the context of professional practice. Problems and what can be modified are defined. For such, the choice of research object is justified and objectives are defined⁽³⁾.

Wanting to develop a nursing care protocol for day zero of the HSCT was guided in the absence of this instrument in the research site and the need for systematization of nursing care in the specific day of this transplant process. The collective protocol development proposal was presented to nursing practitioners and the nursing administration, which supported the research topic. The research question, objectives and theoretical basis were then elaborated, as shown in Chart 1.

Chart 1 – Conception stage components

What to research?	HSC preparation** Nursing care at day zero of HSCT**
Research question	What precautions are required to compose a nursing care protocol for day zero of HSCT?
Research objectives	- General: Developing a nursing healthcare protocol for day zero of HSCT. - Specifics: • describe the preparation of HSC for HSCT; • identify the care the nurse executes at day zero of HSCT; • develop a nursing healthcare protocol for the patient at day zero of HSCT.
Theoretical basis	Literature review by means of studies published in electronic journals and books.

Note: *HSC: hematopoietic stem cell; **HSCT: hematopoietic stem cell transplantation.

The theoretical basis in this stage covered HSC, the HSCT process, day zero of HSCT (HSC preparation, the infusion of these cells, the possible adverse reactions presented by the patient, the care of the nurse during this day) and the conceptions of protocols. Through published studies on national and international sources of information, such as the National Library of Medicine (PubMed), The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scientific Electronic Library (SciELO), *Biblioteca Virtual em Saúde* (BVS), among others. For searching these information sources, the term used were: “transplante de células-tronco hematopoéticas”, “transplante de medula óssea”, “enfermagem”, “cuidados de enfermagem”, “infusão de células progenitoras hematopoéticas”, “dia zero”, “reações adversas”, “efeitos adversos” and “eventos adversos”. In addition to the sources of information, textbooks nationally and internationally recognized as a reference in HSCT were used: *Terapêutica oncológica para enfermeiros e farmacêuticos*, Atheneu publisher; *Fundamentos e biologia do transplante de células-tronco hematopoéticas*, Atheneu publisher; *Hematopoietic stem cell transplantation: a manual for nursing practice*, Oncology Nursing Society publisher; *Hematopoietic stem cell transplantation: a handbook for clinicians*, Bethesda publisher.

With regard to the conceptions of protocol, for the search in the information sources, the terms used were “protocols” and “nursing assessment”. Thus, the conception⁽⁶⁾ was defined and the principles laid down for the development of the nursing care protocol at day zero with the definition of the topic, intended population, search strategies on the information sources and analysis of the evidence used^(4,6).

Delimitation of the physical space defined, participants and data collection techniques/instruments were also defined.

For the development of this stage, specific objectives were modified, which supports one of the concepts that govern CCR, expansibility⁽²⁾. Lastly, the three specific objectives outlined

allowed for reaching the overall objective previously determined for research.

Stage 2: Instrumentation

At this stage, the researcher performs the detailing of procedures that were initially outlined in the conception stage⁽³⁾. The research took place in two locations, with three groups of participants: each group corresponded to a specific objective initially defined. For each group were used different techniques and instruments for data collection, as shown in Chart 2.

Initially, the inclusion and exclusion criteria for each group of participants were defined. Next, the negotiation of the research proposal was conducted with them through individual invitation and presentation of the research project.

The techniques defined: observation, interview and discussion groups (DG) are considered the most appropriate in CCR, because this method has the property of articulating research and assistance in a single process⁽³⁾.

Observation is a data collection technique used to gather several information, including activities⁽⁹⁾. It is a technique of structured type, as it uses a previously developed instrument to guide it, and it is also passive, as there was no interference from the researcher⁽³⁾.

The interview features conversations about a phenomenon of interest and aims to acquire information. In this research, a semi-structured interview and a previously prepared script were used⁽³⁾.

Groups are sets of people united and connected by goals or ideals in common. Through DGs, it is allowed for the researcher to analyze the collective opinion of the group⁽¹⁰⁾.

It should be noted that no difficulties were found with regard to data collection in the Laboratory for Cell Manipulation and Cryobiology, and there was cooperation from professionals who understood the importance of the nurse’s knowledge on the step prior to the HSC infusion.

Chart 2 – Components of the instrumentation stage

Research participants	Group I – Professionals who work in the preparation of HSC* (biochemists and laboratory technicians)
	Group II – Healthcare nurses of the Hospitalization Unit of STMO**
	Group III – Healthcare nurses or nursing administration of the Hospitalization Unit of STMO
Research location	For Group I – Laboratory for Cell Manipulation and Cryobiology
	For Group II – Hospitalization Unit of STMO
	For Group III – Hospitalization Unit of STMO
Data collection techniques/ instruments	Group I – Observation and interview; manual registration of data
	Group II – Observation; manual registration of data
	Group III – Discussion groups; audiorecording

Note: *HSC: hematopoietic stem cell; **STMO: Bone Marrow Transplantation Service.

Stage 3: Screening

Screening here means examining or investigating rigorously. At this stage, strategies to obtain the information for data definition are conducted⁽³⁾. In the screening stage, data collection was performed, being conducted in three steps.

1st step of the screening stage: aimed to meet the first specific objective of the research, describing HSC preparation. The definition of this objective was due to the fact that the preparation of these cells determines the infusion mode at day zero and is related to the decrease in occurrence and severity of adverse reactions the patient may present during and after the infusion. Therefore, it is imperative that the nurse knows how to prepare HSC for planning patient care.

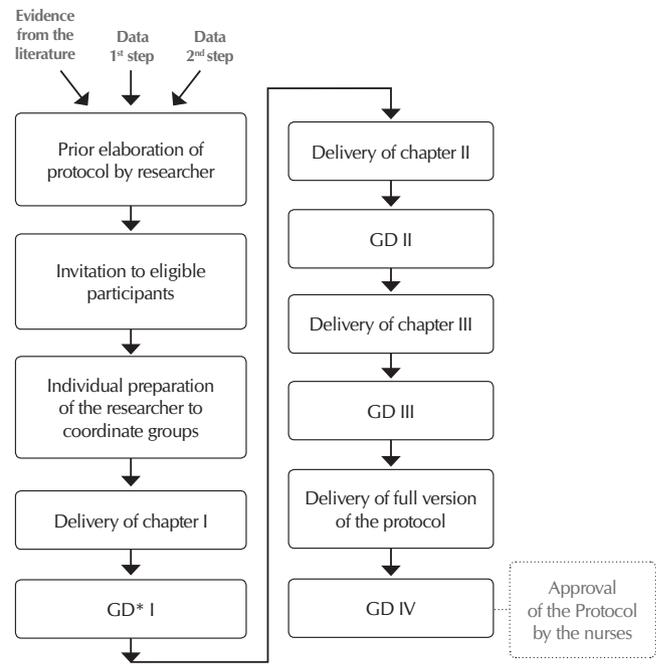
In Group I, composed of two biochemists and a laboratory technician, data were collected by observation and interview simultaneously. Procedures were followed in real time, and recorded in instrument previously designed to this end. Nine procedures regarding HSC preparation were followed, totaling 30h20min of observation/interview. It should be noted that, prior to beginning data collection, the researcher held theoretical instrumentation regarding the procedures in order to obtain prior knowledge through scientific evidence.

2nd step of the screening stage: aimed to meet the second specific objective of the research, identifying the care that the nurse performs during day zero of HSCT. The definition of this objective was determined by the need to grasp the reality of nursing care during day zero at the research location, in order for the protocol to be suitable for the job.

In Group II, composed of 11 nurses, data were collected by observation of structured and passive type, as there was no interference from the researcher⁽³⁾. The duration of each observation corresponded to the whole care process performed by a nurse at day zero (before, during and after the infusion of HSC). There was observation for 10 days of infusion, totaling 72 hours. Records of the observations were made in an instrument previously elaborated for this purpose. In addition, before the beginning of this step, the researcher conducted theoretical instrumentation through scientific evidence.

3rd step of the screening stage: aimed to meet the third specific objective of the research, developing the nursing care protocol for the patient at day zero of HSCT. In this step, the researcher acted as a coordinator of the DG and prepared herself individually to do so, in order to handle the attributes considered vital for a group coordinator on an investigation of CCR⁽³⁾.

Group III was composed of 22 nurses, and 9 of them were also participants in Group II, hence the total number of 27 participants in the research. The data were collected by DG. For this group, the inclusion criterion of working time of at least two years in HSCT was adopted, since these participants would contribute to the development of the protocol, and thus experience in this area would be vital. In this step, prior elaboration of the protocol was conducted by the researcher, which was based on scientific evidence and data collected from Groups I and II. After drafting each chapter, they were delivered in printed form to participants in order for them to read and be able to contribute with suggestions and criticism, culminating in the refinement of the protocol. A range of 15 days between delivery of the material and each DG was followed. Figure 1 summarizes this step of the screening stage.



Note: *DG: discussion group.

Figure 1 – Summary of the 3rd step of the screening stage

As observed in Figure 1, four DGs were performed with specific topics corresponding to the three chapters of the protocol (respectively DG I, DG II and DG III). In the fourth and last DG, participants were presented the full version of the protocol and its approval was proposed.

For each topic (I, II, III and IV) were conducted seven DGs (two in the morning, two in the afternoon and three at night), totaling 28 DGs. Every DG lasted 30 to 60 minutes. The first and second steps of the screening stage (observation/interview of Group I and observation of Group II, respectively) did not demonstrate relevant difficulties.

For Group I, there was no interference of the researcher in the work process of participants. For Group II, there was no embarrassment of participants during the observation. It was observed that participants were developing their workflow without sticking to the presence of the researcher. For Group III, the DGs were conducted during the working hours of participants, and therefore some work characteristics, such as service for patients under critical conditions and other complications during the shift, hindered the presence of some nurses. The strategy outlined for this difficulty was two or three DGs in each work shift, which resulted in the presence of the maximum amount of possible participants, leading to diversity of experiences and opinions.

Stage 4: analysis

The analysis is the fourth and final stage of a PCA. In this study, the screening and analysis stages occurred simultaneously. This is common in research using this methodology⁽³⁾ and, in general, also common in qualitative research, in which the steps of sampling, collection, analysis and interpretation of data can take place iteratively⁽⁹⁾.

For groups I and II, the data collected were recorded manually in specific instrument. With each collection finished, data obtained and recorded were typed and saved in Microsoft Office Word, 2016 version, in order to preserve its storage assurance.

Skimming of the text produced and comparative analysis with data based on the scientific literature that supported the research were conducted. The findings of the first step, pertaining to HSC preparation, were synthesized in the protocol in the form of text, pictures and flowcharts. Based on these findings, the nurse responsible for the care of the patient at day zero is able to plan nursing care in a safer and individualized manner.

The findings of the second step, pertaining to the identification of nursing care at day zero, were analyzed and categorized by thematic concentration – care before, during and after HSC infusion. From this analysis resulted several topics serving as basis for discussions on care within the DGs, contributing to the development of the protocol according to the reality of the service.

During the third step, the data obtained from Group III were audio-recorded. After each DG, in original file of each chapter of the protocol in Microsoft Office Word, version 2016, the researcher transcribed and highlighted the suggestions of participants. Based on them, changes in the Protocol were conducted. It was previously established that, if there were divergences between the amendments proposed by participants and what was advocated in the literature, the latter would prevail. However, no divergences were noticed. Chart 3 exemplifies the analysis of this step.

In the fourth and last DG, participants were presented the full version of the protocol after having modifications added according to the nurses' proposals. Amendments and additions made were validated according to group consensus.

The nursing care protocol for day zero of HSCT, result of the professional Master's thesis, has three chapters, divided into 44 pages. It was produced in the form of text, pictures, flowcharts and charts. Nursing care for the two different types of HSC infusion (fresh and cryopreserved-thawed) were divided into care before, during and after infusion, arranged in chart format. In these paintings, the left column shows care and the right column shows the justification for care, 38 being for the first modality and 37 for the second.

After approval of the protocol by nurses in DG IV, this instrument has also been approved for use by participants of Group I and the nurse that is a specialist in the Bone Marrow Transplantation Service (STMO). The next step was the training of all nurses allocated in the Hospitalization Unit of STMO, where the protocol was implemented for use during service. For the development of this stage, the processes of acquisition, synthesis, theorizing and transference, common to qualitative research⁽³⁾. Skimming of the text, comparative analysis with the data based on scientific literature, and modifications in the protocol according to participants' suggestions were conducted, which culminated in the development of the final version of the instrument, approved by peers.

The CCR was the method most suitable for developing the care protocol, and an important contribution to approximating theory and practice, with the field researcher involved directly with the object of research.

CONCLUSION

The aim of this case report was achieved through the presentation of a study that used CCR in its four stages. It demonstrated the possibility of developing a nursing care protocol using this method, having a dialogical relationship between research and healthcare practice as one of its principles. In addition to this relationship, the method assumes the active actuation of participants during the research, resulting in the support and agreement of these in face of the proposal of changes and improvements to work environment based on the topic researched.

The nursing care protocol was the result of this study and confirmed both the purpose of the CCR as well as a professional Master's in acquiring knowledge aimed at improving professional practice. We hope that this case report contributes to researchers who develop studies aimed towards the transformation/improvement of professional practice in the health field.

Chart 3 – Analysis of the third data collection step

Chapter of the Protocol	Version prepared by researcher	Contributions of nurses in DG*	Version approved by nurses
Chapter 2	Keep measurement of vital signs according to sector routine or in shorter intervals depending on the state of the patient.	<i>At which interval? You have to determine until when the most frequent measurement continues. (E10**, E20)</i>	Keep measurement of vital signs with frequency from 2/2 hours until 6 hours after infusion.
Chapter 3	Check vital signs (temperature, heart rate, respiratory rate and blood pressure) 30 minutes before the start of the infusion, and communicate changes.	<i>Add pain assessment. (E1) And in cases where the patient has a fever? (E5)</i>	Check vital signs (temperature, heart rate, respiratory rate and blood pressure) 30 minutes before the start of the infusion, and communicate changes. Obs.: HSC infusion should be performed preferably with afebrile patient, but the fever does not impair conducting the infusion. These cases must be discussed with the physician in charge in order to define the conduct to be taken.

Note: *DG: discussion group; **E: nurse.

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