

## Nursing process implementation through the software for university hospital management: an experience report

### Implementação do processo de enfermagem pelo aplicativo de gestão para hospitais universitários: relato de experiência

### Implementación del proceso de enfermería por el aplicativo de gestión para hospitales universitarios: relato de experiencia

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This is an experience report developed in the onco-hematology unit of a Public Teaching Hospital, from March to October 2016, aiming to report the experience of nursing residents regarding the implementation of the Nursing Process through the Software for University Hospital Management. It was found that the implementation of the NP through the software had the potential of offering good results, such as the alignment of work processes, the optimization of nursing records, improvement in the quality of assistance and effective communication in the nursing team. Some challenges stand out: the absence of some specific diagnoses for onco-hematologic clients, limitations or absence of some prescriptions in the software and the lack of time of the team. Therefore, the implementation of the computerized process had potential but faced challenges. The experience contributed for the clinical judgement, diagnostic thinking, and for the critical and reflexive thought of the nursing resident.

**Descriptors:** Nursing process; Nursing; Nursing informatics.

Este é um relato de experiência desenvolvido na unidade de oncohematologia de um Hospital Público de Ensino, no período de março a outubro do ano de 2016, com o objetivo de relatar a experiência de residentes de enfermagem quanto à implementação do Processo de Enfermagem pelo Aplicativo de Gestão para Hospitais Universitários. Foram identificadas potencialidades quanto à implementação do PE pelo aplicativo, como o alinhamento dos processos de trabalho, otimização dos registros de enfermagem, melhoria da qualidade assistencial e comunicação efetiva na equipe de enfermagem. Dentre os desafios destacam-se: ausência de alguns diagnósticos específicos para clientes oncohematológicos, limitações ou ausência de algumas prescrições no aplicativo e tempo escasso da equipe. Assim, foram identificadas potencialidades e desafios quanto à implementação do processo informatizado. Conclui-se que a experiência contribuiu para o julgamento clínico, raciocínio diagnóstico, pensamento crítico e reflexivo do residente de enfermagem.

**Descritores:** Processo de enfermagem; Enfermagem; Informática em enfermagem.

Este es un relato de experiencia desarrollado en la unidad de oncohematología de un Hospital Público de Enseñanza, en el periodo de marzo a octubre de 2016, con el objetivo de relatar la experiencia de residentes de enfermería en cuanto a la implementación del Proceso de Enfermería por la Aplicación de Gestión para Hospitales Universitarios. Fueron identificadas potencialidades en cuanto a la implementación del PE por la aplicación, como el alineamiento de los procesos de trabajo, optimización de los registros de enfermería, mejoría de la calidad asistencial y comunicación efectiva en el equipo de enfermería. Entre los desafíos se destacan: ausencia de algunos diagnósticos específicos para clientes oncohematológicos, limitaciones o ausencia de algunas prescripciones en la aplicación y tiempo escaso del equipo. Así, fueron identificadas potencialidades y desafíos en cuanto a la implementación del proceso informatizado. Se concluye que la experiencia contribuyó para el juicio clínico, raciocinio diagnóstico, pensamiento crítico y reflexivo del residente de enfermería.

**Descritores:** Proceso de enfermería; Enfermería; Informática aplicada a la enfermería.

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## INTRODUCTION

The use of the model of assistance in the Nursing Process (NP), to guide professional exercise, positively influences the quality of the assistance in health, as it does the satisfaction of the nursing team, since it values and gives visibility to the profession<sup>1</sup>.

The NP is a methodological and technological instrument used in the planning of care. It is constituted by five inter-related and interdependent stages: data collection, nursing diagnoses, nursing planning, implementation and nursing evaluation. Healthcare technology is defined as any type of technology that guides the sequence of clinical thought and improves the quality of assistance<sup>2,3</sup>.

Since the nursing professional is co-responsible, as a member of the multi-professional health team, for registering the clients' records, it is pertinent to understand the need for incorporating new technologies in the working process. Studies point out that the manual registration of nursing records is limited due to the inconsistencies of the data or to their being illegible. In this context, it is essential for the nurse to seek involvement in the processes of implantation of these new technologies<sup>4,5</sup>.

The computerized NP favors: the uniformization of the language used by nurses, improvements in the communication between professionals, and safety in the planning, execution and evaluation of nursing conducts, in addition to offering autonomy to the subjects and reducing the number of mistakes<sup>6</sup>.

The computerized system can be seen as a permanent space of information and knowledge, since it enables the establishment of a dialogue between the nursing team and the multi-disciplinary team, improving clinical thought and judgement, and promoting the taking of safe clinical decisions that reflect on an improvement in the culture of safety<sup>3</sup>.

Considering this perspective, the Ministry of Education (MEC) created, in 2009, as a part of the National Program of University Hospital Restructuring (REHUF), the Software

for the Management of University Hospitals (AGHU), whose development was based on the Software for Hospital Management from the General Hospital of Porto Alegre.

The AGHU prioritizes the standardization of practices of care and of administrative actions in the Federal University Hospitals, and enables the production of national indicators through electronic records. It has been adopted in university hospitals connected to MEC and to the Brazilian Company of Hospital Services (EBSERH), thus including a total of 30 institutions at the moment<sup>7</sup>.

The objective of this study is reporting the experience of nursing residents regarding the implementation of the Nursing Process through the use of the Software for University Hospital Management.

## METHOD

This is a descriptive experience report about the experience of nursing residents during the implementation of the NP through the AGHU, which took place from March to October 2016. The field of study was the Onco-hematologic unit of the General Hospital of the Triângulo Mineiro Federal University (GH-UFTM), located in the countryside of the Minas Gerais state. The institution is a reference for 27 cities and is under EBSERH management since 2013.

In the first year of resident, the Nursing residents go through the hospital cycle, in which they experience nursing practice in many hospitalization units, including Onco-Hematology.

The group of residents acted individually in the unit for two months in 2016. The five members of the team acted in this specific unit in turns. Discussion groups were conducted with the residents regarding the registration of the stages of the NP, during and after their actions in the unit.

Later, the discussions originated from the experience of the residents were summarized and described in October 2016, considering the challenges and potentials of the use of AGHU for the registration of the NP in the institution.

It should be highlighted that the research followed the ethical and legal prescriptions of resolution 466/2012 from the National Council of Health. The project was analyzed and approved by the Research and Ethics Committee of a Federal University under protocol 1.204.786 and was dismissed from the necessity of using a Free and Informed Consent Form because it was an experience report.

## RESULTS

The implantation of the NP through the AGHU in the Onco-hematology unit started in 2014. The unit was the first in this hospital to incorporate the use of a computerized system to systematize and standardize nursing care.

The professionals of the nursing team and the residents received previous operational training for the use of the AGHU, which was enabled by the availability of three computers in the unit.

The NP records conducted within the onco-hematology unit is conducted by nurses from the unit and nursing residents, in four stages: the collection of data is manually registered in the standardized institutional form "24/7 nursing investigation"; nursing diagnostic and prescription are registered in a specific AGHU module and the evaluation is also registered in the 24/7 nursing investigation form.

The evaluation is based on the technical-scientific knowledge of the nurse, in the clinical evolution of the patient, and also on the quality indexes for lesions caused by pressure, falls and phlebitis. The NP, for every client, is divided between the nurses from each work shift, and lasts for 24 hours.

The performance of the computerized NP includes the stages of nursing diagnostic and prescription in specific AGHU modules which are organized according to the conceptual model of Wand Aguiar Horta: basic human needs (BHN)<sup>8</sup>. The software includes 79 diagnostic nursing titles, inspired in the diagnostic model of NANDA International taxonomy II (NANDA-I, 2015), separated in three BHN groups: psychobiological needs, psychosocial needs and spiritual needs. It is subdivided in 27 subgroups.

In the module of nursing prescription, the professional may choose to register the prescription of care based on signs and symptoms or more directly, through nursing diagnoses.

To conduct the prescription due to "Sign and Symptom", the group and subgroup of Human Needs must be selected, and the sign or symptom presented by the client must be indicated. However, to prescribe according to "Diagnostic", the professional must select the Group, Subgroup, Diagnostic and Etiology.

After prescription, it is possible to "leave pending" and confirm it later, or to confirm it immediately, followed by printing. The institution of this study does not have electronic records, which means that the records of the client are still physical and all computerized record that contemplates the stages of nursing diagnostic and prescription must be printed and include the signature and stamp of the professional responsible.

According to the perceptions of the residents, the implementation of a computerized NP has the potential to contribute for clinical judgement, diagnostic thought, critical/reflexive thinking and decision making for the elaboration of a plan of assistance based on scientific evidences.

Systematized assistance enables the elaboration of a plan of individualized care and reiterates the need of not merely intervening in the problems, but also that of preventing them, using risk diagnoses. In addition, the implementation of the NP through the software enabled the alignment of work processes, the optimization of nursing records, improvement in the quality of assistance and effective communication in the nursing team. Also, it contributed for the recognition of the nursing care by the patients' relatives and the multi-professional team, collaborating for the qualification of care and for the valorization of the nursing profession.

Among the challenges for the development of the NP through the AGHU, stand out: the absence of some specific diagnoses for onco-hematologic clients, when compared to the taxonomy II of NANDA-I; limitations or absence of some prescriptions

in the software, when compared to protocols and plans of institutional nursing interventions.

The lack of time of the team, as well as their work overload, were also mentioned as challenges. The limitations of the corrective maintenance of the software stood out as unfavorable for the reuse of the registration, since the software was on maintenance during some periods, which made it impossible to conduct a NP for the client.

## DISCUSSION

The NP is a multi-faceted and multidimensional assistance methodology that organizes, humanizes and qualifies clinical practice, favoring the appropriation of autonomy, the development of clinical thought and the process of decision making<sup>9</sup>.

In accordance to the results of this report, a study conducted in a philanthropic hospital that accompanied the implantation of a computerized NP, found that the use of a software to support management care enables the work and strengthens the actions of the nurse, increasing the safety in the process of assistance and perfecting its practice<sup>10</sup>.

An intervention study that compared the functionality, trustworthiness, usability and efficiency of manual records to those of a software found that the digital system has more advantages, and that its resources are more adequate to the use of the NP in professional practice<sup>11</sup>.

A systematic revision study pointed out the benefits that stemmed from the structuring of the nursing records, which included: a better description of the interventions and nursing results, compliance with legal requirements, increased support to audits and clinical practices, continued care, development and valorization of collaborative care, also promoting actions that contribute for the safety of the patient<sup>12</sup>. Tais achados corroboram as potencialidades identificadas a partir da vivência dos residentes quanto à utilização de um aplicativo para a efetivação do PE.

Among the strategies that contribute for the implementation of the NP in the hospitals,

stand out the management of people, the availability of materials, the development of actions from the perspective of permanent education, the support of universities, the informatization of records and the use of protocols of assistance<sup>13</sup>.

Nurses understand that the informatization of the stages of the process contributes for the monitoring of actions; effective communication between a multi-disciplinary team. optimization of time and improved security for nursing registration; access to exams and complementary information, facilitating decision-making<sup>5</sup>.

A study conducted in the Neonate Intensive Care Unit (NICU) of a teaching hospital showed that the factors that make the development of the NP easier involve adequate knowledge and abilities; participation in specialized training and consultancy; greater involvement of the management and the availability of time for its application<sup>14</sup>.

Although the NP is legally instituted and standardized, there are many challenges to its implementation. Stand out the lack of time and work overloads; excessive emphasis in the procedures; the association of assistance and administrative activities; the lack of definition of the role of the nurse; deficits in the amount of nursing professionals; lack of commitment and interest of the nursing team; and the excessive valorization of medical prescriptions. Additionally, the lack of qualified nursing professionals stands out. The absence of recognition by part of the nursing team and of commitment to the process, also result in the lack of autonomy and leadership<sup>6,15</sup>.

Among other factors that make the management of care through a computerized NP difficult, were also found: low maintenance of the system, indiscriminate use of the electronic tool and the difficulties to "feed" the system<sup>5</sup>.

In the workplace, factors related to the conditions of the environment and of the equipment were mentioned by the nurses as aspects that are unfavorable for the NP records. Among them are the excess of noise,

inadequate working spaces, and the small number of low-performance computers<sup>14</sup>.

Considering all the above, it is essential to adopt strategies that enable the implantation of the NP in the practice of the nurses, through the use of theoretical bases that are adequate for the reality of the institution, the rationalization of the printings, error prevention, improvement in the communication among members of the multi-disciplinary team, emphasis in the teaching of NP in graduation and post-graduation courses, as well as in nursing residences and in permanent education<sup>16</sup>.

## CONCLUSION

From the experience of the residents regarding the implementation of the computerized NP through the AGHU, the following were identified as potential benefits: the optimization of the working process and standardization of care, as well as the valorization of the nursing profession in the eyes of the multi-professional team. It also contributed for clinical judgement, diagnostic thinking, and for the critical and reflexive thought of the nursing resident.

Some challenges stood out: the absence of some specific diagnoses for onco-hematologic clients, limitations or absence of some prescriptions in the software and the lack of time of the team for the performance of the process.

A limitation of this experience report was the scarcity of studies that address the use of the AGHU for the performance of the NP. This study, therefore, contributed to foment future researches regarding the use of the AGHU in the hospitals under the management of the Brazilian Company of Hospital Services.

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#### CONTRIBUTIONS

**Danielle Bárbara Silva Motta, Deimesom Silva Dias, Glendha Oliveira Arduini and Lázara Carolina** took part in the organization of data and in the writing of the article. **Isadora Braga Calegari** participated in the conception, writing and organization of data. **Aldenora Laisa Paiva de Carvalho Cordeiro and Raquel Bessa Ribeiro Rosalino** contributed in the conception and critical review of the article.

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