



NURSING PROCESS AND ITS APPLICATION IN AN INTENSIVE CARE UNIT: INTEGRATIVE REVIEW

PROCESSO DE ENFERMAGEM E SUA APLICAÇÃO EM UNIDADE DE TERAPIA INTENSIVA: REVISÃO INTEGRATIVA

PROCESO DE ENFERMERÍA Y SU APLICACIÓN EN UNA UNIDAD DE CUIDADOS INTENSIVOS: REVISIÓN INTEGRADORA

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ABSTRACT

Objective: to identify in the Brazilian and international literature the nursing process application at an intensive care unit, as well as the contributions and limitations of its implementation. **Method:** this is an integrative review conducted through the following research question: How does the nursing process application happen at the intensive care unit? One accessed the databases CINAHL, SCOPUS, MEDLINE, LILACS, and IBES. Data analysis started from the organization and categorization of the research problem. **Results:** through the critical analysis of papers two categories were identified: Nursing process and its use at the intensive care unit; and Nursing process and its contributions/limitations at the intensive care unit. **Conclusion:** in Nursing researches, one noticed the importance of nursing process application at the intensive care unit, since, through this guiding instrument, the nurse becomes able to provide a good quality care. **Descriptors:** Nursing; Nursing Process; Intensive Care Unit.

RESUMO

Objetivo: identificar na literatura, brasileira e internacional, a aplicação do processo de enfermagem em unidade de terapia intensiva, bem como as contribuições e limitações de sua implementação. **Método:** trata-se de revisão integrativa realizada a partir da seguinte questão de pesquisa: Como ocorre a aplicação do processo de enfermagem na unidade de terapia intensiva? Foram consultadas as bases de dados Cinahl, Scopus, MedLine, Lilacs e Ibecs. A análise de dados partiu da ordenação e categorização do problema de pesquisa. **Resultados:** a partir da análise crítica dos artigos foram identificadas duas categorias: Processo de enfermagem e sua utilização na unidade de terapia intensiva; e Processo de enfermagem e suas contribuições/limitações na unidade de terapia intensiva. **Conclusão:** nas pesquisas de Enfermagem se percebeu a importância da aplicação do processo de enfermagem na unidade de terapia intensiva, pois, por meio desse instrumento norteador, o enfermeiro se torna capaz de realizar uma assistência de qualidade. **Descritores:** Enfermagem; Processo de Enfermagem; Unidade de Terapia Intensiva.

RESUMEN

Objetivo: identificar en la literatura, brasileña e internacional, la aplicación del proceso de enfermería en unidad de cuidados intensivos, así como las contribuciones y las limitaciones de su implementación. **Método:** esta es una revisión integradora realizada desde la siguiente cuestión de investigación: ¿Cómo ocurre la aplicación del proceso de enfermería en la unidad de cuidados intensivos? Fueron consultadas las bases de datos Cinahl, Scopus, MedLine, Lilacs e Ibecs. El análisis de datos partió de la ordenación y categorización del problema de investigación. **Resultados:** desde el análisis crítico de los artículos fueron identificadas dos categorías: Proceso de enfermería y su utilización en la unidad de cuidados intensivos; y Proceso de enfermería y sus contribuciones/limitaciones en la unidad de cuidados intensivos. **Conclusión:** en las investigaciones de Enfermería se dio cuenta de la importancia de la aplicación del proceso de enfermería en la unidad de cuidados intensivos, pues, por medio de ese instrumento orientador, el enfermero se vuelve capaz de realizar una atención de calidad. **Descriptores:** Enfermería; Proceso de Enfermería; Unidad de Cuidados Intensivos.

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INTRODUCTION

Nursing experiences the challenge of constructing and organizing the knowledge on which its practice is grounded, i.e. the development of a working process, a methodological and systematic instrument for guiding care, the nursing process (NP).¹

Since it's characterized as a dynamic profession, nursing needs a methodology able to reflect such dynamism. NP is regarded as the work methodology most widely known and accepted in the world, making easier the information exchange between nurses from various institutions.²

The intensive care unit (ICU) is an environment which generates some factors that can cause occupational risks to nurses and dissatisfaction in the workplace. It has particular characteristics which induce the acquaintanceship between professionals and patients at risk situations, requiring a more dynamic care with strict and inflexible routines.³

The ICU environment is designed for treatment of patients in critical condition, using specific material resources and specialized human resources which, through a safe and continuous care practice, seek recovery in the health/illness process. It's understood that, in order to have a holistic and individualized nursing care, there's a need for applying a care tool named NP.

Thus, to achieve a guarantee on the quality of nursing care in the ICU, there's a need for focusing not only on the qualification of workers, but also the capacity of practitioners to use instruments which can facilitate and contribute to care.

Regarding the relevance of this issue, this study aims to contribute to the reflection of the nurse on the application of NP in the ICU, conquering spaces in an attempt to break with the dichotomy between theory and nursing practice and contributing to the organization of the clinical practice; besides, this study indicates the need for developing and implementing NP for a good quality and holistic care for the client, family, and collectivity.

In this context, this study aimed to identify in the Brazilian and international literature the nursing process application at the ICU, as well as the contributions and limitations in its implementation.

METHODOLOGY

This is an integrative review; this kind of study brings new knowledge which puts into

practice data so that nursing is based on evidence.⁴ The evidence-based practice (EBP) is a tool which allows the use of research results in health care, reinforcing the importance of research for clinical practice. For this, there's a need for finding the best and the latest scientific evidence, to be implemented in the service, so that it can be performed with quality.⁵

In EBP there's a need for producing literature review methods, which allow the search, critical evaluation, and synthesis of the available evidence on the study object under investigation, and among them stand out the systematic review and the integrative literature review.⁶

Due to the growing need for ensuring a care practice based on scientific evidence in nursing, the integrative review has been indicated as an essential tool within this area. This method allows synthesizing knowledge on a particular issue and implementing the significant results of the study in the care practice.⁷

This is a large study, conducted through a judicious survey in the databases, which allows including the data of theoretical and empirical literature, as well as studies with different methodological approaches, such as qualitative and quantitative, in order to generate a broad understanding on the phenomenon under analysis. This large sample, along with the multiplicity of proposals, must generate a consistent scenario of theories, concepts, or health situations relevant to nursing.⁶

Thus, the integrative review must be used as an instrument which generates knowledge on nursing, since the knowledge designed by researches allow the development of a critical thought needed in everyday practice of the nurse and it provides health care with means for improvement and good quality.

In face of this, the integrative review method is an approach which allows the inclusion of various methodologies, playing a larger role in evidence-based nursing practice, helping the researcher to summarize theoretical and empirical literature on a specific theme. One proposes stages to be observed when conducting an integrative review.⁶ For this study, one established the stages below.

• Stage 1 - Problem identification

The initial phase of any review method is a clear problem identification, which consists in addressing the review's purpose. Subsequently, the variables of interest (concepts, target population, health problem)

and the appropriate sampling are determined (the type of empirical studies, the inclusion of theoretical literature). With a well-specified review purpose and variables of interest, all other review stages become easier, especially the ability to distinguish between pertinent and non-pertinent information in the data extraction stage.⁶

This study addresses NP in the ICU, being even a methodological tool that contributes to the body of knowledge on which the nursing practice is based. In face of the problem, knowing the NP importance to the care grounding in a systematic and effective way on the part of nurses, which contributes to the improvement of patient care, and that in an ICU there's a need for individualized and qualified care, there emerged a great concern with regard to this theme. This concern is sustained by reflections in the contact with literature, besides questions which emerged in everyday practice. This way, the guiding question of this study was: "How has the NP application happened in the ICU?".

• Stage 2 - Literature survey

Well-defined search strategies are crucial, since they increase the accuracy of any kind of comment.

To search for papers, one used the databases Cumulative Index to Nursing and Allied Health Literature (CINAHL), SCOPUS, National Library of Medicine (MEDLINE), the Latin American and Caribbean Literature on Health Sciences (LILACS) and Spanish Bibliographic Index of Health Sciences (IBECS). Besides, one conducted a manual search for papers unidentified in the databases, but cited in other studies.

For conducting a good quality review research, the first step is using a controlled and worldwide recognized terminology. Thus, one used terms available in the Descriptors in Health Sciences (DECS) and the Boolean operator AND, resulting in the following combinations: Nursing Process and Intensive Care Units; Processos de enfermagem and Unidade de terapia intensiva. In this search, the descriptors were used in Portuguese and English. One didn't define an interval of years

for the search, covering all papers published until the data collection time, i.e. March 2012. One took into account for analysis only the papers written in Portuguese, English, or Spanish.

• Stage 3 - Data evaluation

Each type of research project has different criteria which exemplify quality, i.e. the random choice into two project groups. Therefore, the process is more conducive to evaluations in which the sampling basis is narrow and the research projects included are similar, if not identical.⁶

This way, the papers were evaluated by reading the full texts, which should meet the following criteria: theme related to the methodological instrument, NP in the ICU; theme related to the application of NP in the ICU; theme related to the contributions and limitations of NP in the ICU; authorship or participation of nurses at some stage of the study; and availability, in the database, of the full paper.

• Stage 4 - Data analysis

Data analysis in integrative reviews requires that the data from primary sources are ordered, coded, categorized, and summarized in a unified and integrated conclusion on the research problem.⁸

The papers were analyzed and grouped into categories which defined the way how NP was applied at the ICU. One established two categories: NP and its use in the ICU (how NP is used by nurses) and NP and its contributions/limitations in the ICU (factors contributing to hinder its implementation).

• Stage 5 - Presentation

Conclusions of integrative reviews may be reported in tables or diagrams. Ideally, the results capture the theme's depth and breadth and contribute to a new understanding of the phenomenon of concern. Finally, all methodological limitations of the analysis are made explicit in the presentation.⁹

In this context, the synthesis of findings is presented in Table 1 and the analysis took place through the established categories.

Table 1. Distribution of the papers found and selected, according to the databases. Alfenas, Minas Gerais, Brazil, 2012.

Database	Papers found	Eligible papers	Duplicate papers	Papers excluded after duplicate	Selected papers
SCOPUS	54	02	01	01	01
MEDLINE	49	03	03	01	02
LILACS	23	04	02	02	02
CINAHL	3	0	0	0	0
IBECS	1	0	0	0	0
Total	130	09	06	04	05

RESULTS

In the search in databases, 130 papers were found, being in selective reading 54 from SCOPUS, 49 from MEDLINE, 23 from LILACS, 3 from CINAHL, and 1 from IBECs (Table 1). Out of these, 125 were excluded, since they didn't meet the inclusion criteria of the data evaluation stage, namely, they didn't address the NP theme and its application in the ICU in some stage of the study. It's worth stressing that some papers didn't meet more than one inclusion criterion. Some papers not found in the databases were included in the study, since they were cited by other studies and met the inclusion criteria. The duplicate (2 papers) and tripled (1 paper) studies in the databases were taken into account only once. Thus, in critical and analytical reading 5 papers were analyzed, 2 of them from MEDLINE, 2 from LILACS, and 1 from SCOPUS.

A synthesis of the results obtained is presented in Figure 1, containing: identification of databases, publication year, country where the study was conducted, type

of study, evidence level, authors, and language.

One can observe that the publications found were from an only country: Brazil. Among the categories established in this study, all papers used NP and its application at the ICU (n = 5). In all publications the authors were nurses (Figure 1).

The evidence level evaluation was classified in: Level 1 - systematic reviews or meta-analysis of relevant clinical trials; Level 2 - evidence derived from at least one well-designed controlled randomized clinical trial; Level 3 - well-designed clinical trials without randomization; Level 4 - cohort and case-control and well-designed case-control studies; Level 5 - systematic review of descriptive and qualitative studies; Level 6 - evidence derived from a single descriptive or qualitative study; and Level 7 - opinion of authorities or report from expert committees.¹⁰ Among the selected papers, level 6 evidence prevailed, where the qualitative study was presented in all methods mentioned.

Database	Year	Country where the study was conducted	Study type	Evidence level	Authors	Language
Scopus	2010	Brazil	Technical production and methodological study based on evidence	6	Barra DCC, Dal Sasso GTM	Portuguese
SCOPUS	2009	Brazil	Qualitative (research-action)	6	Amante Rossetto LN, AP, Schneider DG	Portuguese
MEDLINE	2008	Brazil	Qualitatively with theoretical axis in symbolic interactionism	6	Alves AR, Lopes CHAF, Jorge MSB	Portuguese
LILACS	2009	Brazil	Methodological research	6	Truppel TC, et al.	Portuguese
MEDLINE	2009	Brazil	Convergent-clinical search	6	Barra DCC, Dal Sasso GTM, Monticelli M	Portuguese
LILACS						

Figure 1. Distribution of papers included in the integrative review. Alfenas, Minas Gerais, Brazil, 2012.

Going on with the synthesis of results obtained in the evaluated papers, in Figure 2, one presents information with regard to: study objective, main results, and conclusion of each of the 5 selected papers.

Authors	Study objective	Main results	Conclusion
Barra DCC, Dal Sasso GTM	Describe the evaluation of ergonomic and usability criteria of the computerized NP on a mobile technological device <i>Personal Digital Assistant</i> (PDA) through the ICNP® 1.0.	It's possible to state that the NP computerized system at the ICU, in accordance with the ICNP® 1.0, developed and implemented up to this moment, has ergonomics and usability criteria, since they were regarded as excellent by the evaluators.	The system developed has a practical application because it allows us to evaluate, intervene, and manage nursing care.
Amante LN, Rossetto AP, Schneider DG	Implement the individualized and humanized NCS at the ICU of a philanthropic hospital in Brusque, Santa Catarina, Brazil.	It was possible to identify the team's lack of knowledge on the NCS, since respondents were thoughtful and slow to present their concept, as they didn't know what it was about.	With the nursing processes application, one realized the importance of having care systematization at the ICU.
Alves AR, Lopes CHAF, Jorge MSB	Understand the meaning of NP practice for nurses at the ICU.	The NP is still an unknown practice for other health professionals and this allows the fragmentation of actions between them and the decrease in care as a procedure.	It was understood that use a work methodology, in this case the NP, not just drive actions by common sense and empirical practice, will glimpse a new future.
Truppel TC, et al.	Restructure NCS at the ICU; list the diagnoses and the nursing prescriptions; validate the NCS stages; and provide means for structuring a protocol to operationalize NCS.	Not only the direct benefits to the patient are observed by using NCS, but also the benefits aimed at the institution and the other professionals of the multidisciplinary team.	Given the highly specialized care that the nurse develops at the ICU, the systematization and organization of their work show to be indispensable for a good quality care.
Barra DCC, Dal Sasso GTM, Monticelli M	Evaluate the computerized NP implementation through the ICNP® 1.0, with the ICU nurses at a university hospital in southern Brazil.	They allow emphasizing that the computerized system proposed for implementing NP has ergonomic and usability criteria compatible with the international standards required for the development of systems.	One understands the importance of this kind of studies for the advancement of Brazilian nursing, as this project goes beyond the only intellectual exercise, reversing in executions and practical referrals in a collaborative way.

Figure 2. Distribution of papers included in the integrative review. Alfenas, Minas Gerais, Brazil, 2012.

DISCUSSION

Two categories were established: NP and its use at the ICU (how NP is used by nurses) and NP and its contributions/limitations at the ICU (factors contributing and hindering its implementation).

◆ Nursing process and its use in the intensive care unit

One understands that NP is nursing care in its objective form, covering care interventions and records. This finding emphasizes the need for prioritizing NP at the ICU as strategy for improving the quality of care and professional visibility itself.¹¹

NP is seen as an instrument which qualifies care, and it's indicated as a care tool, but it's referred to as a planning and organization of care instrument, having a managerial connotation. It simultaneously denotes an instrument of the clinical and managerial process which covers both the whole nursing care and management.¹²

Among the various technologies developed in practice, NP can contribute to improve the quality of care by allowing nurses to systematize their interventions in a clear and organized way, focused on customer's needs at the ICU. NP is, therefore, a care technology which guides a sequence of clinical reasoning that may be used by nurses in professional practice, corroborating the triggering of thoughts and judgments developed during care.^{13,14}

Within the ICU, NP, besides gathering, organizing, and ensuring the continuity of care performed by the nursing team allows one to evaluate its efficiency and effectiveness and modify it according to the results in the client's evolution, and also constitute a permanent grounding for nursing education, research, and management.¹⁵

NP application provides nurses with the possibility of performing individualized care, focused on basic human needs, and, besides being applied to care, it may guide decision-making in various situations experienced by the nurse as the nursing team's manager.¹⁶

By taking care for the patient at the ICU using NP, the nurse brings the whole experience practiced in her/his everyday life and, through her/his experience, she/he starts facing care situations, interacting with her/himself, and taking care for, drawing her/his lines of action, setting priorities based on evaluation of the patient's health status and taking the various steps need to care for.¹⁷

The caring process requirements at the ICU establish that nurses have a baggage of scientific knowledge and expertise, combining their technical, intellectual, and welcoming skills to their daily care and administrative practice to provide the critical patient with a holistic care.¹¹

In this context, specifically at the ICU, where the client's clinical status is unstable, NP, developed in all its stages, facilitates the

clinical ability of decision making with regard to nursing care.¹⁸ In face of this, some misconceptions arising from the NP pathways become evident, highlighting that there can be no confusion in the material activity of filling in forms and instruments with the intellectual process of defining and describing problem situations, as well as decision making with regard to the nursing actions needed to solve these problems. It also becomes erroneous using the NP with no theoretical framework. As a result, the systematization models emerged and soon disappeared due to stagnant and meaningless use.¹⁹

♦ Nursing process and its contributions/limitations at the intensive care unit

The use of NP brings benefits, such as: decrease in the incidence and length of hospital stays as the diagnosis and treatment of health problems become faster; creation of a cost effectiveness plan; improvement in the communication between the team, preventing mistakes and unnecessary repetitions; provision of care for the individual and not only for the disease.²⁰

The implementation of a working tool for the systematization of nursing care must have as its premise an individualized, planned, continuous, documented, and evaluated process; this method should facilitate the provision of assistance to the client as a holistic being.²¹ This information is confirmed in the literature by mentioning that assisting the client in a systematized way is even more needed, since it will facilitate the accurate mastery by technique, combining it with individualized care.¹⁸

It's worth emphasizing that NP contributes to the provision of a qualified and individualized care, but there're obstacles for its implementation. This fact may be related to factors such as: lack of team's training, lack of nurses' interest, lack of knowledge with regard to computer access, accumulation of tasks in the care environments, resistances with regard to the use of electronically structured information, lack of time, or, also, because these professionals haven't noticed, in practice, the impact of using NP.^{22,23}

One of the main difficulties for the implementation of NP in the health care institution is the nurse's lack of knowledge. This limitation becomes a barrier to her/his adherence to the implementation of this care method in the health care institutions.²⁴ One highlights that the lack of knowledge on basic contents, such as pathology, physiology, anatomy, pharmacology, and other kinds of

knowledge, is among the difficulties found by nurses to develop the clinical reasoning needed for the implementation of the NP stages.²⁵

This lack of knowledge is the main factor leading nurses to fail implementing NP; as a consequence, they don't become aware of the importance of commitment and involvement with the care methodology for systematizing the assistance. This leads them to don't believe and, therefore, don't adhere to NP and, when they perform it without knowledge, they do so only for complying with an institutional task.²⁴ Also within this context, one emphasizes that the difficulties refer to inadequate theoretical grounding of the biological and human sciences, coupled with the deficient knowledge on semiology (needed to put into practice the techniques used in clinical evaluation: inspection, palpation, percussion, and auscultation), to collect and interpret relevant data.²⁴

One notices that another limiting factor is lack of knowledge on computing, which ends up making it more difficult to implement the computerized NP, especially by the way it has been currently used in the institutions, since there's no nursing methodology specific to the ICU, but, instead, methodologies for the hospital as a whole. The "copy and paste" from an electronic file to another one, which repeatedly occurs in nursing prescription, isn't related to the specific client of the ICU; there's no space for nursing clinical evaluation, evolution, among other aspects.¹¹

One finds out that difficulties for implementing NP in practice are also originated in the teaching related to the tool itself. It has been perceived as poor knowledge with regard to the issue on the part of some teachers. Associated to this, one detects the little use of this care instrument in the fields of internship, something which further complicates the understanding on the part of students who, by not experiencing the use of NP during professional training, end up not knowing how to implement it.²⁵

Along with the lack of nurses' knowledge with regard to NP, there're no continued education services in the nursing division structure of the health care institutions.²⁶ This service could be responsible for conducting training sessions which favor the incorporation of knowledge for the implementation of stages of this instrument, providing nurses with improvement.²⁷ This way, one notices that there's a need that health care institutions enable conditions for qualifying nurses.²⁸

Collaborating to this idea, the lack of time, the excess of activities and clients doesn't apply as a justification for not adopting the process, since, to make an evolution, there's a need for conducting the clinical evaluation.²⁹ One has also pointed out as a factor hindering the implementation of the NP stages the lack of tools which can facilitate the documentation of records by nurses.²⁶

It's worth emphasizing that the use and incorporation of computerization in practice, in an appropriate way, can promote the implementation of the stages of NP. Tools which don't allow inconsistency between data described in the stages of NP may be implemented in computer programs. Furthermore, authors point at the fact that manual notes can hinder reading and understanding.^{16,30}

FINAL REMARKS

In Nursing researches, one observes that NP application at the ICU seeks to increase the quality of nursing actions and strategies aimed at an individualized and humanized relation between the team and the patient. The experience of grounding this study on the application of NP within the ICU context showed that it's possible to reveal the importance of this care instrument in the nursing work process based on the understanding of the meaning of this practice for nurses.

Through the integrative literature review, the study theme, grounded on questioning, allowed resuming the scientific knowledge of NP, encouraging nurses to implement this tool and, especially, the development of a dialectic, critical, and reflective practice with critical patients.

NP addresses an idea which still presents a huge gap between knowledge production and its applicability in the nurse's daily practice, particularly within the ICU. Thus, there's a need for awareness to associate scientific knowledge and technical skill with interest, dedication, and sensitivity required by a humanized care. The combination of these aspects offers safety to the caregiver and to the human being cared for, in order to break with the sensation of a distancing between patient and professional.

According to the way how the patient is evaluated and the significance of this activity for the practice, one perceives conflicts with regard to accreditation in NP, since the nursing professional feels discomfort, dissatisfaction, frustration, and, on the other hand, she/he gets proud, regarding this method as an activity assigned to nurses and

observing the social space of nursing in the conquest of authenticity and freedom of action.

However, there're limiting factors hindering the application of NP at the ICU, such as lack of knowledge on the process by nurses, lack of adherence to a computerized system, lack of continued education services in health care institutions, lack of human resources sizing, as well as lack of time and personal encouragement of professionals, leading to scarcity of theoretical/practical knowledge, especially in aspects related to the constant need for professional training.

Therefore, in the evidence from literature, one realized the importance of having at the ICU application of NP, through this guiding instrument the nurse becomes able to provide a good quality care, once there's will and availability on the part of this professional to overcome the limitations emerging in her/his daily work.

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