# THE NURSING PROCESS ACCORDING TO THE INTERNATIONAL CLASSIFICATION FOR NURING PRACTICE: AN INTEGRATIVE REVIEW

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**ABSTRACT:** This integrative review study was performed with the objective to analyze the application of the nursing process in different professional care settings, according to the International Classification for Nursing Practice (ICNP®). The search was conducted on the LILACS, BDENF, MEDLINE and SciELO databases for the period from 1996 to 2009, and yielded 45 publications for analysis. The results evidenced that the ICNP® presents all the elements that comprise nursing practice, as it integrates, organizes and assures the continuity of the nursing team information and care, which permits the assessment of its efficacy and effectiveness and changes them according to the clients' recuperation outcomes. It is concluded that using the ICNP® allows nurses to organize and develop their logical rationale regarding the care process, as it establishes a concrete relationship between the clinical assessments and the nursing diagnoses, interventions and outcomes.

**DESCRIPTORS:** Nursing process. Classification. Terminology. Nursing care. Nursing records.

# PROCESSO DE ENFERMAGEM CONFORME A CLASSIFICAÇÃO INTERNACIONAL PARA AS PRÁTICAS DE ENFERMAGEM: UMA REVISÃO INTEGRATIVA

**RESUMO:** Estudo de revisão integrativa que objetivou analisar a aplicação do processo de enfermagem, conforme a Classificação Internacional para as Práticas de Enfermagem (CIPE®), nos diferentes cenários do cuidado profissional. A pesquisa foi realizada nas bases de dados LILACS, BDENF, MEDLINE e SciELO, no período de 1996 a 2009, sendo selecionadas 45 publicações para análise. Os resultados evidenciaram que a CIPE® apresenta todos os elementos que constituem a prática de enfermagem, pois integra, organiza e garante a continuidade das informações e cuidados da equipe de enfermagem permitindo avaliar sua eficácia e efetividade e modificá-los de acordo com os resultados obtidos na recuperação dos clientes. Concluiu-se que a utilização da CIPE® possibilita aos enfermeiros a organização e o desenvolvimento do raciocínio lógico no processo de cuidar, pois estabelece uma relação concreta entre as avaliações clínicas, os diagnósticos, as intervenções e os resultados de enfermagem.

**DESCRITORES:** Processos de enfermagem. Classificação. Terminologia. Cuidados de enfermagem. Registros de enfermagem.

# PROCESO DE ENFERMERÍA SEGÚN LA CLASIFICACIÓN INTERNACIONAL PARA LA PRÁCTICA DE ENFERMERÍA: UNA REVISIÓN INTEGRATIVA

**RESUMEN:** Estudio de revisión integrativa con el objetivo de analizar la aplicación del proceso de enfermería, de acuerdo con la Clasificación Internacional para la Práctica de Enfermería (CIPE®) en los diferentes escenarios de la atención profesional. La encuesta se realizó en las bases de datos, BDENF, LILACS, MEDLINE y SciELO en el período 1996 a 2009, 45 publicaciones fueron seleccionadas para su análisis. Los resultados mostraron que la ICNP® tiene todos los elementos que constituyen la práctica de la enfermería, ya que integra, organiza y garantiza la continuidad de la atención y la información que permite al personal de enfermería evaluar su eficacia y efectividad y modificar de acuerdo a los resultados obtenidos la recuperación de los clientes. Se concluyó que el uso de la ICNP® permite organizar y desarrollar el razonamiento lógico en el proceso de atención de enfermería y establece una relación concreta entre las evaluaciones clínicas, diagnósticos, intervenciones y resultados de enfermería.

**DESCRIPTORES:** Procesos de enfermería. Clasificación. Terminología. Atención de enfermería. Registros de enfermería.

# INTRODUCTION

Since the time of Florence Nightingale, the continuity of nursing care has been indispensible and, as of the 1950's, the care plan has been considered the ideal solution for the care of critically ill patients.[1] Nursing, realizing the need to develop a working method that would make its practice more visible, legitimate and autonomous, sought its identity by developing its own body of knowledge.[2-3]

The "Nursing Process" then emerged, which was used for the first time in 1961 by Orlando.[1] The Nursing Process (NP) at that time consisted of three basic elements: the client's behavior, the nurse's reaction, and the nursing actions. Care was planned based on these components and was then carried out in phases.[1] In 1985, the World Health Organization officially proposed its four-phase operationalization: Assessment, Planning, Implementation and Evaluation.[4]

Thus the NP began to be used as a method to improve the quality of nursing care, allowing nurses to systemize their actions and delegate tasks to the nursing team clearly and efficiently, centered on the real needs of their clients. Because it is connected with the technical-scientific and philosophical underpinnings of the profession, the NP consists of a care technology that can be used by all nurses in their professional practice, demonstrating the unfolding of thoughts and judgments during the care provided.[2,5]

By providing quality care, safe and free of risk, it is understood that nurses make a nursing diagnosis assessment, elaborate the clinical evolution in every work shift, provide complex care demanding specific skills and knowledge, and manage technological equipment.[6]

Therefore, for nurses to develop their practice, whether it is educational, administrative, research-based or clinical in character, they must be grounded in a sound conceptual basis.[4] The conceptual basis for nursing proposed in the present study involves the use of specific terminology, structured and agreed upon among nurses, the main purpose of which is to demonstrate the value of nursing and its contributions to health care. By using unified terminology, nurses are able to code, store and recover information in a format that is useful and applicable,[7] in addition to evidencing the elements of nursing practice, i.e., the nursing diagnosis, expected outcomes, and actions.[8]

Today, there are several nursing classification systems for developing one or more stages of the NP, among which the International Classification for Nursing Practice (ICNP®) stands out. This classification system was elaborated by the International Council of Nursing (ICN) for the implementation of the NP, as it consists of a standardization of scientific terminologies used in nursing, gathering the diagnoses, interventions and outcomes of nursing practice.[9]

In essence, the components of the ICNP® are the elements of nursing practice, i.e., what nurses do in face of certain human needs in order to produce specific outcomes. It refers to a unified language that expresses the elements of nursing care and permits comparisons between clinical contexts, client populations, geographical areas, or time; identification of nursing in multidisciplinary teams; differentiation of practice by levels of preparation and expertise in nursing; and advances in the correlation between nursing activities and health outcomes.[9]

In view of these considerations, the following research question emerged: how has the NP according to the ICNP® been applied in different professional care settings?

This question motivated the search for knowledge in national and international publications, therefore justifying the present study, as it is understood that learning and assigning visibility to this theme, considering its current and innovating feature, contributes to managing and improving the quality of nursing care.

Therefore, the aim of this study was to analyze the application of the Nursing Process, according to the ICNP®, in different professional care settings.

# METHODS

An integrative literature review was performed on scientific studies published between 1996 and 2009. The stages comprising an integrative review of the literature are founded on a working structure defined by a previously designed protocol, which were adopted for the purpose of maintaining scientific rigor. They are: 1) selecting the research question; 2) defining the inclusion criteria for the studies and selecting the sample; 3) organizing the selected studies into tables, considering all the common characteristics; 4) critical analysis of the findings, identifying differences

and divergences; 5) interpretation of the results; and 6) creating a clear report of the evidence that was found. These stages comprised the protocol to be followed.[10]

The studies were identified through a bibliographic survey of publications indexed on the following databases: Medical Literature and Retrieval System on Line (MEDLINE), Latin American and Caribbean Health Sciences Literature (LILACS), Data Bank in Nursing (BDENF) and Scientific Electronic Library Online (SciELO).

The database search was performed in October of 2009. The criteria for including the articles were: articles had to be published in Portuguese, English or Spanish between 1996 and 2009; articles had to contain the following keywords/descriptors in their titles and/or abstracts: *International Classification for Nursing Practice* (ICNP), *nursing assistance, nursing system, nursing process, nursing classification, nursing terminology, nursing nomenclature* and *nursing diagnoses*, and their respective translations in Portuguese and Spanish; articles had to be full-text and available for analysis; and the ICNP® had to be mentioned/used as the classification system in the application/development of the NP in different nursing care scenarios. The following article categories were included: research, reflection, literature review/systematic review and editorial. The resource used in the research was the Boolean expression "*and*", always associating the word ICNP to the other words or descriptors.

The following exclusion criteria were adopted: studies that applied the NP based on classifications/terminologies/taxonomies other than the ICNP®; the full-text was not available; and articles published in languages other than Portuguese, English or Spanish.

Fifty-four articles were selected. Their abstracts and then the full-text versions were carefully read. Forty-five articles met the proposed study objective and the inclusion and exclusion criteria. It is highlighted that the nine excluded articles only mentioned ICNP®, without applying it to the nursing process.

The analysis method that was used was founded on the "Scientific Reading Method", complying with the following steps, chronologically ordered: a) syncretic view – recognition reading, locating the sources in a preliminary approach to the theme and a selective reading to locate information based on the study purpose; b) analytical view – critical-reflexive reading of the selected texts, reflecting and searching for the meanings and choosing the main ideas; and c) synthetic view – final stage completed by performing an interpretative reading.[11]

In order to systematize the analysis of the selected studies, based on the proposed method, a specific data collection instrument was created for filling in the following information: authors, country, language, publication category, year of publication, periodical, study objective, version of the ICNP® used, study design, main results and conclusions. Thus, grouped according to the similarity of their contents, three empirical categories were constructed for the analysis: "characterization of the studies"; "historical evolution of the ICNP®" and "application of the ICNP classification system® in clinical nursing practice".

## RESULTS AND DISCUSSION

### Characterization of the studies

From the MEDLINE database, 25 articles were included in the analysis, 12 from SCIELO, five from LILACS, and three from BDENF, totaling 45 analyzed articles. It is highlighted that 58% (26) of the publications were international and 42% (19) national.

The countries of origin of the studies were distributed as follows: Brazil 51% (23); Unites States of America (USA), 11% (05); and Japan, Korea and Poland 13.5% (6), two from each country. Together, South Africa, Australia, Botswana, Chile, Denmark, United States/Brazil, England, Italy, Norway, Pakistan and Taiwan totaled 24.5% (11) of the studies, one article from each nation.

Regarding the language of the texts, 58% (26) of the articles were published in English, 40% (18) in Portuguese, and only 2% (01) in Spanish. It should be noted that only 4.5% (02) of the articles were available in both English and Portuguese.

The studies were classified according to their publication category stated in the journal: 78% (35) research studies; 13.5% (06) literature reviews; 4.5% (02) experience reports; 2% (01) update article; and 2% (01) editorial.

Regarding the year of publication, the collected data presented the following distribution (Figure 1):
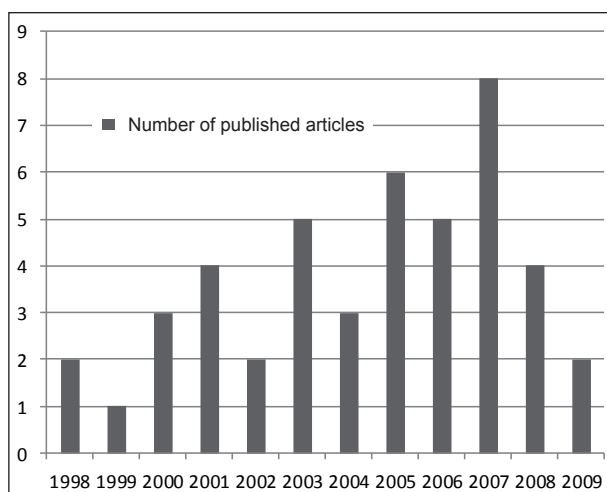
**Figure 1 – Number of studies that applied the ICNP® in the period from 1998 to 2009**

In Figure 1, the fact that there were eight publications related to the ICNP® in 2007 draws attention. This increase in the number of publications could be associated with a greater familiarity, dissemination and usage of the ICNP® by nursing worldwide. It is highlighted that no articles published in 1996 and 1997 were located, considering the adopted search criteria. This was expected, because the first version of the ICNP® was published in 1996, so studies began from that year on.

The articles were categorized according to the type of study and the adopted methodological approach, as follows: 60% (27) qualitative studies; 38% (17) quantitative studies; and 2% (01) editorial. The methodological approach adopted in the studies was distributed as follows: descriptive, 65% (29); literature review, 15% (07); methodological research, 7% (03); technological production, 4.5% (02); case study 4.5% (02); quasi-experimental, 2% (01) and editorial, 2% (01).

The analysis methods employed in the articles (excluding the editorial) were: definition and/or validation of concepts and the translation of terms, 42% (19); cross-mapping and/or crossing data/terms, 33.5% (15); reference literature, 29% (13); agreement rate, 4.5% (02); content analysis, 2% (01); and univariate analysis, 2% (01). It should be noted that some studies used more than one analysis method.

The ICNP® versions used in the studies were: 20% (09) CIPE® Alfa version; 27% (12), ICNP® Beta version; 24.5% (11), ICNP® Beta 2 version; 13.5% (06), ICNP® version 1.0; 2% (01), versions Alfa + Beta + 1.0, 2% (01), versions Beta 2 + 1.0 + CIPESC (International Classification for

Nursing Practice in Collective Health); and 11% (05) of the studies did not specify which version was used.

The studies that applied the ICNP® in the NP were performed in the following nursing specialties: Neonatal Intensive Care Unit (NICU), Coronary Care Unit, cardiology, public health, family planning, mental health, oncology, and communicable diseases, with one study in each specialty area; geriatrics, surgical units, and pediatrics, with two studies in each area; four studies in clinical medicine; five studies in adult ICUs; seven studies in women's health; and 20 studies in "general" areas.

It is highlighted that in the women's health specialty, the studies were developed in the following areas: ambulatory gynecology (two articles); obstetric hospitalization (four) studies; and gynecology-obstetrics in public health (one article). Regarding the "general" specialty, it was referred to in this way because the studies addressed the ICNP® in a broad sense, with no focus on any specific nursing area. It should be highlighted that some studies were performed simultaneously in more than one clinic/specialty.

The main themes approached in the selected studies using the ICNP® were the definition and/or validation of concepts and the translation of terms/cross-cultural adaptation of the ICNP®, based on the registers/records and/or other classification systems/existing terminologies, totaling 55.5% (25) of the selected studies. It is highlighted that the computerized medical record system and/or electronic patient record was used and/or mentioned in 11% (05) of the selected studies.

**Evolution history of the ICNP®**

The first proposal for creation of the ICNP® took place in 1989, by the *International Council of Nurses*. The Council, committed to promoting the advancement and visibility of nursing worldwide, is currently comprised of 126 members, representing 105 National Nursing Associations and 21 World Health Organization (WHO) Nursing Collaborating Centers.[7,9,12]

Since then, several studies, conferences and meetings have been performed across the globe for the purpose of improving this classification system. In 1996, the Alpha version of the ICNP® was published, followed by the publication of the ICNP® Beta version in 1999, ICNP® Beta 2 version in 2001 and, finally, in 2005, ICNP® version 1.0. In

2006, ICNP® version 1.0 was translated into the Portuguese language through the efforts of the Portugal *Ordem dos Enfermeiros* and, in 2007, that version was translated to Brazilian Portuguese.[9] In 2008 ICNP® version 1.1 was published, and in July of 2009 version 2.0 of the ICNP® was launched.[13]

The Alpha version of the ICNP®, considered a unifying milestone, stated that this classification system would provide new vocabulary and a structure in which the existing vocabulary could be mapped and compared to other existing classification systems. In this version, the terms used by nurses worldwide were grouped and organized hierarchically.[9,14-15]

The ICNP® Beta version, launched in 1999, provided nurses with the opportunity to continuously participate in the process of its development and expansion. At the time, the ICNP® intended to establish a common language to describe and document nursing practice, providing nurses with a vocabulary that could be used to include nursing data in computerized information systems. The ICNP® Beta version stimulated research development in the many fields of practice of nurses, thus contributing to the development of nursing language.[9,16]

The Beta 2 version, published in 2002, was defined operationally as a classification of nursing phenomena, nursing actions/interventions and nursing outcomes that describe nursing practice. Elaborated using combinatorial terminology, through a multi-axial structure, this version consisted of eight axes in the nursing phenomena classification structure, and another eight axes in nursing action classification.[2,17]

The ICNP® Beta version was used by 27% (12) of the analyzed articles as a classification system. However, the Beta 2 version had a broader global use.[9] Nurses using the worldwide Beta 2 version performed studies/research of translations, validation of terms, definition of concepts, cross-mapping, description of nursing phenomena and nursing interventions,[2,9,17-19] and analysis reports, thus originating the publication of ICNP® version 1.0.

ICNP® version 1.0 reflected the main reformulations that nurses identified, promoting a classification system that was technologically more robust and more accessible to nurses. ICNP® version 1.0 permitted nurses to make integrated, systematic records of their practice, using the nursing diagnoses, interventions and outcomes in various population contexts.[9]

The articles that applied ICNP® version 1.0 to define nursing terms, phenomena, and actions/interventions totaled 13.5% (06).[3,20-22] Version 1.0 is considered to be more than a vocabulary, i.e., it is a resource that can be used, by means of cross-mapping, to develop new vocabulary and identify the relationship between concepts and vocabularies, thus creating a reference terminology.[9]

In 2008, the ICN presented ICNP® version 1.1, once again founded on nurses' evaluations and recommendations. In this version, the ICNP® was created to match the ISO Norm 18.104, referred to as *Health informatics - integration of a reference terminology model for nursing*.[13,23-24] ICNP® version 1.1 included the statements of nursing diagnoses, interventions and outcomes in the classification description; these statements were the outcome of the nurses' efforts to elaborate the Nursing Catalogues aimed at specific areas of professional practice.[13]

Also in 2008, the WHO included the ICNP® in the Family of International Classifications (WHO/FIC). This fact was determinant for the new adjustment of the ICNP® structure to that of other classifications in the family, culminating with the launch of version 2.0 in July of 2009, during the ICN congress held in South Africa. In version 2.0, over 400 new concepts were added to its structure, aiming to assure the consistency and precision of this classification system.[13]

## Application of the ICNP® classification system in nursing clinical practice

The included studies revealed that the ICNP® provides a structure for data, information and knowledge that meets the nurses' practice needs, as it integrates diagnosis, interventions and outcomes within each patient's clinical evaluation.[8-9,13,18,20-22] This classification system presents all of the elements that comprise nursing practice, because it integrates, organizes and guarantees the continuity of the information/care provided by the nursing team, thus permitting the evaluation of its efficacy and effectiveness, as well as the ability to make changes according to the results obtained during the patients' recovery.[22]

In establishing the ICNP® as the central focus of this study, it was realized that this theme is current, relevant and of great interest to nurses, considering that 78% (35) of the published studies were the result of research. In this perspective, by using a unified terminology to outline the ele-

ments that comprise nursing practice, nurses can compare their activities in various clinical, population, geographic or temporal contexts, as well as identify their unique and essential contributions towards the multidisciplinary health team.[9]

The studies evidenced that the motivation of the ICNP® was to support the nursing practice process and increase the knowledge necessary to provide cost-effective and evidence-based quality nursing care.[6,13,15-16,20-22,25-26] In other words, nurses were continuously encouraged to look at the evidence of practice, associate it with the presented data and decide upon the best method of care to be provided to the patient.[27]

The ICN, in recognizing the need to establish a classification system for nursing practice, has collaborated with the expansion of the ICNP® worldwide. This statement is confirmed by the present study findings, in which 42.5% (19) of the selected articles were found in the *International Nursing Review* journal, which is published by the ICN.

In 1999, in the State of Santa Catarina, Brazil, studies began to surface regarding the application of the ICNP® in the computerized NP in the ICU.[6,22,28-32] The first study developed and evaluated a proposal for clinical evaluation and nursing diagnoses and interventions for the cardiovascular system, using ICNP® version β1.[28] The second study proposed and evaluated the development of NP stages for the respiratory system, also applying ICNP® version β1.[29]

Based on the nurses' evaluations in these two studies[28-29] and the changes that followed, in 2006 it was possible to establish a proposal for an informational structure which included all the human organ systems and the nursing care needs for multitrauma patients, using ICNP® version 1.0. The results revealed that the computerized NP has ergonomics criteria and content with emphasis on the system interface, content and data safety, being evaluated as "Very Good" by the study participants. This study concluded that the online computerized system (fixed system) founded by ICNP® version 1.0 proved to be a structure that promoted organization, control and the logical view of the nurses' clinical rationale in the process of caring for an ICU patient.[6]

In 2008, continuing the studies initiated in 1999, a new study developed the structure of an information system and implemented the NP in a *Personal Digital Assistant* (PDA) mobile device integrated with the previously developed online computerized system. The general goal of this study was to evaluate, with the nurses of two general ICUs, the ergonomics, content and usability criteria of the computerized NP in a PDA mobile device developed in accordance with ICNP® version 1.0.[31] The results evidenced that the computerized NP based on ICNP® version 1.0 had the content, technical, organizational and interface criteria regarding ergonomics (mean 4.51; ±0.24) and usability (mean 4.65; ±0.25) considered "excellent" by the evaluators. The result for the ANOVA was 0.12 (p value>0.05), concluding that there was a difference between raters (nurses and faculty apart from the system programmers). However, all ergonomics criteria were evaluated in the same way; that is, there was no particular criterion that stood out among the others. It was concluded that this computerized system using a PDA interface was a coherent, effective, possible and consistent proposal because, in addition to permitting the integration between research, professional practice and teaching, it allowed nurses to provide bedside care to patients.[31-32]

These studies also pointed out that the ICNP® permitted nurses to organize and develop their logical rationale in the process of taking care of ICU inpatients, because it permitted these professionals to establish a concrete relationship between the clinical evaluations and the nursing diagnoses, interventions and outcomes through the use of computerized tools.[6,22,28-32]

In this sense, it is highlighted that the computerized NP applying the ICNP® can contribute to nursing, as it promotes the improvement of healthcare quality, stimulates reflexive and affective thinking, facilitates planning, decision making, communication, and management, and promotes changes to the organizational structure.[30]

Considering all the articles included in this study, the results pointed out that almost all the clinical specialties and/or areas of nursing practice have been assessed by studies applying the several ICNP® versions as the theoretical framework and/or classification system used to develop the Nursing Process.

In the perspective of developing new knowledge and transforming professional nursing practice, it is observed that there was an investment/growth in the number of studies that guide the standardization of nurses and boosted the development of scientific practice and the production of a specific language for the profession.[33] Furthermore, it is also highlighted that these studies

aimed at fulfilling the need to develop a working method that made nursing practice visible, demonstrating the benefit of the activities developed and promoting a higher quality of nursing care.[3]

## FINAL CONSIDERATIONS

The articles included in the present study permitted the authors to describe the evolution history of the ICNP® since its first publication, highlighting it as a unifying landmark for nursing language/vocabulary, as well as analyzing the applications of this classification system in the different professional care settings.

The studies evidenced that the ICNP® is broad, as it permitted the development and improvement of professional practice, collaborating with the visibility of nursing in the healthcare arena, which can be adopted by nurses in any of the various specialties.

The application of the ICNP® to the development and implementation of the nursing process in the contexts of practice permitted nurses to organize and develop their logical rationale in the process of care, as it established a concrete relationship between clinical evaluation and the nursing diagnoses, interventions and outcomes.

It is highlighted that the studies of definitions and/or validation of concepts and terms of the ICNP®, as well as the use of the cross-mapping technique, made a huge contribution to the evolution and dissemination of this classification system across the many countries and clinics/specialties of nursing practice.

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