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REVIEW

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# Terminological subsets of the International Classification for Nursing Practice: an integrative literature review

## Subconjuntos terminológicos da Classificação Internacional para Prática de Enfermagem: uma revisão integrativa da literatura

## Subconjuntos terminológicos de la Clasificación Internacional para la Práctica de Enfermería: una revisión integrativa de la literatura

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## ABSTRACT

**Objective:** To characterize the scientific production available in the literature on the construction of terminological subsets of ICNP® with emphasis on the clientele and/or health priority to which the subsets are intended, the theoretical reference used and the validation process of constructed statements. **Method:** An integrative review of the literature with bibliometric approach of publications between 2008 and 2017. **Results:** Thirty-five (35) publications were included for analysis. Most of the studies were linked to postgraduate programs of universities in Northeast Brazil. Regarding the attended clientele, there was a trend towards the care of cancer, older adult and child/adolescent patients. For the theoretical reference for constructing the subset, there was a trend towards using the Basic Human Needs model. The validation process was not described in all studies. **Conclusion:** The importance of constructing terminological subsets of ICNP® aimed at priority health clientele is reinforced in order to enhance the use of this terminology. The methodological course should be based on specific methodologies, and the construction process should be parallel to the validation process.

## DESCRIPTORS

Nursing Care; Classification; Standardized Nursing Terminology; Nursing Diagnosis; Review.

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## INTRODUCTION

The terminology subsets of the International Classification for Nursing Practice (ICNP®), or ICNP® Catalogs, are groupings of diagnostic statements, results and appropriate nursing interventions to particular care areas, favoring the adoption of universal language accessible to nurses[1]. The construction of these subsets has contributed to propagating a standardized language used by nurses all over the world as a technological resource which is capable of fortifying the purposes of the profession in providing care for human beings during the health-disease process[2].

The subgroups, whose development was encouraged by the International Council of Nurses (ICN) only after 2008, facilitate the integration of ICNP® into the work process of these professionals in different contexts, becoming a reference during their care practice. They can be targeted towards clients or health priorities and become important as they address the specific need of particular care areas, directing the construction of appropriate diagnoses, outcomes, and nursing interventions for each area[3].

In this context, the clientele or the patient can be defined as the subject to whom the diagnosis refers or the beneficiary of the nursing intervention, and individuals, families and communities that receive nursing care may be included. Health priorities can fit health conditions (e.g., diabetes, tuberculosis), clinical care specialties (e.g., women's health, oncological care), and nursing phenomena (e.g., pain, urinary incontinence)[3-4].

The terminological subsets of ICNP® developed in some North and South American, Oceanic and European countries are found on the ICN homepage, such as: disaster nursing, critical care, family process, community nursing, pediatric pain management, adherence to treatment, hypertension, dementia in community care and mental health[5].

The dissemination of these sub-sets at an international level promotes adoption of standardized Nursing language to diagnose and evaluate the outcome of their care, and intervene in it. When adopting a unique vocabulary regarding the elements that describe their clinical practice, nurses facilitate the communication process and provide greater visibility to their work[2].

In addition to clientele identification and/or health priority, choosing a theoretical framework for its structuring is considered a prerequisite for constructing ICNP® terminological subsets. This framework serves as a foundation for the subset structure and can originate from Nursing theories themselves or not. Moreover, this framework can link two or more theories together[4].

In order to organize the creation of these subsets, the ICN made available in 2008 a guideline consisting of 10 steps. In 2010, two ICN researchers presented a methodology for developing subsets composed of six steps linked to the three phases of the ICNP® terminology – research and development; maintenance and operation; and dissemination and education[5]. There is a third methodology in addition to these, which is a compilation of the first two developed by researchers from the Universidade Federal da Paraíba and collaborators[5].

In its methodology, the ICN provides identification of the clientele and/or health priority; documentation of the importance for the Nursing client group and/or health priority; contact with the ICN; use of the seven-axis model; identification of evidence and literature; development of support applications; test or validation of constructed statements; the addition, withdrawal or revision of statements; working with the ICN to publish the subset; and assistance from the ICN in disseminating the subset. As proposed by the two ICN researchers a few years after the first methodology, the second methodology comprises identification of the clientele and/or health priority; collection of terms and concepts; mapping between identified concepts and ICNP®; modeling new concepts; finalization; and, finally, dissemination of the subset. The Brazilian method recommends identification of the clientele and/or health priority; justification of importance for nursing; the theoretical model choice; mapping between identified terms and ICNP®; construction of statements; validation of constructed statements; and structuring of the subset[5].

In building a subset, it is possible to identify actual and potential client needs by more effectively planning care and allowing nurses to design a more comprehensive care plan. Above all, the use of a standardized language results in clearer and more objective records, guaranteeing greater trustworthiness to the institution and professional visibility[6].

In this sense, the present study aims to characterize the scientific and academic production available in the literature on the construction of ICNP® terminological subsets, with an emphasis on the clientele and/or health priority to which the subsets are destined, on the theoretical framework used and on the validation process of the constructed statements.

## METHOD

### Study design

An integrative literature review was developed using a bibliometric approach. Studies with this approach enable systematizing the studies developed in a certain field of knowledge, mapping the origin of existing concepts, pointing out the theoretical references used to support the discussions and the methodological approach used. In addition, this enables deepening the investigated phenomenon and points out knowledge gaps which need to be filled[7-8].

The characterization of the scientific production available in the literature on constructing ICNP® terminological subsets was performed by following the bibliometric steps: search for publications in the databases; definition of inclusion and exclusion criteria; extraction of data from the selected studies; and analysis and interpretation of the studies with synthesis of the extracted knowledge.

The study was developed from the following guiding question: what is the scientific and academic production

available in the literature on the construction of ICNP® terminological subsets?

### Selection criteria

Only publications from the last 10 years were selected for analysis. Within this time frame, publications which were about the construction of ICNP® terminological subsets or those which at least had the construction of nursing diagnoses and interventions, or essential concepts for the presentation of the subsets were included. The publications had to be in Portuguese, English or Spanish. Those studies which did not contain results (foreword) and were not related to the subject were excluded from the review. Strategies were adopted for the publications that did not have a full text available in order to acquire this material through contact with the authors and/or by requesting the publications through librarians of a federal teaching institution.

### Data collection

Data collection was carried out in September 2017. For selecting the publications, some databases and virtual libraries were consulted according to Chart 1.

**Chart 1** – Search strategy for the integrative review – Rio de Janeiro, RJ, Brazil, 2017.

| Database | Types of publications | Keywords | Descriptors |
|---|---|---|---|
| *Biblioteca Virtual de Saúde – Literatura Latino-Americana em Ciências da Saúde (LILACS)* | Scientific articles | -- | Nursing *AND* Classification *AND* Terminology |
| Cumulative Index to Nursing and Allied Health Literature (CINAHL) | Scientific articles | *International Classification for Nursing Practice OR standardized Nursing terminology OR* ICNP® *OR subset* ICNP® *OR subset for* ICNP® *OR* ICNP® *term* | -- |
| Pubmed | Scientific articles | *Nursing terminology OR* Terminolog* *subset* ICNP® *OR Construction terminology subsets OR Terms and specialized Nursing language* | -- |
| Scopus | Scientific articles | *International Classification for Nursing Practice OR standardized Nursing terminology OR* ICNP® *OR subset* ICNP® *OR subset for* ICNP® *OR* ICNP® *term* | -- |
| *Portal da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)* | Theses and Dissertations | "International Classification for Nursing Practice" | -- |

### Data analysis and processing

In order to characterize the scientific production available in the literature on the usage of ICNP terminological subsets, data were obtained from accessing each of the publications and simultaneously systematizing them in an instrument in the Microsoft Excel® spreadsheet format with the following respective fields: study title, publication year, postgraduate program to which the study is linked, clientele/health priority to which the subsets are destined, theoretical reference used and description of the validation process (indexes used, number of specialists) of the constructed statements.

In addition, descriptive statistics conducted in the same software was used to highlight some data that were expressed as relative frequencies.

### Ethical aspects

It was not necessary to present the study to a Research Ethics Committee, since it does not comply with "research involving human beings" according to Resolution 466/12, since this review uses open access studies. Exemption from using an Informed Consent Form is also justified for this same reason.

## RESULTS

A total of 1,164 productions were found through the search conducted by two researchers independently in the VHL (LILACS), CINAHL, Pubmed and Scopus databases. Of these productions, only 441 were within the pre-established 10-year temporal cut and therefore were submitted to title and abstract analysis. A third person was invited to analyze the relevance of the selected studies, since the two researchers initially diverged in their opinion about 11 studies because they believed they did not respond to the guiding question of the review. Therefore, this last researcher defined the studies which would be completely analyzed (140) by reading in full after her evaluation.

Next, 110 studies were found in the search conducted in the Theses and Dissertations Catalog of the CAPES journal portal. Of these, only 84 were within the pre-established 10-year temporal cut and were submitted to title and abstract analysis. A third person was invited to analyze the relevance of the selected studies, since the researchers diverged in their opinion on 10 studies because they believed that they did not respond to the guiding question of the review. After the final decision of this researcher, it was defined that 46 studies would be analyzed by complete reading.

Prior to full reading, duplicate and incomplete publications were excluded (abstract only available) and 100 publications were read. From these publications, 35 were chosen to constitute the corpus of analysis, as shown below (Figure 1).

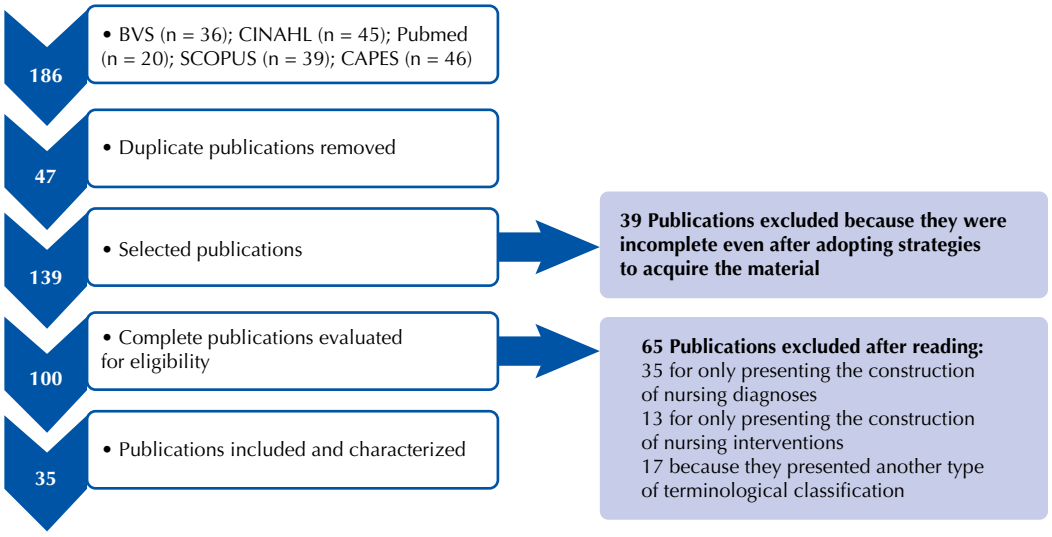



**Figure 1** – Flowchart for identification, selection and inclusion of the investigated publications – Rio de Janeiro, RJ, Brazil, 2017.

Of the total number of studies found, 31 (88.6%) of them were linked to graduate programs, meaning that they were dissertations, theses or articles derived directly from these studies.

Among the clientele and/or health priority to which these subsets were designed, there was a trend towards care of cancer (20%), older adults (20%) and child/adolescent (11.44%) patients; followed by patients with HIV/AIDS (5.71%), congestive heart failure (CHF) (5.71%), surgical patients (5.71%) and others (Chart 2).

**Chart 2** – Distribution of the studies found according to the publication year, institution to which the postgraduate program is linked, clientele/health priority and theoretical reference – Rio de Janeiro, RJ, Brazil, 2017.

| Author/Year | Institution | Clientele/health priority | Theoretical reference |
|---|---|---|---|
| Araújo AA[9]; 2009 | *UFPB* | CHF patients | Pathophysiological model of CHF |
| Carvalho MWA[10]; 2009 | *UFPB* | Cancer patients | Theoretical model for nursing care in cancer pain |
| Medeiros ACT[11]; 2011 | *UFPB* | Cancer patients | The activities of living model |
| Lins GAI[12]; 2012 | *UnB* | Ecological and occupational care | The Theory of Becoming Human |
| Nóbrega RV[13]; 2012 | *UFPB* | Patients with systemic arterial hypertension | Theory of Basic Human Needs and Chronic Care Model |
| Torres E[14]; 2012 | *UFF* | HIV/AIDS patients | Theory of Basic Human Needs |
| Silva ES[15]; 2013 | *UFES* | Colostomy patients | Theory of Basic Human Needs |
| Nascimento DM[16]; 2013 | *UFPB* | Patients undergoing prostatectomy | Theory of Basic Human Needs |
| Medeiros ACT, Nóbrega MML[17]; 2013 | *UFPB* | Older adults | The activities of living model |
| Fialho LFG[18]; 2013 | *UFF* | Cancer patients | Theory of Basic Human Needs |
| Fonseca VM[19]; 2013 | *UFES* | Cancer patients | Theory of the Support System-Education |
| Araújo AA, Nóbrega MML, Garcia TR[20]; 2013 | *UFPB* | CHF patients | Pathophysiological model of CHF |
| Lins TH, Lima AAXBC, Veríssimo RCSS, Oliveira JM[21]; 2013 | No affiliation | Trauma victims – prehospital care service | Not mentioned |
| Medeiros ACT[22]; 2014 | *UFPB* | Older adults | The activities of living model |

continue…

…continuation

| Author/Year | Institution | Clientele/health priority | Theoretical reference |
|---|---|---|---|
| Clares JWB[23]; 2014 | *UECE* | Older adults | Theory of Fundamental Human Needs |
| Furtado LG[24]; 2014 | *UFPB* | Patients with diabetes mellitus in specialized care | Theory of Basic Human Needs |
| Oliveira JMM[25]; 2014 | *UFPB* | Older adults | Theory of Basic Human Needs |
| Cavalheiro MA[26]; 2014 | *PUC Paraná* | Nursing care in primary health care | Theory of Basic Human Needs |
| Albuquerque IM[27]; 2014 | *USP* | Children – adolescents | Theory of Practical Intervention of Collective Health Nursing |
| Silva RS[28]; 2014 | *UFBA* | Cancer patients | The Dignity-Conserving Care Model |
| Queiroz SMB[29]; 2014 | *UECE* | Older adults | Theory of Fundamental Human Needs |
| Buchhorn SMM[30]; 2014 | *USP* | Children - adolescents | References of human development and essential needs of children |
| Castro MCF[31]; 2015 | *UFF* | Cancer patients | Theory of Basic Human Needs |
| Glowacka M, Kalinowska A[32]; 2015 | International | Multiple sclerosis patients | Not mentioned |
| Laukvik LB, Molstad K, Fossum M[33]; 2015 | International | Patients with dementia | Not mentioned |
| Castro MCF, Fuly PSC, Garcia TR, Santos MLSC[34]; 2016 | *UFF* | Cancer patients | Theory of Basic Human Needs |
| Martins TG[35]; 2016 | *UFS* | Children – adolescents | Theory of Basic Human Needs |
| Souza GLL, Silva KL, Medeiros ACT, Nóbrega MML[36]; 2016 | *UFPB* | Children – adolescents | Theory of Basic Human Needs |
| Tosin MHS[37]; 2016 | *UFF* | Patients with Parkinson's disease in rehabilitation | The Competency Model for Professional Rehabilitation Nursing |
| Neto VLS[38]; 2016 | *UFRN* | HIV/AIDS patients | Theory of Basic Human Needs |
| Vieira MM, Oliveira DMN, Carvalho MWA, Nóbrega MML[39]; 2016 | *UFPB* | Patients from the surgical clinic of a hospital school | Theory of Basic Human Needs |
| Siqueira MCF[40]; 2017 | *UFPB* | HIV/AIDS patients | Theory of the Support System-Education |
| Cunha ACR[41]; 2017 | *UFPB* | Patients from the surgical clinic of a hospital school | Theory of Basic Human Needs |
| Carvalho MWA[42]; 2017 | *UFPB* | Cancer patients | Model for Nursing care in cancer pain and the Comfort Theory |
| Liu L, Coenen A, Tao H, Jansen KR, Jiang AL[43]; 2017 | International | Pregnant women in prenatal care | Not mentioned |

Legend: *Universidade Estadual do Ceará (UECE); Universidade Federal do Rio Grande do Norte (UFRN); Universidade Federal da Paraíba (UFPB); Universidade Federal de Sergipe (UFS); Universidade de Brasília (UnB); Universidade Federal do Espírito Santo (UFES); Universidade de São Paulo (USP); Universidade Federal Fluminense (UFF); Pontifícia Universidade Católica do Paraná (PUC Paraná).*

Regarding the theoretical model of the study, there was a trend towards using the Basic Human Needs framework, with 15 publications (42.9%). These subsets were intended for hypertensive patients in primary care, those with HIV/AIDS, colostomy patients, clients undergoing prostatectomy, patients with multiple myeloma and others, people with diabetes mellitus in specialized care, institutionalized older adults, nursing care in primary healthcare, patients in palliative care with tumor injuries, infants with cow milk protein allergy, hospitalized children and patients from the surgical clinic of a hospital school.

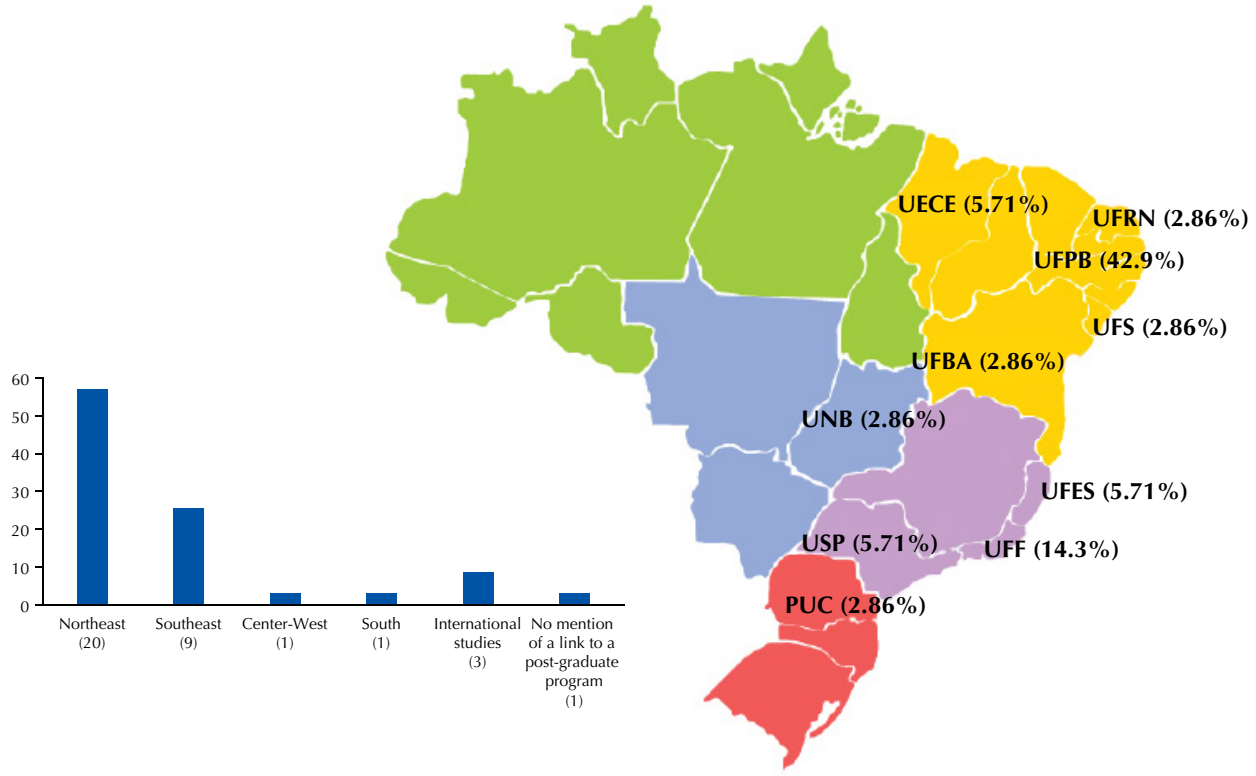
It was observed that this theoretical framework was adapted to different clientele and was used to organize the proposals of diagnosis/results and Nursing interventions within the corresponding affected basic human needs.

The main language of these publications was Portuguese[9-31,34-42] (91.4%), followed by English[32-33,43] (8.6%). From the 35 publications found, the highest number was published in the year 2014[22-30] (25.71%), followed by the years 2013[15-21] (20%) and 2016[34-39] (17.14%). Most of the publications were academic master's dissertations[9-14,16,23,25-26,29,35,38,40-41] (42.9%), followed by articles[17,20-21,32-34,36,39,43] (25.7%), doctorate theses[22,24,27-28,30,42] (17.1%) and professional master's dissertations[15,18-19,31,37] (14.3%).

Within the established time frame, the oldest subsets found were the "ICNP® Catalog for Patients with Congestive Heart Failure" and "ICNP® Catalog for Cancer Pain", both dating from 2009 and linked to the Graduate

Program in Nursing of the Universidade Federal da Paraíba (PPGENF-UFPB).

Regarding geographic distribution, most of the studies were concentrated in the universities of Northeast Brazil[9-11,13,16-17,20,22-25,28-29,35-36,38-42] (57.14%). The remainder was distributed between the Southeast[14-15,18-19,27,30-31,34,37] (25.71%); Center-West[12] (2.86%) and South[26] of the country (2.86%) (Figure 2). There were also studies that were not linked to post-graduate programs and other international studies (11.43%).




Legend: *Universidade Estadual do Ceará (UECE); Universidade Federal do Rio Grande do Norte (UFRN); Universidade Federal da Paraíba (UFPB); Universidade Federal de Sergipe (UFS); Universidade de Brasília (UnB); Universidade Federal do Espírito Santo (UFES); Universidade de São Paulo (USP); Universidade Federal Fluminense (UFF); Pontifícia Universidade Católica do Paraná (PUC Paraná).*

Figure 2 – Geographic scope of the construction of ICNP® terminological subsets – Rio de Janeiro, RJ, Brazil, 2017.

Some publications had links between them[9-11,17,20,22,31,34,42] (either because the articles were derived from studies developed in postgraduate programs[9-20,31,34], or because the studies were divided into two parts[10-11,17,22,42]). Those divided into two parts began in the master's degree by raising the terms relevant to the practice of providing care to a particular clientele and constructing the concepts. These studies were completed at the doctoral level from validating the nursing diagnoses and interventions bank and subset structuring. Regarding the validation process, it was identified that some studies did not mention it[9-12,14-15,17,19-21,26-27,29,32,36,39].

There were studies that used the validation of the constructed concepts using the concordance index (CI)[10,13,17-19,21,24-27], content validation index (CVI)[11-12,22] or validation by consensus[9,14,23]. Three studies that presented the use of CI and CVI in the same study at different times were also identified[15-16,20]. Clinical validation was only mentioned by three studies[22,41,42] and was conducted from clinical case studies.

Studies which used the CI considered the concepts valid with variation in agreement of ≥75%[24] to 100%[18-19]. Those which used the CVI judged the concepts as valid with a score of ≥0.5 to ≥0.8. The investigations that used CI and CVI in different stages[15-16,20] used a minimum CI ≥ 80% and a minimum CVI of ≥ 0.6 as the score. The professionals who participated in the validation processes had expertise in the thematic area of the study and/or in ICNP®. The specialists filled out forms with Likert-type scales and presented their degree of agreement on the content validity of the diagnoses/results and constructed interventions. The minimum number of professionals used for this validation also varied greatly, from five[23] to 51[30] nurses.

## DISCUSSION

The content was organized into four thematic categories to facilitate understanding of the analyzed publications after reading and critical analysis, as presented below.

### Association between publications and postgraduate programs

The concentration of studies related to the development of ICNP terminology subsets in the Northeast region is most likely due to the location of the ICNP Research and Development Center in Brazil being located in the city of João Pessoa, Paraíba, and linked to the PPGENF/UFPB. The proposal for creating the Center was sent to the International Council of Nurses (ICN) in 2007. The proposal was approved by a Center accredited by the ICN[44] in July of this year. There are currently 15 ICNP® Centers accredited by ICN worldwide: three located in North America, two in South America, six in Europe, three in Asia, and one in Oceania[6].

In Brazil, this center is responsible for advancing much research in this area and supports, even at a distance, researchers from different parts of the country, as well as being accessible to the participation and cooperation of people or groups interested in building systems for recording practice elements using ICNP® and making this classification a useful technological tool for Nursing practice at the site of care[44]. In addition, one of the directors of the ICNP® center is responsible for translating this terminology, which further strengthens the concentration of studies in the region where the center is located.

In this sense, the importance of postgraduate programs for developing research, especially in the health area is clear, since despite methodologies or tools for producing solutions through the research are not always in the field of knowledge and scientific and technological practice concepts, it is through the available knowledge that the updated information can be offered for decision-making[45].

Unfortunately, after a rare cycle of continuous funding for research and postgraduate studies in various Brazilian states between 2007 and 2014, a new phase with leaner resources was installed. After the economic crisis of 2015, there was a cut in funding for research grants and scholarships in virtually all federal and state research promotion agencies, making it difficult to produce and filter knowledge[46].

This production of knowledge and the return of research results to society are paramount for promoting, protecting and recovering health. A subset built for patients with cancer pain developed in the postgraduate program of the UFPB was initially defended in 2009 (for the master's degree), and publication of its clinical validation result only occurred in the year 2017, with the defense of the doctoral thesis[10-11,42]. This fact demonstrates that a study started in a postgraduate program can take years to complete. Research incentives are paramount for their completion, and their outcomes should directly impact the quality of care.

This example fits into the classification of publications which were associated with each other, since it was part of studies subdivided into two phases. Such a strategy becomes appropriate, since the path for constructing the subsets is long, and its elaboration can be fractioned into parts to facilitate the process. Dedication to construct a subset is then lighter with the support of postgraduate programs.

The developed work is so complex that scientific articles published in the literature derived from studies which constructed nursing diagnoses, results and interventions often fail to present the complete content of their construction in a single publication, and also only present part of the original study that was developed. The essential content, which would be the group of constructed concepts (nursing diagnoses and interventions), most commonly appears in full in theses and dissertations.

### Clientele and/or health priority for which the subsets are designed

The client is defined as the subject to whom the concepts of diagnosis/results and nursing interventions are designed, and individuals, families and communities can be included. Health priority is understood as the health conditions, environments or specialization of Nursing clinical care[4].

In this sense, the clientele and/or health priority contemplated by the constructed subsets were oncological patients[10,18-19,28,31,34,42], older adults[11,17,22,25,29,40] and children/adolescents[27,30,35-36], who appeared more than once in the analyzed publications, reinforcing the idea that they are part of a singular scenario and require specific diagnosis/results and nursing interventions for each situation.

Research involving these clients should be prioritized according to the National Agenda for Research Priorities, which is defined as a management tool by which the Ministry of Health details research priorities. There are sub-agendas involving various disciplinary fields that include priority research topics[45].

There are 24 sub-agendas constituent of the National Agenda for Priorities in Health Research, published in 2015, among which the following themes are highlighted: Older Adult Health, Non-communicable Diseases, and Child and Adolescent Health. Regarding older adult health, aspects related to the magnitude, dynamics and understanding of health problems and the mechanisms of diseases associated with the aging process are considered, as well as evaluation of policies, programs, services and technologies. In the range of non-communicable diseases, neoplasias gain notoriety in relation to factors associated with morbidity and mortality, quality of life, primary prevention programs, care for patients in palliative care, among others[45].

Regarding the clientele of children and adolescents, there should be great interest in research involving the perinatal period and the first year of life, childhood and adolescence, with some highlights such as the development and evaluation of prevention strategies and rehabilitation of children with disabilities, prevention of risk factors in adolescence and promotion of health at school, home and community[45].

Specifically in childhood, mortality rates in Brazil were still high in 2015 despite a consistent reduction, associated with preventable causes related to healthcare during pregnancy, childbirth and birth, and require specific intersectoral and public health policies which should be continued and improved in order to reduce mortality[47]. The inclusion of this clientele of children as a research priority can generate

new knowledge and contribute with positive results to reduce these rates.

Nursing must be inserted and directly aligned with health policies in general. Thinking about nursing research priorities means pointing out the focus of interest and investments on which the research groups should establish consensus, seeking excellence in care[48]. It should be pointed out that the developed subgroups meet health research priorities. The authors were able to highlight the importance of their studies for this clientele in their publications, which, based on scientific evidence built together, obtained subsidies to elaborate effective nursing interventions for care, which is essential for making decisions and for consistent documentation of nursing practice[34].

### Theoretical model to subsidize construction of subsets

The choice of a theoretical model to anchor the subset elaboration has a fundamental role for its application, since this model supports the justification of the study relevance to nursing knowledge, and when applied to practice may guide changes in the care model. Although it is not mandatory, the subset can enhance a care practice based on the specific knowledge of the profession when this theoretical model is constructed from nursing theories[5]. Therefore, the theoretical model for the subset should be developed from a theoretical framework. Without adopting a complex structure or theoretical model, the risks of not apprehending the magnitude of the phenomenon are lost, being able to produce compartmentalized practices[49].

In Brazil, a model of the nursing process based on the Theory of Basic Human Needs was developed in the 1970s, which became known and used by many institutions, thereby contributing to a less intuitive and more scientific practice[50]. This theory is based on psychobiological, psychosocial and psycho-spiritual needs, proposing a methodology for the nursing process focused on the integral human being and a search for bio-psycho-socio-spiritual balance[51], and for this reason it was presented as an organization form of diagnoses/results and Nursing interventions in 15[13-16,18,24-26,31,34-36,38,39,41] of the 35 analyzed publications. These studies cataloged the constructed diagnoses and allocated them within each affected basic human need that represented them. Interventions were then constructed for each diagnosis shortly afterwards, revealing a therapeutic plan of specific care for the identified clientele.

The Theory of Basic Human Needs was also used in association with other models within the same study[13,35]. In the ICNP® terminology subset for infants with cow milk protein allergy[35], the theory added to concepts elaborated by other researchers was used to subsidize the study[36] from an adequacy in the number, in the titles and in the form and/or content of the definitions of human needs. In the ICNP® terminology subset for hypertensive patients in basic care[13], the chronic care model was added to the Basic Human Needs Theory, since in addition to the theory it was also necessary to approach the health professional and the hypertensive client, thus enabling a positive result in attending their health needs.

Other theories and models were also used, such as the pathophysiological model of CHF[9,20] and the theoretical model for nursing care in oncological pain[10,42]. The first model specifically applies to ICN clients by classifying the main signs and symptoms according to the relevant clinical data of the disease – edema, tachycardia, dyspnea and congestion[20]. The oncology pain model was developed based on empirical indicators, identified in the study's literature review, and was the foundation for constructing and organizing nursing diagnoses/outcomes and interventions[10,42]. This model was associated with the Theory of Comfort for continuing the theme in a doctoral thesis, in which the author presents the idea that comfort is a broader term in comparison to pain, presenting elements of physical, spiritual, socio-cultural, environmental and psychological origin[42].

The Activities of Living model presented in the terminological subset for older adults appears in three interrelated publications, which refer to the same basic study started in the master's degree and finished in the doctorate. This theory is characterized by considering individuals as being able to perform some basic activities, such as: maintaining a safe environment, breathing, eating, eliminating, communicating, personal hygiene and dressing, controlling body temperature, working and having fun, expressing sexuality, sleep and death[11].

The Theory of Becoming Human emerges in the subset focused on ecological and occupational care and proposes a model of change and health attitudes based on interrelating the individual with reality in searching for quality of life standards adequate to the perceptions of environmental and occupational risk. With this theory, the nurse seeks to understand nursing problems in the process of being with the person, and not doing for the person[15].

The Theory of the Support System-Education was chosen in two studies, and its use is justified considering that nursing is required by the adult from the absence of its ability to continuously maintain the quantity and quality of self-care, associated with the performance of measures which directly interfere in the genesis of the disease or coping with its effects[19,40].

In the study developed for trauma victims during prehospital care, the Physiological Mode of the Model of Adaptation[21] was used as a reference, which is integrated into the study, since the individual is a system capable of adapting to receive nursing care. The human person is a holistic system of adaptation; in turn, the environment is seen as a factor which influences or permeates the development and behavior of the adaptive human system[52].

Two of the studies[23,29] originated from the same postgraduate program (from the Universidade Estadual do Ceará) and in having older adults as an attended clientele opted to use a theory in which nursing care based on its own technologies should be grounded on Fundamental Human Needs, enabling reflective actions. The use of this theory is justified by its outstanding applicability in care for older

adults, in which the professional can base their thorough practice on the knowledge of peculiar alterations of aging, performing activities which are favorable to the health and recovery of older adults. This theory considers the human being as a single and complex subject, making it possible to approach older adults from an individual and comprehensive perspective[29].

One of the studies carried out with children as the clientele[30] used different references for constructing the nursing diagnoses/results and interventions (human development references and the essential needs of childhood reference)[53]. In this proposal, development occurs through the constant, active and bilateral interaction between the child and the immediate environment. In this sense, children have inseparable basic, social and emotional needs, and these needs negatively influence their development when not contemplated in a timely manner, significantly changing their life as adults[30].

Another model used and identified in one of the selected publications[28] was the The Dignity-Conserving Care Model, which considers three major areas of influence on individual perceptions about dignity: concerns related to the disease, involving situations directly resulting from the disease; the repertoire of preservation of dignity, represented by influences related to the psychological and spiritual resources of the patient; and the social dignity inventory, which includes environmental influences which may affect dignity.

The Theory of Practical Intervention of Collective Health Nursing (*TIPESC – Teoria da Intervenção Práxica da Enfermagem em Saúde Coletiva*) was chosen as the theory and method for constructing the ICNP® terminological subset for children and adolescents vulnerable to domestic violence[27]. The choice was made due to the development process of Nursing interventions, which should occur through a dynamic methodology in accordance with the understanding of historical and dialectical materialism, considering the constant kinesics of history and social transformations[54].

The competency model for professional rehabilitation nursing proposed by the Association of Rehabilitation Nurses appeared in the ICNP® terminology subset for patients with Parkinson's disease in rehabilitation. The model is adapted to the study since it provides essential skills present in domains which include leadership, interprofessional care, nurse-led interventions and promotion of a successful life, in addition to being able to guide nurses worldwide for the clinical practice of rehabilitation[55].

After this general analysis, it was noticed that the adopted theoretical references sought to adjust to the clienteles being served, as well as the institution's philosophy to which the study was linked; in addition, they needed to provide the best structure to organize the nursing diagnoses/results and interventions from the authors' perspective. For associating and complementing models and references, this compilation enabled adjusting the studies in order to meet their objectives and promote a result applied to practice, facilitating the construction of a tool for systematizing care.

The theoretical model choice was essential to support the subset development and is in agreement with what is proposed by the ICNP® Brazil Center and the model proposed by Brazilian researchers for constructing ICNP® terminological subsets[5]. It is this referential that will guide the data collection, and consequently the nurse's clinical judgment for elaborating nursing diagnoses/results and interventions, highlighting the importance of an adequate choice[56].

Therefore, in order for a set of nursing diagnoses/outcomes and interventions to be supported, it is essential to choose an appropriate theoretical framework, which must be presented in academic and scientific publications since these will be the basis for constructing the theoretical model of the subsets.

## Validation process of constructed concepts

All the methodologies described for constructing the ICNP® terminological subsets provide for the validation stage of the constructed concepts, highlighting a unique importance for this phase in which a group of experts will express their degree of agreement in relation to the construction of the diagnoses/results of nursing[5]. In this sense, this step becomes mandatory when it comes to developing a subset.

In fact, there is a lack of specification in the steps taken to construct ICNP® catalogs, making it difficult to reproduce the methods by different researchers[4]. In particular, the validation step was not presented in a large part of the studies, constituting a fragility in the researches.

The validation stage is essential and must be thorough, involving an adequate search by specialists who should be willing to participate in the process, which in itself is time-consuming and requires their quality time[5]. In addition to the specialists participation, this process requires resources and the methodology of this validation is at the discretion of the researcher, and there is no determination by the ICN on any specific methodology being compulsory[4]. Therefore, it is discussed that other strategies must be incorporated to overcome this limit, among them the validation process by consensus among experts[5].

Validation did not occur initially (master's dissertation) in some studies, but a consistent validation step was presented in continuity (doctoral thesis). In other studies, the validation process was not in the objectives. Validation facilitates the classifications` refinement and improvement, which favors critical thinking and strengthens decision-making by the nurse, as well as improving communication and Nursing registration in standardized language[57].

The most used indexes in the validation process were CI and CVI. The first index is a simple measure of interobserver agreement used to calculate the agreement percentage between the judges (agreement % = number of participants who fully agreed with the item/total number of participants x 100). This rate is interpreted considering that a result greater than or equal to 90% agreement means adequacy of domains. When the result is less than 90%, the domain needs to be discussed and changed[58]. It was noticed in the

review that some studies did not use this index of 90%, which can make the whole process vulnerable.

Regarding the CVI, it is used to measure the proportion or percentage of judges who agree on certain aspects of the instrument and its items. The index is calculated using a Likert scale of 4 ordinal points. The judges may choose the following answers in order to evaluate the relevance/representativeness of the item: 1 = not relevant or not representative; 2 = item needs a major revision to be representative; 3 = item needs a small revision to be representative; or 4 = relevant or representative item[58].

Items that score "1" or "2" should be reviewed or deleted. The index is calculated from the sum of the "3" and "4" answers of each judge in each item. This sum is then divided by the total number of responses. The acceptable agreement rate for evaluating the individual items should be higher than 0.78, and when it is validating a new instrument it should have a minimum agreement of 0.80[58]. Among the evaluated studies, one presented the concepts with minimum CVI ≥ 0.5 as valid.

The minimum number of professionals used for this validation varied widely: from five[23] to 51[30] nurses. The content evaluation must be carried out by a number of five to 10 expert judges in the area of the measuring instrument[58]. Researchers encounter difficulties to validate ICNP® nursing diagnoses/outcomes, such as the limited willingness of specialists to contribute to the study because of the many commitments they are involved with. Thus, the authors carry out their studies with a much lower number of specialists than what is recommended[30]. It is noticed that the authors managed good conduct in the studies in relation to the quantity of specialists, even with the difficulties.

The specialists must possess at least an academic master's degree. In addition, they should use terminologies of nursing diagnoses (preferably ICNP®) and directly or indirectly dedicate themselves to the health priority that is being researched, be it in care, education or research[4].

In addition to the experts' validation, it is important to highlight that the ICN considers validating the ICNP® catalog statements with the specified client population as one of the important steps in the subset elaboration process[3]. Clinical validation is a decisive step to analyze the effectiveness and operationality of this tool in Nursing practice, and can be performed from clinical case studies[4].

The larger purpose of the subset is to apply it in practice. In this sense, this clinical validation step becomes essential to consolidate the terminology among the nurses who work directly in the care, bringing the knowledge generated in academia closer to nurses' clinical practice.

## CONCLUSION

The present study provided an overview of the terminological subsets of ICNP® available in the literature, emphasizing the association between publications and postgraduate programs, the clientele and/or health priority for which the subsets are designed, the theoretical model to support the construction of the subsets and the validation process of the constructed concepts.

It is important to note the importance of postgraduate programs in encouraging the development of these subsets in line with the recommendations of the International Council of Nurses, enhancing the use of ICNP® and contributing to a systematic and safe practice. In this scenario, the PPGENF of the UFPB stands out, where the ICNP® Brasil Center accredited by the ICN is located.

Health clientele must be on the agenda of research priorities, strengthening them. The subsets found tended to the care of oncological, older adult and child/adolescent patients, who present themselves as populations who should be prioritized. For the theoretical model, the great majority of the studies presented a model in agreement with the institutional philosophy and the health clientele. The validation process is essential to give robustness to the subset, but it was not described in many of the publications found, which weakens the study and may hinder generalizing the results and its application to different scenarios. The lack of validation appears as the main gap found in the studies, preventing the subset from reflecting exactly what it proposes.

The construction of a catalog, regardless of the clientele for which it is intended, can bring significant contributions to care practice, and therefore this development should be based on a timely methodology grounded on a suitable theoretical model and validated so that it can function as a potential tool to respond to the challenges of Nursing care.


## RESUMO

**Objetivo:** Caracterizar a produção científica disponível na literatura sobre a construção de subconjuntos terminológicos da CIPE® com ênfase na clientela e/ou prioridade de saúde a quem se destinam os subconjuntos, o referencial teórico utilizado e o processo de validação dos enunciados construídos. **Método:** Revisão integrativa da literatura com abordagem bibliométrica de publicações entre 2008 e 2017. **Resultados:** Foram incluídas para análise 35 publicações. A maioria dos estudos estava vinculada a programas de pós-graduação de universidades do Nordeste brasileiro. Quanto à clientela atendida, houve uma tendência para o cuidado do paciente oncológico, do idoso e da criança/adolescente. Quanto ao referencial teórico para a construção do subconjunto, houve uma tendência para o uso do modelo das Necessidades Humanas Básicas. O processo de validação não foi descrito em todos os estudos. **Conclusão:** Reforça-se a importância da construção de subconjuntos terminológicos da CIPE®, voltados às clientelas prioritárias de saúde, para potencializar o uso dessa terminologia. O percurso metodológico deve ser pautado nas metodologias específicas, e o processo de construção deve ser paralelo ao de validação.



## DESCRITORES

Cuidados de Enfermagem; Classificação; Terminologia Padronizada em Enfermagem; Diagnóstico de Enfermagem; Revisão.

## RESUMEN

**Objetivo:** Caracterizar la producción científica disponible en la literatura acerca de la construcción de subconjuntos terminológicos de la CIPE® con énfasis en la clientela y/o prioridad sanitaria a que se destinan los subconjuntos, el marco de referencia teórico utilizado y el proceso de validación de los enunciados construidos. **Método:** Revisión integrativa de la literatura con abordaje bibliométrico de publicaciones entre 2008 y 2017. **Resultados:** Fueron incluidas para análisis 35 publicaciones. La mayoría de los estudios estaba vinculada a programas de posgrado de universidades del Nordeste brasileño. En cuanto a la clientela atendida, hubo una tendencia hacia el cuidado del paciente oncológico, la persona mayor y el niño/adolescente. En cuanto al marco de referencia para la construcción del subconjunto, hubo una tendencia hacia el empleo del modelo de las Necesidades Humanas Básicas. El proceso de validación no fue descrito en todos los estudios. **Conclusión:** Se refuerza la importancia de la construcción de subconjuntos terminológicos de la CIPE®, dirigidos a las clientelas prioritarias de salud, a fin de potenciar el uso de esa terminología. El recorrido metodológico debe pautarse en las metodologías específicas, y el proceso de construcción debe ser paralelo al de validación.



## DESCRIPTORES

Atención de Enfermería; Clasificación; Terminología Normalizada de Enfermería; Diagnóstico de Enfermería; Revisión.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