NURSING DIAGNOSES FOR PEOPLE WITH HEART FAILURE: CROSS MAPPING
DIAGNÓSTICOS DE ENFERMAGEM PARA PESSOAS COM INSUFICIÊNCIA CARDÍACA: MAPEAMENTO CRUZADO

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ABSTRACT
Objective: to map the listed Nursing diagnoses for people with chronic heart failure by means of two Nursing classification systems. Method: a descriptive qualitative study, using the cross-mapping technique in 67 listed Nursing diagnoses, throughout the steps: 1) mapping of the listed diagnoses of the ICNP® 1.0 with the concepts of NANDA-I diagnoses, Inc. and the ICNP®, version 2017 and 2) classification of listed diagnoses mapped according to the basic human needs. Data were analyzed through simple statistical and presented in tables. Results: in the first step, 46 (68.7%) and 41 (61.2%) items of the list were not present in NANDA-I Inc. and in the ICNP®, respectively. In the second stage, 92.5% of the items were classified in the psychobiological needs and 7.5%, in the psychosocial needs, with no item classified in psychospiritual needs. Conclusion: the listed diagnoses could be mapped for people with chronic heart failure, as well as their identification in the NANDA-I, Inc. and ICNP® classification systems, and their categorization based on basic human needs. These factors show the need for further studies that address the needs of the specific population of this research. Descriptors: Nursing; Cardiovascular Nursing; Nursing Process; Nursing Diagnosis; Standardized Nursing Terminology; Heart Failure.

RESUMEN
Objetivo: mapear los enunciados diagnósticos de Enfermería para personas con insuficiencia cardiaca crónica por medio de dos sistemas de clasificación en Enfermería. Méto**: estudio descriptivo, que se utilizó a técnica de mapeado cruzado en 67 enunciados diagnósticos de Enfermería, percorrendo as etapas: 1) mapeamento dos enunciados diagnósticos da CIPE® 1.0 com os conceitos diagnósticos da NANDA-I, Inc. e da CIPE®, versión 2017 y 2) clasificación de los enunciados diagnósticos mapeados de acuerdo con las necesidades humanas básicas. Analisaram-se os dados pela estatística simples apresentando-os em tabelas. Resultados: evidenciou-se, na primeira etapa, que 46 (68.7%) y 41 (61.2%) dos enunciados não constavam da NANDA-I Inc. ou na CIPE®, respectivamente. Classificaram-se, na segunda etapa, 92,5% dos enunciados nas necessidades psicobiológicas e 7,5%, nas psicossociais, no habendo enunciados clasificados nas necesidades psicoespirituales. Conclusión: posibilitou-se a o mapeamento dos enunciados diagnósticos para personas con insuficiencia cardiaca crónica e identificação desses nos sistemas de clasificación NANDA-I, Inc. e CIPE®, bem como sua categorização com base nas necesidades humanas básicas. Tais factores impactam a necesidade de estudios posteriores que tratem das necesidades da população específica da pesquisa. Descriptores: Enfermeria; Enfermeria Cardiovascular; Proceso de Enfermeria; Diagnostico de Enfermeria; Terminologia Padronizada en Enfermeria; Insuficiencia Cardiaca.
Nursing diagnoses for people with heart failure are directly related to the quality of care. The cross mapping, a strategy that enables the comparison between the language used in the routine of health services and the standardized classification systems, is a methodological process used in nursing studies aiming to decide on the semantic equivalence of such language, especially with Nursing diagnoses, for use in the professional practice.

The cross mapping technique consists of one of the steps used by Nursing researchers for the construction of subsets of diagnoses, results and Nursing interventions in different areas of care, in addition to a strategy that facilitates this learning and teaching path for the nurse’s process of clinical thinking. It allows, therefore, mapping the records of Nursing care that do not use a standardized language, identifying gaps of knowledge and demonstrating the usefulness of these languages to Nursing care, in order to incorporate the nomenclature for the Brazilian reality.

In Nursing literature, studies with this design stand out, directed to the varied health priorities, with Nursing diagnoses in outpatient care to the patient with wound, Nursing diagnoses in intensive care and Nursing diagnoses on the functional capacity of patients with Parkinson's disease, which shows a gap in knowledge regarding the chronic heart failure.

Chronic heart failure is a clinical syndrome in which the heart does not have the capacity to meet the tissue circulatory needs of the organism. A previous study contemplated this health priority, which built listed Nursing diagnoses based on the pathophysiological model of the affection and the International Classification for Nursing Practice (ICNP™), version 1.0. Thus, there is need for the assessment of these items from the mapping with the Nursing classification systems and current versions.

While health clinical situation, chronic heart failure requires the adoption of a theoretical reference/model specific for Nursing, for a better organization of directed Nursing care, electing, in this study, the theoretical framework of basic human needs, which is the most known and used in Brazil, with wider use in studies of this design, which gives a scientific character based on evidence to the organization of findings.

The development of research studies that propose a thorough assessment of Nursing diagnoses through standardization of Nursing language represents a unique contribution to improve classification systems and promote the consolidation of Nursing as a science, with advances in health care, in the representation of the professional practice throughout the world, based on data for use in care, management/administration, education and research, in the communication between professionals and documentation of the practice.

**OBJECTIVE**

- To map listed Nursing diagnoses for people with chronic heart failure by means of two Nursing classification systems.
- To categorize the listed Nursing diagnoses in accordance with the theoretical framework of basic human needs.

**METHOD**

This is a descriptive qualitative study, which used the cross-mapping technique, characterized by a methodological process whose purpose is to identify the characteristics of the Nursing process as components of professional records used in Nursing care and deliberate on the linguistic and semantic equivalence of standardized Nursing languages through comparison. This type of technique allows developing studies that demonstrate that the existing Nursing data, in different locations, can be compared to the different Nursing classifications and, thus, adapted to the standardized language.

Sixty-seven listed nursing diagnoses for people with chronic heart failure were mapped, built on a study based on the pathophysiological model of the disease and the ICNP™, version 1.0, with the concepts of NANDA-I diagnoses, Inc. and the ICNP™ 2017, in addition to classifying nursing diagnoses based on the theoretical framework of basic human needs.

The steps were: 1) Mapping of the listed diagnoses of the ICNP™ 1.0 with the concepts of NANDA-I diagnoses, Inc. 2018-2020 and ICNP™, version 2017 and 2) classification of listed diagnoses mapped according to the basic human needs.

In the first stage, three spreadsheets were built in Excel for Windows: the first, with the listed diagnoses of the ICNP™ 1.0 built; the second, with the concepts of NANDA-I diagnoses, Inc.; and the third, with the diagnostic concepts of the ICNP™ 2017. The first spreadsheet was then crossed with the others, by means of the Access Program for Windows, for the identification of diagnoses listed and not listed in the current versions of the NANDA-I, Inc. and the ICNP™.

A similarity and range analysis was carried out from the listed diagnoses considered mapped, where equal and similar items were classified as present and more comprehensive, more restricted and without agreement, as not listed in relation to the concepts of classifications selected for mapping. This analysis used a reference that
guides this process,16 in which the item is considered similar when there is no concordance of spelling, but its meaning is identical; more comprehensive, when its meaning is greater than the term present in the taxonomy, and more restricted, when its meaning is lower than that existing in the taxonomy, with no concordance when totally different from the existing term in the taxonomy, i.e., a new listed diagnosis.

In the second step, the nursing diagnoses mapped were organized in Excel for Windows™, distributing them according to the levels of the psychobiological, psychosocial and psychospiritual needs proposed in the theoretical reference13 to which they were adequate and updated, based on investigations.17 Data were organized in tables according to the implementation of the steps described in the present study, analyzing them as absolute and relative frequencies and discussing them based on national and international literature related to the study object.

This study did not require the analysis of the Research Ethics Committee, but obeyed the precepts of Resolution 466/2012 of the National Council of Ethics in Research involving Human Beings (CONEP) and of Resolution 196/96 of the Brazilian National Health Council, even though there was no direct participation of human beings.

**RESULTS**

As the first step, initially, the cross mapping was carried out with the NANDA-I, Inc., with 21 (31.3%) present listed diagnoses (equal or similar) and 46 (68.7%) not present (more comprehensive, more restricted or without agreement). The mapping with the ICNP™ 2017 allowed categorizing 26 (38.8%) listed diagnoses as present (equal or similar) and 41 (61.2%) as not present (more comprehensive, more restricted or without agreement).

In relation to the total number of present items (equal and similar), in each classification system, 53.4% are equal in relation to the NANDA-I, Inc. and 50% to the ICNP™ 2017, as described in table 1.

<table>
<thead>
<tr>
<th>Classification</th>
<th>NANDA-I, Inc.</th>
<th>Listed Nursing Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal</td>
<td>11 (53.4)</td>
<td>Anxiety; Impaired swallowing; Decreased cardiac output; Fatigue; Impaired skin integrity; Activity intolerance; Impaired bed mobility; Nausea; Impaired gas exchange; Excessive fluid volume; Poor volume of liquids.</td>
</tr>
<tr>
<td>Similar</td>
<td>10 (46.6)</td>
<td>Impaired ability to get dressed; Impaired ability to bathe; Impaired hygiene; Impaired airway clearance; Non adherence to the therapeutic regimen; Impaired respiratory pattern; Water retention; Impaired respiratory rhythm; Impaired respiratory system; Impaired ventilation.</td>
</tr>
<tr>
<td>ICNP™ 2017</td>
<td></td>
<td>Anxiety; Impaired psychomotor activity; Impaired ability to get dressed; Impaired ability to get ready; Dyspnea; Functional dyspnea; Exhaustion of treatment; Fatigue; Lack of response to treatment; Impaired skin integrity; Dry skin; Impaired sleep (difficulty sleeping); Impaired gas exchange.</td>
</tr>
</tbody>
</table>

F: Absolute frequency; %: Relative frequency.

Regarding the listed diagnosis not present in the ICNP™ 2017, 43.9% were classified as more restricted, while in NANDA-I, Inc., the terms classified as without agreement prevailed (65.2%) (Table 2).

<table>
<thead>
<tr>
<th>Classification</th>
<th>NANDA-I, Inc.</th>
<th>Listed Nursing Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>More</td>
<td>6 (13.1)</td>
<td>Imbalance of liquids and electrolytes; Lack of knowledge about volume of liquids; Impaired physical activity pattern; Altered cardiac tissue perfusion; Impaired urinary system process; Impaired sleep (difficulty sleeping).</td>
</tr>
<tr>
<td>More restricted</td>
<td>10 (21.7)</td>
<td>Ascites; Conflicting attitude towards physical activity; Chest discomfort; Edema; Lack of capacity to manage the physical activity regime; Dry skin; Decreased blood pressure; High blood pressure; Sleep deprivation; Impaired heart rate.</td>
</tr>
<tr>
<td>Without agreement</td>
<td>30 (65.2)</td>
<td>Metabolic acidosis due to electrolyte alterations; Metabolic acidosis due to fluid and electrolyte changes; Respiratory acidosis; Adherence to physical activity regimen; Adherence to the volume of liquids; Arrhythmia; Impaired psychomotor activity; Impaired self-performance; Impaired ability to get dressed; Vasogenic shock; Knowledge about physical activity; Cardiogenic shock; Impaired ability to transfer; Increased cardiac output; Deficit of knowledge about the arrhythmia; Deficit of knowledge about the response to medication; Deficit of knowledge about physical activity; Dyspnea; Functional dyspnea; Dyspnea of rest; Exhaustion of treatment; Lack of response to treatment; Altered heart rate; Altered respiratory rate; Hypoxia due to congestion; Unsatisfactory response to medication; Dizziness; Productive cough; Dry cough.</td>
</tr>
</tbody>
</table>

Table 1. Listed Nursing diagnosis classified as present (equal and similar) mapped with NANDA-I, Inc. and ICNP™ 2017. Crato (CE), Brazil, 2018.

Table 2. Listed Nursing diagnosis classified as not present in NANDA-I, Inc. or ICNP™ 2017. Crato (CE), Brazil, 2018.
ICNP™ 2017

More comprehensive 6 (14.6)

More restricted 18 (43.9)

Without agreement 17 (41.5)

F: Absolute frequency; %: Relative frequency.

Among psychobiological needs, levels of oxygenation, physical activity and vascular regulation stood out numerically. There were no listed Nursing diagnoses related to psychospiritual needs.

DISCUSSION

The Nursing classification systems seek to guide and facilitate the understanding of the Nursing process, by means of standardized languages for the profession, acting in the development of clinical reasoning, and, consequently, in decision-making in professional practice and teaching of new elements of Nursing practice contained in the systems of standardized languages, such as NANDA-I, Inc., Nursing Outcomes Classification (NOC), the Nursing Interventions Classification (NIC) and the ICNP™.
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NANDA-I Inc., NOC and NIC are interrelated and interdependent aspects of the Nursing process, so that the first one facilitates the clinical judgment by grouping individuals’ responses as real and/or potential problems, in which possible and expected results are determined for the patient based on NOC and with purposes for the selection of interventions proposed by NIC to achieve these results.

ICNP™ is a classification system developed by the International Council of Nurses (ICN) with the purpose of standardizing and establishing a common language that supports the practice for both diagnosis as Nursing outcomes and interventions, composed by seven axes, with terms that allow constructing listed diagnosis, results and nursing interventions. Therefore, these items can be identified according to the reality of each environment and health need, in accordance with the contexts surrounding them.

Studies related to the comparison of the Nursing language are developed in order to standardize it, in the scientific realm of Nursing, by means of cross-mapping technique, which allows researchers to make the correspondence between the aspects of the Nursing process exclusive of the nurse, such as diagnoses, results and/or Nursing interventions developed and contained in the Nursing classification systems, as well as in official documents, such as records. The merit of the cross-mapping technique is the characterization as a didactic material to verify the relevance of the decisions taken from the clinical reasoning of the nurse.

Using the cross mapping is essential to show the usefulness of standardized language in Nursing care and to identify possible gaps in clinical practice, in addition to acting in the teaching of the use of standardized systems of languages to Nursing professionals.

The language standardization allows, through studies such as this one, a better provision of Nursing care, with the representation of the professional practice throughout the world based on data for use in care, better communication between the professionals and the documentation of the practice.

In the previous study, whose results were used in this one, the authors raised listed Nursing diagnoses based on the pathophysiological model of heart failure and on the ICNP™, highlighting the essential aspect of analysis by means of cross mapping, in order to verify the convergence with the Nursing classification systems and, thus, achieve the proof of the usefulness for the Nursing clinical practice in the health situation in question.

Regarding the listed diagnoses assessed as equal in both classification systems “Anxiety” and “Impaired skin integrity”, a study evidenced them, which reported the Nursing diagnosis of the NANDA-I, Inc. for people with decompensated heart failure.

A review study, which identified the knowledge produced about Nursing diagnoses of ICNP™ and NANDA-I, Inc. in hospitalized patients with heart failure, highlighted the diagnosis “Impaired gas exchange” as one of the most prevalent in studies, and the diagnosis “Fatigue” stood out in a study whose objective was to identify the presence of this finding in hospitalized patients with heart failure, based on NANDA-I, Inc.

In relation to the listed diagnoses classified as not present in both classification systems used in the study, there is predominance of not present in relation to NANDA-I, Inc., a result that may be related to the fact that this classification system has a smaller number of concepts of Nursing diagnoses, if compared to ICNP™, once NANDA-I, Inc. features 244 diagnostic concepts and ICNP™ 2017, 852 pre-coordinated concepts. Moreover, NANDA-I, Inc. works with the inclusion and exclusion of concepts of Nursing diagnoses, in accordance with the degree of evidence in the literature, which can directly affect this study, as well as the Nursing language itself.

Some items were classified as present in the two classification systems. There were aspects associated with weaknesses related to Nursing language, evidenced by absent human responses in classification systems of reference for the Nursing work.

In this sense, studies corroborate the idea of the importance of standardizing the Nursing language, in order to minimize the ambiguities and redundancies and standardize the practical use, making it universal.

Based on the findings of this study, the high frequency of listed diagnoses classified as psychobiological needs stands out. This fact relates to the construction process of the items based on pathophysiological model of heart failure, which provides a biomedical character to the items, with a focus on the pathophysiological aspects of the disease in question, in which the areas of study common to the various formations in the health area do not confer a singularity of Nursing.

With emphasis on psychospiritual needs, since there was no item classified according to their levels, the importance of linking diagnoses for people with chronic heart failure to this category stands out, who demand psychospiritual care, which should not be left aside, because they contribute to the quality of care and the user’s prognosis.

Other studies were not able to contemplate the psychospiritual needs, which demonstrates the fragmentation of the integral Nursing care regarding the prerogative that, when there is an
imbalance in one of the needs, consequently, there is an imbalance in the other.¹¹

These results converge to the need for the improvement and extension of these diagnoses, in order to understand the other needs and their levels in equal proportion and comprehensiveness of Nursing care to people with heart failure, while identifying a gap in knowledge, because these are relevant and significant factors in this context.

Nursing theories/theoretical models/references emphasize that its integral care is crucial to Nursing clinical practice, to investigate and act on all aspects of the individual from the human responses, in order to propose actions that can act beneficially in actual or potential problems and to strengthen individuals’ well-being and quality of life,²⁶ overcoming the biomedical model still in force.

From the theoretical referential of Horta,¹³ which underlies the findings, three levels of needs should be addressed in the Nursing care context, however, there are still difficulties in this context, with the resistance, and even professionals’ lack of knowledge related to the dimension of psychospirituality, even though this need is highlighted in the illness process of individuals.²⁵

The person with cardiovascular changes goes through changes that transform the dynamics of life, with direct impact on the integral demands, affecting not only the biological aspect, but also the psychospiritual one. The nurse should seek to identify any needs in these individuals, according to the priority levels of each one, and list the care directed to each of these emphases, for the well-being connected to the provision of needs, which, many times, may be in the background.²⁹

Nursing care for people with chronic heart failure must be based on a decision-making and management process of decompensated clinical pictures, in which the nurse must have a clinical, attentive and individualized eye, to perform a nursing assistance focused on critical thinking, demanding, from this professional, not only technical, but also scientific qualification, since the demand of this health priority is growing and is present in various health assistance levels.²⁰

The investigations about the responses of individuals from Nursing diagnoses, based on standardized language, aim to converge positively on the care universalization through the organization of Nursing actions. The literature can confirm this fact, by means of the reaffirmation of the findings of this study, in a promising way to the Nursing work and the composition of its own body of knowledge, directed to Nursing care for people with chronic heart failure.

Some study limitations are the methodological rigor, which was concise due to the fact of having used listed Nursing diagnoses from a previous study.

Some contributions of this study for Nursing are the insertion of the research findings while collaboration for the language standardization and the development of clinical reasoning for the decision-making process of nurses, in addition to the stimulus of readers of the study in order to reproduce and contribute with new work on the theme of the cross mapping.

**CONCLUSION**

The cross mapping allowed identifying the listed diagnoses for people with chronic heart failure present in the classifications of NANDA-I, Inc. and ICNP⁹ and categorizing them, based on the basic human needs, through the standardization of the language.

There was a significant amount of items that were not present in the classification systems used in the study, as well as the fact that few listed diagnoses contemplated the psychosocial needs and none covered the psychospiritual needs, put aside. These factors impact the need for further studies addressing the aspects directed to this research population, because there are real and/or potential needs not included in the listed diagnoses analyzed.

**REFERENCES**


Nascimento MNR, Silva MY da, Viana MCA, et al.

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