



# Specialized nursing terminology for chronic kidney patients on hemodialysis

*Terminologia especializada de enfermagem para pacientes renais crônicos em hemodiálise*

*Terminología de enfermería especializada para pacientes renales crónicos en hemodiálisis*

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## ABSTRACT

**Objectives:** to identify the terms that represent the human needs affected in chronic renal failure patients on hemodialysis; and to cross-map these terms with those already existing in the International Classification for Nursing Practice. **Method:** a descriptive study with a quantitative approach, conducted between February and December 2021, a period in which an integrative literature review was prepared to survey the terms that represent the human needs affected in chronic renal failure patients on hemodialysis; then, we proceeded to the cross-mapping of these terms identified with the ICNP® terms 2019/2020 version. **Results:** 1,946 terms were identified extracted from the articles that were part of the integrative review. After the normalization and standardization process, 689 terms were excluded, resulting in the subsequent composition of 1,257 terms, which were mapped with the terms of the International Classification for Nursing Practice 2019/2020 version. In the end, the term bank consisted of 626 constant terms and 631 non-constant terms. **Conclusion and implications for practice:** relevant terms were identified for nursing practice in the care of chronic kidney disease patients on hemodialysis. The terms will help nurses to promote a systematized care, using an evidence-based practice.

**Keywords:** Nursing; Patients; Nursing Process; Renal Replacement Therapy; Terminology.

## RESUMO

**Objetivos:** identificar os termos que representam as necessidades humanas afetadas no paciente renal crônico em hemodiálise; e realizar o mapeamento cruzado destes termos com os já existentes na Classificação Internacional para a Prática de Enfermagem. **Método:** estudo descritivo com abordagem quantitativa, realizado entre os meses de fevereiro a dezembro de 2021, período no qual foi elaborada uma revisão integrativa da literatura para levantamento dos termos que representam as necessidades humanas afetadas no paciente renal crônico em hemodiálise; em seguida, procedeu-se ao mapeamento cruzado destes termos identificados com os termos da CIPE® versão 2019/2020. **Resultados:** foram identificados 1.946 termos extraídos dos artigos que fizeram parte da revisão integrativa. Depois do processo de normalização e uniformização, foram excluídos 689 termos, resultando na subsequente composição de 1.257 termos, os quais foram mapeados com os termos da Classificação Internacional para a Prática de Enfermagem versão 2019/2020. Ao final, o banco de termos ficou constituído por 626 termos constantes e 631 termos não constantes. **Conclusão e implicação para a prática:** foram identificados os termos relevantes para a prática de enfermagem na assistência aos pacientes renais crônicos em hemodiálise. Os termos serão subsídios para auxiliar o enfermeiro na promoção de uma assistência sistematizada, utilizando-se de uma prática baseada em evidências.

**Palavras-chave:** Enfermagem; Pacientes; Processo de Enfermagem; Terapia de Substituição Renal; Terminologia.

## RESUMEN

**Objetivo:** identificar los términos que representan las necesidades humanas afectadas en pacientes con insuficiencia renal crónica en hemodiálisis; y cruzar estos términos con los ya existentes en la Clasificación Internacional para la Práctica de Enfermería. **Método:** estudio descriptivo con enfoque cuantitativo, realizado entre febrero y diciembre de 2021, período en el que se realizó una revisión bibliográfica integradora para relevar los términos que representan las necesidades humanas afectadas en el paciente renal crónico en hemodiálisis; luego se procedió al mapeo cruzado de estos términos identificados con los términos de la CIPE® versión 2019/2020. **Resultados:** se identificaron 1.946 términos extraídos de los artículos que formaban parte de la revisión integradora. Tras el proceso de normalización y estandarización, se excluyeron 689 términos, resultando en la posterior composición de 1.257 términos, que fueron mapeados con los términos de la Clasificación Internacional para la Práctica de Enfermería versión 2019/2020. Al final, el banco de términos estaba compuesto por 626 términos constantes y 631 términos no constantes. **Conclusión e implicación para la práctica:** se identificaron los términos relevantes para la práctica enfermera en el cuidado de los pacientes con insuficiencia renal crónica en hemodiálisis. Los términos se subsiguen para ayudar al enfermero a promover una asistencia sistematizada, utilizando una práctica basada en la evidencia.

**Palabras clave:** Enfermería; Pacientes; Proceso de Enfermería; Terapia de Reemplazo Renal; Terminología.

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Submitted on 08/09/2022.

Accepted on 12/16/2022.

DOI: <https://doi.org/10.1590/2177-9465-EAN-2022-0274en>

## INTRODUCTION

Chronic kidney disease (CKD) is recognized as a global health problem and is classified according to the glomerular filtration rate in up to five stages, the last of which requires the use of renal replacement therapy (RRT).<sup>1-3</sup> In Brazil, the Census of the Brazilian Society of Nephrology (SBN- in Portuguese) estimates that there are 148,363 people on dialysis treatment with a prevalence and incidence rate of 696 and 224 per million of population, respectively. Hemodialysis (HD) is the RRT performed by 92.5% of patients.<sup>2</sup>

The patient on hemodialysis can be affected in his psychobiological, psychosocial and psychospiritual needs. In this context, health teams should support them in actions that cover these needs, which highlights nursing in this scenario, by basing their care on clinical evidence supported by the Nursing Process (NP), regulated by Resolution 358/2009 of the Federal Council of Nursing (COFEN).<sup>1,4</sup>

To support the standardized record of NP, the use of terminologies is necessary, among which stands out the International Classification for Nursing Practice (ICNP®), developed and managed by the International Council of Nurses (ICN). The ICNP® supports nursing practice worldwide with an interface that allows both its use in care delivery and in harmonization with other taxonomies. In addition, it is related within the family of international classifications of the World Health Organization.<sup>5</sup>

Until 2021, when it was associated with the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT), the ICN encouraged the development of terminological subsets, which consist of a set of pre-coordinated statements of diagnoses/outcomes and nursing interventions for a specific population and/or specialty of care.<sup>5,6</sup> In an extensive search carried out in the databases as well as in direct contact with the ICNP® Brazil Center, a national and international reference for the use of this terminology, the inexistence of a terminological subset for chronic renal failure patients on hemodialysis was verified.

To elaborate these subsets, it is initially necessary to search for terms used in clinical practice and map them with the terms already existing in the ICNP®, so that this classification may represent the culture and scientific knowledge produced in each location/specificity. The ICN then encourages that these terms be submitted to it for consideration and likely inclusion in the classification system.<sup>5,7</sup>

Given the need to standardize the language of nursing, to meet the needs of the high and growing number of chronic renal patients on hemodialysis and the important role of nursing in this scenario, this study aims to: identify the terms that represent the human needs affected in this population; and perform the cross-mapping of these terms with those already existing in the International Classification for Nursing Practice.

## METHODS

This is a descriptive study with a quantitative approach, carried out from February to December 2021 and developed

in two stages: in the first, an integrative literature review was carried out to survey the terms that represent the human needs affected in the chronic renal failure patient on hemodialysis; in the second, the cross-mapping of these terms identified with the ICNP® terms 2019/2020 version was performed.

The integrative review was conducted based on the following research question: Which terms found in the literature represent the human needs affected in chronic renal failure patients on hemodialysis?

The following health descriptors (DECs) were defined: Chronic Renal Failure and Renal Dialysis. The search was carried out in the CAPES/MEC Portal of Periodicals in the databases: CINAHL (Cumulative Index to Nursing & Allied Health Literature); COCHRANE (Cochrane Database of Systematic Reviews); LILACS (Latin American and Caribbean Literature on Health Sciences); MEDLINE (Medical Literature Analysis and Retrieval System On-line) via PubMed (National Library of Medicine); and SciELO (Scientific Electronic Library Online). The search strategies adopted were: "Renal Insufficiency, Chronic AND Renal Dialysis", "Chronic Renal Insufficiency AND Renal Dialysis".

By using these descriptors, the search was expanded so that any article related to the theme was pre-selected, regardless of being originally produced by nursing or by another area of knowledge. The choice for national research occurred due to the need for a culturally representative terminology.

Inclusion criteria were national articles; published between 2016 and 2020; available in full; with free online access and adherence to the research topic. Articles involving conservative treatment; kidney transplantation; peritoneal dialysis; dialysis of patients with acute kidney injury; new treatments and drugs; and pregnant women and pediatric population were excluded.

The articles were selected by two independent reviewers: based on reading the titles and abstracts, in the first evaluation; and full text, in the second selection. Subsequently, the articles underwent the process of removing sections with low potential for containing relevant terms, such as: titles, authors, abstracts, footnotes, methodology, references, their superscript identifications in the text, and acknowledgements. Consequently, the articles were grouped in a single Word® file, converted to a "PDF®" (Portable Document Format) file, which constituted the corpus of the study.

The term extraction process was automated through a tool called PorOnto, which is used for the semiautomatic construction of ontologies from texts in Portuguese in the health area.<sup>8</sup> The extraction of terms occurred by sending a "PDF®" file to the PorOnto tool, which automatically processed the file and generated an Excel® spreadsheet containing simple terms and compound terms organized in alphabetical order with their frequency of appearance.

To organize the base of terms, they were submitted to a process of normalization and standardization by removing repetitions, correcting spelling, analyzing the terms (same,<sup>9,10</sup> similar,<sup>9,10</sup> absent,<sup>9</sup> new,<sup>9,10</sup> and may also be present in broader,<sup>10</sup>

narrower<sup>10</sup>), adjusting verb tenses, grammatical gender (masculine and feminine) and numbers (singular and plural). The terms were standardized, keeping in the study the masculine gender, singular and verbs in the infinitive.<sup>9,10</sup> This process was carried out by two researchers with experience in the use of ICNP® and of the terminological resources evaluated.

The terms normalized in the previous step were submitted to the cross-mapping process. To this end, two Excel® spreadsheets were prepared: one containing the terms identified in the literature and the other with the terms from the ICNP® 2019/2020. These two spreadsheets were imported into Microsoft Office Access 2013® software, and the result of this cross-mapping generated a new Excel® spreadsheet with the constant terms and the terms not constant in the 2019/2020 version of the ICNP®.

The terms not included in the ICNP® were independently analyzed by two researchers for equivalence and cardinality, as recommended by ISO/TR 12.300/2016: 1) Equivalence of meaning: lexical and conceptual; 2) Equivalence of meaning, but with synonymy; 3) The source term is broader and has less specific meaning than the target term; 4) The source term is more restricted and has more specific meaning than the target term; 5) No mapping is possible, a concept with some degree of equivalence (as measured by any of the other four evaluations) was not found in the target.<sup>11</sup>

The terms that established equivalence degree 1 and 2 were considered as constant terms in the ICNP®. While terms with equivalence grades 3, 4 and 5 were considered as terms not constant in the classification system. It should be clarified that the source term refers to the term found in the literature, while the target term refers to the term present in the ICNP®.<sup>11,12</sup>

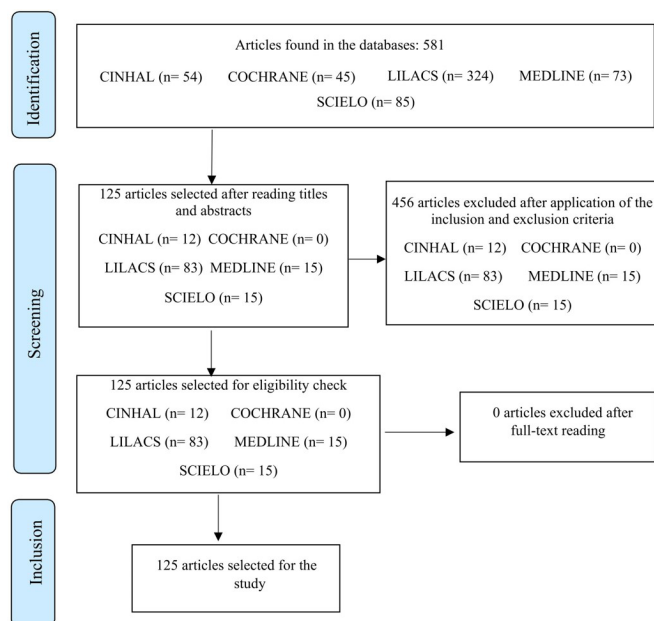
At the end of this step, the bank of relevant terms for nursing practice with chronic renal failure patients on hemodialysis was built.

## RESULTS

The search in the five databases was composed of 581 articles, of which 125 were included in the study after reading the titles and abstracts and applying the inclusion and exclusion criteria (Figure 1). After reading the full text of the 125 articles, 1,946 terms were extracted that represented, to some extent, the human needs affected by living with chronic kidney disease and hemodialysis.

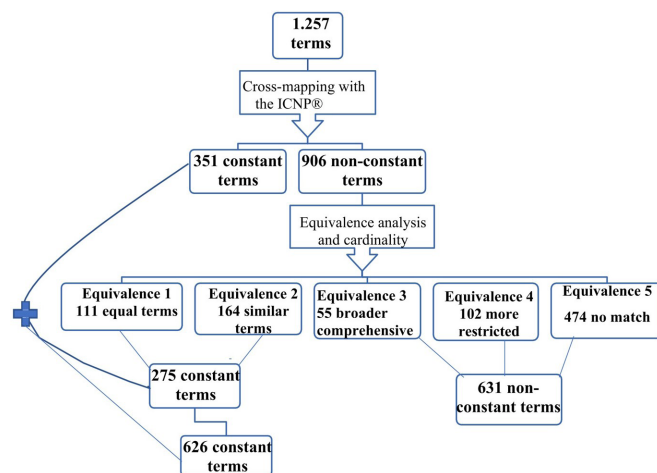
After the normalization and standardization step, 689 terms were excluded, resulting in the subsequent composition of 1,257 terms, which were mapped with the terms from the ICNP® version 2019/2020 (Figure 2).

In the end, the term bank consisted of 626 (49.9%) constant terms and 631 (50.1%) non-constant terms. Tables 1 and 2 show the most frequent constant and non-constant terms of the total terms found, distributed according to the group of basic human needs affected, followed by the presentation of their equivalence/cardinality.



**Figure 1.** Adapted PRISMA flowchart of the search process and selection of articles in the databases.

Source: Own.



**Figure 2.** Cross-mapping of terms identified in the literature with terms from ICNP® version 2019/2020.

Source: Own.

## DISCUSSION

In nursing care to the chronic renal patient on hemodialysis, the nurse who works in the dialysis service is required to be able to coordinate the assistance provided from the identification of human needs affected by living with chronic renal disease and hemodialysis, to provide means of care to these patients that enable them to achieve an improvement in the adequacy of treatment and in their quality of life.<sup>13</sup>

**Table 1.** Terms in ICNP® that represent the human needs affected in the person with chronic kidney disease on hemodialysis.

Psychobiological Needs			
Source term	Frequency*	Target Term (ICNP®)	Equivalence / Cardinality
Inflammation	37; 29.6%	Inflammation	1 / One to one
Pain	33; 26.4%	Pain / Muscle Pain / Musculoskeletal Pain / Bone Pain / Fracture Pain	1 / One to many
Hypertension	28; 22.4%	Hypertension	1 / One to one
Malnutrition	26; 20.8%	Malnutrition	1 / One to one
Infection	23; 18.4%	Infection / Cross Infection	1 / One to many
Weakness	22; 17.6%	Weakness	1 / One to one
Edema	18; 14.4%	Edema / Lymphatic Edema	1 / One to many
Fatigue	18; 14.4%	Fatigue / Fatigue, Absent	1 / One to many
Hypotension	14; 11.2%	Hypotension	1 / One to one
Nausea	13; 10.4%	Nausea / Nausea, Absent	1 / One to many
Sleep	12; 9.6%	Sleep / Sleep, Adequate / Sleep, Poor	1 / One to many
Metabolic Acidosis	12; 9.6%	Metabolic Acidosis	1 / One to one
Hyperphosphatemia	08; 6.4%	Hyperphosphatemia	1 / One to one
Proteinuria	07; 5.6%	Proteinuria	1 / One to one
Psychosocial Needs			
Dependency	37; 29.6%	Dependency / Alcohol Dependency / Drug Dependency / Dependency, negative	1 / One to many
Fear	35; 28%	Fear / Fear of Death / Fear of Abandonment / Fear of Contagion / Fear of Side Effects of Medication / Fear of Being a Burden to Others	1 / One to many
Sadness	25; 20%	Suffering	1 / One to one
Self-care	22; 17.6%	Autonomy	1 / One to one
Anxiety	21; 16.8%	Anxiety / Separation Anxiety	1 / One to many
Self-care	20; 16%	Self-care / Skin self-care	1 / One to many
Anguish	17; 13.6%	Anguish / Spiritual Anguish / Moral Anguish	1 / One to many
Knowledge	15; 12%	Knowledge / Family Knowledge Family Knowledge / Family Knowledge of Illness / Health Knowledge	1 / One to many
Frustration	15; 12%	Frustration	1 / One to one
Insecurity	15; 12%	Insecurity	1 / One to one
Self-Esteem	13; 10.4%	Self-image / Negative self-image /	1 / One to one
Stress	13; 10.4%	Stress / Caregiver Stress / Stress from Changing (or Transfer) of Environment	1 / One to many
Disability	13; 10.4%	Disability (or Limitation)	1 / One to one
Self-Esteem	10; 8%	Self-esteem / Low Self-esteem Self-Esteem / Low Self-Esteem, Chronic	1 / One to many
Sadness	07; 5.6%	Sadness	1 / One to one
Psychospiritual Needs			
Spirituality	09; 7.2%	Spiritual Belief / Spiritual Condition / Spiritual Role / Spiritual Process / Behavior Spiritual	2 / One to many
Religious Belief	04; 3.2%	Religious Belief / Religious Belief, Negative / Religious Belief, Positive Religious, positive	1 / One to many

\*Absolute and relative frequency.

Source: Own.

**Table 2.** Terms not in the ICNP® that represent the human needs affected in the person with chronic kidney disease on hemodialysis.

Psychobiological Needs			
Source term	Frequency*	Target Term (ICNP®)	Equivalence / Cardinality
Depression	30; 24%	-	5
Anemia	27; 21.6%	-	5
Renal Therapy	26; 20.8%	-	5
Uremia	23; 18.4%	-	5
Azotemia	12; 9.6%	-	5
Malaise	10; 8%	-	5
Unstable blood glucose	09; 7.2%	-	5
Anorexia	09; 7.2%	-	5
Atherosclerosis	08; 6.4%	-	5
Chronic inflammation	08; 6.4%	Inflammation	4 / One to one
Muscle strength	08; 6.4%	-	5
Arteriovenous fistula	07; 5.6%	-	5
Hypoalbuminemia	06; 4.8%	-	5
Sedentarism	06; 4.8%	hypoactivity / disuse	4 / One to many
Uremic breath	05; 4%	-	5
Skin lesion	05; 4%	Injury	4 / One to one
Sarcopenia	04; 3.2%	-	5
Chest pain	04; 3.2%	Pain	4 / One to one
Periodontitis	04; 3.2%	-	5
Pulmonary congestion	03; 2.4%	Congestion	4 / One to one
Anuria	03; 2.4%	Genitourinary Condition / Urinary Condition / Urinary System Function	4 / One to many
Xerostomia	03; 2.4%	-	5
Psychosocial Needs			
Education	11; 8.8%	-	5
Vulnerability	07; 5.6%	-	5
Deprivation	04; 3.2%	-	5
Freedom	03; 2.4%	-	5
Welfare	03; 2.4%	-	5
Courage	03; 2.4%	-	5

\*Absolute and relative frequency.

Source: Own.

In this sense, it is the duty of every health worker, including nurses, to identify and intervene in problems arising from hemodialysis treatment, inserting in their care mechanisms that can meet all the demands of patients based on an assistance where their gaze considers them in their entirety.<sup>14</sup>

The constant and non-constant terms characterize the biopsychospiritual needs and mark the significant transformations in the life of the renal patient since the diagnosis of chronic kidney disease until living with hemodialysis. Therefore, the use of the theoretical framework of Basic Human Needs is justified to organize nursing care for people with chronic kidney disease on hemodialysis.<sup>15</sup>

The terms classified as constant in the ICNP® showed a considerable predominance in this study, being represented by

49.9% of the terms. This shows that they express the specificity of nursing practice in the care of chronic renal failure patients on hemodialysis and are inserted in this terminology. In this context, it is only possible to evaluate the potentiality and quality of a terminology based on its use in clinical practice through clinical reasoning and its documentation in manual or electronic medical records.<sup>5</sup>

One of the aspects that drew attention in the analysis of the terms was related to the cross-mapping, which indicated 631 terms not contained in the ICNP®. However, the current version of the ICNP® showed 2,430 primitive concepts. In this sense, it is possible to analyze that some non-constant terms are part of the definition and/or composition of other terms, such as "Uremic Breath", formed by two terms of the Focus axis, which indicates

the use of a specific language of nursing practice in this area of care, and also reinforces the need for content review and addition of new terms that fill existing gaps in nursing practice and promote the strengthening of terminology.<sup>5,16</sup>

Moreover, a large amount of terms, both constant and non-constant in ICNP®, was observed allocated in the group of psychobiological needs compared to psychosocial and psychospiritual needs. This reflects the constant hemodynamic unbalance experienced by the chronic renal patient, which justifies the appearance of needs in greater or lesser intensity, although they all suffer changes when any one of them manifests itself.<sup>15</sup>

Regarding psychobiological needs, the non-constant term “Anemia” was frequently found in this study, standing out as the second term with the highest number of appearances in this group. Anemia is caused by a deficiency in the production of erythropoietin, a hormone produced by the kidneys that helps the proliferation and differentiation of hematopoietic cells. Therefore, its reduction reduces the supply of oxygen to the tissues, causing fatigue, muscle weakness, dyspnea, anorexia, sexual dysfunction and reduced sense of well-being, among other symptoms.<sup>17-21</sup> Cardiac overload may also occur as a result of the heart’s response to the decreased capacity to transport oxygen, increasing the chances of ischemia.<sup>17,22</sup> It is noteworthy that the terms “Weakness” and “Fatigue” are already constant terms in ICNP®, representing the recurrence of these symptoms and their associations to the terminology.

It is known that chronic inflammation, restricted diet, sedentary levels, and aging are factors that lead to the loss of muscle mass and predispose to sarcopenia, a multifactorial process that involves physical inactivity and imbalance in protein synthesis, favoring the risk of falls, decreased quality of life, and functional capacity. Thus, it is necessary to have a multi-professional work that develops a therapeutic plan to reestablish the nutritional status, improve quality of life, and self-esteem.<sup>23,24</sup>

Moreover, it is emphasized that chronic kidney disease is considered an inflammatory situation that induces the release of pro-inflammatory cytokines, thus, patients on hemodialysis present a permanent inflammatory state and become more vulnerable to acquire infections caused by immunosuppression, by the deterioration of kidney function, and by the uremic state.<sup>25</sup> Such evidence corroborates the frequent appearance of the constant terms “Inflammation” and “Infection” in the group of psychobiological needs.

Studies show that in hemodialysis treatment there is a loss of 2 to 3 g of protein and decreased serum albumin levels in situations of hypervolemia, leading to hypoalbuminemia. A higher sodium intake is related to increased thirst and consequent xerostomia, associated with high fluid intake and its retention, followed by excessive interdialytic weight gain and pulmonary congestion.<sup>23,26</sup> Thus, the insertion of the non-constant terms, “Hypoalbuminemia”, “Xerostomia” and “Pulmonary congestion” is justified, as they reflect the common use of these terms by Nursing in this specialty, in addition to the chain of clinical events of the disease.

The literature reveals that hydric and dietary restrictions are considered the most difficult aspects in the treatment of the chronic renal patient.<sup>27</sup> Moreover, the inadequate renal function reflects in alterations in the oral cavity, highlighting xerostomia, caused by hydric restriction, and uremic breath, which is related to the high concentration of urea in saliva and its metabolism into ammonia.<sup>28,29</sup>

The discovery of the disease and the need to undergo hemodialysis causes the individual internal conflicts permeated by feelings that induce changes in the psychological domain, which can trigger depression. Because of this, a social, family, and multi-professional support network is necessary to help the individual through the ups and downs of the therapeutic process.<sup>30,31</sup>

On the other hand, it is noticeable that the terminology in question reproduces terms that address the psychosocial needs affected in these patients. The patient’s dependence on the hemodialysis machine reduces his opportunities to maintain employment and causes loss of autonomy and financial dependence due to the long treatment that requires the presence of the individual in the reference service three times a week with a stay of 4 hours. With this, there is a decrease in their monthly income and an increase with the financial expenses related to the disease and the treatment. This fact can hinder patient compliance, especially if the patient assumes the role of the family’s main provider.<sup>32-34</sup>

In turn, the psychosocial needs affected in these patients are also represented by the non-constant term “Schooling” and the constant terms “Self-care” and “Knowledge”, considered the most prevalent in the literature found. The level of education is a fundamental factor for understanding the treatment, since the higher the level of education, the greater the access to information about the treatment and the better the socioeconomic condition. However, a low level of education can negatively interfere in the learning of self-care and in the knowledge and adherence to healthy lifestyle practices.<sup>35</sup>

Regarding psychospiritual needs, the results showed that this group was only represented by the constant terms “Spirituality” and “Religious Belief”. Although the literature brings positive evidence for the formulation of possible nursing diagnoses, this need is not always addressed with the patients, which justifies the absence of non-constant terms, and the small number of constant terms present in this group.<sup>34</sup>

One study observed that patients, after being affected by the disease and those who had already been affected by it had an increase in faith in God, which demonstrated the need for a spiritual and religious support in times of anguish facing hemodialysis treatment.<sup>34</sup>

The construction of a bank of terms relevant to nursing practice with chronic renal failure patients on hemodialysis constitutes a technological product, as its use by nurses contributes to the construction of diagnoses, interventions, and nursing outcomes for this specific clientele and to the effective use of standardized languages, which will improve clinical reasoning and clinical decision making by nurses, in addition to favoring the assertive recording of the Nursing Process.

## CONCLUSION AND IMPLICATIONS FOR PRACTICE

This study allowed the identification of 1,257 terms that represented the human needs affected in the chronic renal patient on hemodialysis, in addition to the comparison of these terms with the primitive and pre-coordinated concepts contained in the ICNP® version 2019/2020, resulting in a bank of relevant terms for nursing practice with chronic renal patients on hemodialysis, which made it possible to demonstrate that nephrology nursing has a special language, which can allow the organization of assistance to these people, considering an expanded perspective, aiming to meet all their needs.

This bank of terms will serve as a subsidy to help nurses promote systematized care, using evidence-based practice. However, the existence of terms without concordance with the ICNP® in this study demonstrates the need to develop new research to maintain the updating of this terminology, as well as to construct and validate instruments that use a standardized language so that they subsidize the daily practice of nurses.

Finally, the main limitation of this study is the fact that the terms identified in the literature have not gone through the process of content validation by experts, making it necessary to promote future studies.

## AUTHOR'S CONTRIBUTIONS

Study design. Juliana Otaciana dos Santos. Silvia Maria de Sá Basílio Lins. Maria Miriam Lima da Nóbrega.

Data acquisition. Juliana Otaciana dos Santos. Silvia Maria de Sá Basílio Lins. Maria Miriam Lima da Nóbrega.

Data analysis and interpretation of results. Juliana Otaciana dos Santos. Silvia Maria de Sá Basílio Lins. Maria Miriam Lima da Nóbrega. Joyce Martins Arimatea Branco Tavares. Harlon França de Menezes. Halene Cristina Dias de Armada e Silva.

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Responsibility for all aspects of the content and integrity of the published article. Juliana Otaciana dos Santos. Silvia Maria de Sá Basílio Lins. Maria Miriam Lima da Nóbrega. Joyce Martins Arimatea Branco Tavares. Harlon França de Menezes. Halene Cristina Dias de Armada e Silva.

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## REFERENCES

1. Silva SOP, Lima CB. Tratamento de pessoas com insuficiência renal crônica: análise de cuidados de enfermagem. *Temas em Saúde* [Internet]. 2016; [cited 2022 Mar 15];16(2):332-46. Available from: <https://temasemsaude.com/wp-content/uploads/2016/08/16219.pdf>
2. Sociedade Brasileira de Nefrologia. Censo 2021 [Internet]. 2021 [cited 2022 Mar 15]. Available from: <https://www.censo-sbn.org.br/censosAnteriores>
3. Ministério da Saúde (BR). Diretrizes clínicas para o cuidado ao paciente com Doença Renal Crônica – DRC no Sistema Único de Saúde. Brasília (DF): Departamento de Atenção Especializada e Temática, Secretaria de Atenção à Saúde, Ministério da Saúde; 2014.
4. Resolução nº 358, de 15 de outubro de 2009 (BR). Dispõe sobre a sistematização da assistência de enfermagem e a implementação do processo de enfermagem em ambientes, públicos ou privados, em que ocorre o cuidado profissional de enfermagem, e dá outras providências. *Diário Oficial da União, Brasília (DF)*, 2009 [cited 2022 Mar 15]. Available from: [http://www.cofen.gov.br/resoluco-cofen-3582009\\_4384.html](http://www.cofen.gov.br/resoluco-cofen-3582009_4384.html)
5. Garcia TR. Classificação Internacional para a Prática de Enfermagem (CIPE®): versão 2019/2020. Porto Alegre: Artmed; 2020.
6. Cubas MR, Nóbrega MML. Equivalence between ICNP® and SNOMED CT concepts: theoretical reflection. *Texto Contexto Enferm*. 2022;31:e20210450. <http://dx.doi.org/10.1590/1980-265x-tce-2021-0450en>.
7. Carvalho CMG, Cubas MR, Nóbrega MML. Brazilian method for the development terminological subsets of ICNP®: limits and potentialities. *Rev Bras Enferm*. 2017;70(2):430-5. <http://dx.doi.org/10.1590/0034-7167-2016-0308>. PMID:28403281.
8. Zahra FM, Carvalho DR, Malucelli A. Poronto: ferramenta para construção semiautomática de ontologias em português. *J Health Inform [Internet]*. 2013; [cited 2022 Mar 15];5(2):52-9. Available from: <http://www.jhi-sbis.saude.ws/ojs-jhi/index.php/jhi-sbis/article/view/232/167>
9. Oliveira MDS, Lima JOR, Garcia TR, Bachion MM. Useful terms for nursing practice in the care of people with leprosy. *Rev Bras Enferm*. 2019;72(3):744-52. <http://dx.doi.org/10.1590/0034-7167-2017-0684>. PMID:31269141.
10. Cubas MR, Pleis LE, Gomes DC, Costa ECR, Peluci APVD, Shmeil MAH et al. Mapping and definition of terms used by nurses in a hospital specialized in emergency and trauma care. *Referência*. 2017;4(12):45-53. <http://dx.doi.org/10.12707/RIV16067>.
11. Torres FBG, Gomes DC, Ronnau L, Moro CMC, Cubas MR. ISO/TR 12300:2016 for clinical cross-terminology mapping: contribution to nursing. *Rev Esc Enferm USP*. 2020;54:e0303569. <http://dx.doi.org/10.1590/s1980-220x2018052203569>. PMID:32696939.
12. Associação Brasileira de Normas Técnicas. ABNT ISO/TR 12300: Informática em saúde - princípios de mapeamento entre sistemas terminológicos. Rio de Janeiro: ABNT; 2016.
13. Guimarães GL, Goveia VR, Mendoza IYQ, Souza KV, Guimarães MO, Matos SS. Contribution of horta theory for critical of nursing diagnostics patient in hemodialysis. *Rev Enferm UFPE on line*. 2016;10(2):554-61. <http://dx.doi.org/10.5205/reuol.8557-74661-1-SM1002201623>.
14. Debone MC, Pedruncci ESN, Candido MCP, Marques S, Kusumota L. Nursing diagnosis in older adults with chronic kidney disease on hemodialysis. *Rev Bras Enferm*. 2017;70(4):800-5. <http://dx.doi.org/10.1590/0034-7167-2017-0117>. PMID:28793111.
15. Horta WA. Processo de enfermagem. Rio de Janeiro: Guanabara Koogan; 2018.
16. Clares JWB, Fernandes BKC, Guedes MVC, Freitas MC. Specialized nursing terminology for the care of people with spinal cord injury. *Rev Esc Enferm USP*. 2019;53:e03445. <http://dx.doi.org/10.1590/s1980-220x2018014203445>. PMID:31166532.
17. Daugirdas JT, Blake PG, Ing TS. Manual de diálise. 5ª ed. Rio de Janeiro: Guanabara Koogan; 2017.
18. Oliveira Jr WV, Zica CLA, Gouveia IPP, Vasconcelos MO, Oliveira RR, Oliveira TS. Anemia de doença crônica na doença renal crônica. *Conexão Ci*. 2019;14(2):57-65. <http://dx.doi.org/10.24862/ccov14i2.1032>.

19. Lins SMSB, Espírito Santo FH, Fuly PSC, Garcia TR. Subconjunto de conceitos diagnósticos da CIPE® para portadores de doença renal crônica. *Rev Bras Enferm.* 2013;66(2):180-9. <http://dx.doi.org/10.1590/S0034-71672013000200005>. PMID:23743836.
20. Nuhu F, Bhandari S. Oxidative stress and cardiovascular complications in chronic kidney disease, the impact of anaemia. *Pharmaceuticals.* 2018;11(4):103. <http://dx.doi.org/10.3390/ph11040103>. PMID:30314359.
21. Santos AR, Barreto CS, Vivas WLP. Perfil hematológico em pacientes renais crônicos. *Cienc Biol Saúde Unit [Internet].* 2016; [cited 2022 Mar 15];3(3):177-94. Available from: <https://periodicos.set.edu.br/cadernobiologicas/article/view/2961>
22. Santos NC, Silva GF, Carminat DA, Souza ALT. O papel do enfermeiro na anemia associada à doença renal crônica: revisão integrativa. *Res Soc Dev.* 2020;9(8):e95983820. <http://dx.doi.org/10.33448/rsd-v9i8.3820>.
23. Lourenço LS, Farias BB, Oliveira LL, Lenquiste SA, Gomes RL. Associação entre ingestão alimentar e risco de sarcopenia em pacientes idosos em hemodiálise. *Colloq Vitae.* 2020;12(3):16-25. <http://dx.doi.org/10.5747/cv.2020.v12.n3.v306>.
24. Farias DH, De Melo BC, Minatel V, Lira JLF, Calles ACDN. Sarcopenia e sua influência na mobilidade de pacientes com doença renal crônica: uma revisão sistemática. *Conscientiae Saúde.* 2019;18(2):293-300. <http://dx.doi.org/10.5585/conssaude.v18n2.10546>.
25. Chielle EO, Rigo J. The influence of the inflammatory process on serum iron concentration in hemodialysis patients. *Rev Bras Ciênc Saúde.* 2015;19(1):35-40. <http://dx.doi.org/10.4034/RBCS.2015.19.01.06>.
26. Tinôco JDS, Paiva MGMN, Lúcio KDB, Pinheiro RL, Macedo BM, Lira ALBC. Complications in patients with chronic renal failure undergoing hemodialysis. *Cogitare Enferm.* 2017;22(4):e52907. <http://dx.doi.org/10.5380/ce.v22i4.52907>.
27. Fernandes MICD, Enders BC, Lira ALBC. Analyzing the concept of fluid overload in Chronic Kidney Disease patients in dialysis therapy: an integrative review. *Rev Esc Enferm USP.* 2017;51(0):e03299. <http://dx.doi.org/10.1590/s1980-220x2016036003299>. PMID:29562036.
28. Cardoso LKA, Medeiros MRS, Oliveira PT, Silveira EJD. Oral alterations in patients with chronic renal failure undergoing hemodialysis. *Rev Bras Ciênc Saúde.* 2020;24(1):5-16. <http://dx.doi.org/10.22478/ufpb.2317-6032.2020v24n1.47546>.
29. Honarmand M, Farhad-Mollashahi L, Nakhaee A, Sargolzaie F. Oral manifestation and salivary changes in renal patients undergoing hemodialysis. *J Clin Exp Dent.* 2017;9(2):e207-10. <http://dx.doi.org/10.4317/jced.53215>. PMID:28210437.
30. Santos GLC, Alves TF, Quadros DCR, Giorgi MDM, Paula DM. The person's perception about its condition as a chronic renal patient in hemodialysis. *Rev Fun Care Online.* 2020;12:636-41. <http://dx.doi.org/10.9789/2175-5361.rpco.v12.9086>.
31. Hagemann PMS, Martin LC, Neme CMB. The effect of music therapy on hemodialysis patients' quality of life and depression symptoms. *J Bras Nefrol.* 2019;41(1):74-82. <http://dx.doi.org/10.1590/2175-8239-jbn-2018-0023>. PMID:30222176.
32. Gomes NDB, Leal NPR, Pimenta CJL, Martins KP, Ferreira GRS, Costa KNFM. Qualidade de vida de homens e mulheres em hemodiálise. *Rev Baiana Enferm.* 2018;32:e24935. <http://dx.doi.org/10.18471/rbe.v32.24935>.
33. Marinho CLA, Oliveira JF, Borges JES, Fernandes FECV, Silva RS. Associação entre características sociodemográficas e qualidade de vida de pacientes renais crônicos em hemodiálise. *Rev Cuid.* 2018;9(1):2017-29. <http://dx.doi.org/10.15649/cuidarte.v9i1.483>.
34. Carginin MCS, Santos KS, Getelina CO, Rotoli A, Paula SF, Ventura J. Patients undergoing hemodialysis: perception of changes and constraints regarding the kidney disease and its treatment. *Rev Fun Care Online.* 2018;10(4):926-31.
35. Clementino DC, Souza AMQ, Barros DCC, Carvalho DMA, Santos CR, Fraga SN. Hemodialysis patients: the importance of self-care with the arteriovenous fistula. *Rev Enferm UFPE on line.* 2018;12(7):1841-52. <http://dx.doi.org/10.5205/1981-8963-v12i7a234970p1841-1852-2018>.