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# Heart insufficiency and the main defining characteristics of nursing diagnosis excessive liquid volume

Insuficiencia cardíaca y las principales características que definen el diagnóstico en enfermería volumen de líquido excesivo

Insuficiencia cardíaca e as principais características definidoras do diagnóstico de enfermagem volume de líquidos excessivo

## ABSTRACT

**OBJECTIVE:** To analyze the main defining characteristics of the nursing diagnosis Excessive Fluid Volume applied in patients with Heart Failure. **METHOD:** Research was carried out between December 2019 and January 2020, on the electronic platforms LILACS, BDNF and ScIELO®, as an inclusion, the publications that took place between May 2014 and 2019 were delimited. **RESULTS:** A sample of 10 studies was obtained, all published in nursing journals, regarding the design of the studies, two are descriptive studies, two are cohort, two are longitudinal, two are integrative reviews, one is transversal and one is qualitative. **CONCLUSION:** Diagnosis with excessive fluid volume and its characteristics are monitored during hospitalization, being indicators of the quality of HF nursing care at the hospital. Nurses deal with a variety of signs and symptoms during hospitalization that help in planning individualized and targeted interventions.

**DESCRIPTORS:** Nursing diagnosis; Cardiac insufficiency; Nursing.

## RESUMEN

**OBJETIVO:** Analizar las principales características definitorias del diagnóstico de enfermería Volumen de líquido excesivo aplicado en pacientes con insuficiencia cardíaca. **MÉTODO:** La investigación se realizó entre diciembre de 2019 y enero de 2020, en las plataformas electrónicas LILACS, BDNF y ScIELO®, como inclusión, se delimitaron las publicaciones realizadas entre mayo de 2014 y 2019. **RESULTADOS:** Se obtuvo una muestra de 10 estudios, todos publicados en revistas de enfermería, en cuanto al diseño de los estudios, dos son estudios descriptivos, dos son de cohorte, dos son longitudinales, dos son revisiones integradoras, una es transversal y una es cualitativa. **CONCLUSIÓN:** El diagnóstico de exceso de volumen de líquido y sus características se monitorizan durante la hospitalización, siendo indicadores de la calidad de la atención de enfermería de la IC en el hospital. Las enfermeras se ocupan de una variedad de signos y síntomas durante la hospitalización que ayudan a planificar intervenciones individualizadas y dirigidas.

**DESCRIPTORES:** Diagnóstico de enfermería; Insuficiencia cardíaca; Enfermería.

## RESUMO

**OBJETIVO:** Analisar as principais características definidoras do diagnóstico de enfermagem Volume de Líquido Excessivo aplicado em pacientes com Insuficiência Cardíaca. **MÉTODO:** Foi feita pesquisa entre dezembro de 2019 e janeiro de 2020, nas plataformas eletrônicas LILACS, BDNF e ScIELO®, como inclusão, foram delimitadas as publicações ocorridas entre maio de 2014 a 2019. **RESULTADOS:** Obteve-se uma amostra de 10 estudos, todos publicados em revistas de enfermagem, quanto ao desenho dos estudos, dois são estudos descritivos, dois são coorte, dois longitudinais, dois revisão integrativa, um transversal e um qualitativo. **CONCLUSÃO:** Diagnóstico com volume de líquidos excessivo e suas características são monitoradas durante a internação, sendo indicadores de qualidade dos cuidados de enfermagem da IC no hospital. Enfermeiros lidam com diversidades de sinais e sintomas no decorrer da internação que ajudam no planejamento de intervenções individualizadas e direcionadas.

**DESCRIPTORIOS:** Diagnóstico de enfermagem; Insuficiência cardíaca; Enfermagem.

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**INTRODUCTION**

**H**ear failure (HF) is a clinical syndrome resulting from any injury to the heart muscle, characterized by the inability of the heart to maintain a cardiac output within physiological values to meet tissue needs.<sup>1</sup> Congestive Heart Failure (CHF) is a long-term chronic disease that can affect both sides of the heart, thereby compromising the blood pumping function due to the return of blood flow, which can lead to impaired vital functions, due to the accumulation of blood, which results in a lack of oxygen to these organs.<sup>2</sup>

This pathology lacks immediate therapeutic interventions, as it compromises the functional capacity of its patients, especially HF with reduced left ventricular blood ejection fraction (LVEF) that causes dyspnea, fatigue, limits exercise tolerance, in addition to water retention, leading to pulmonary congestion and peripheral edema. These clinical manifestations can impair the functional capacity and quality of life of patients with HF.<sup>3,4</sup>

A study conducted in Brazil, demonstrated that the clinical manifestations most commonly presented in patients admitted to the emergency room are related to congestive condi-

tions and hypertension. In this scenario, the admission of patients to emergency rooms requires an efficient, fast and safe evaluation by doctors and nurses. Prompt recognition of the clinical condition determines and guides the most appropriate interventions for these patients.<sup>5</sup>

To care for hospitalized HF patients, nurses establish nursing diagnoses to achieve results through nursing interventions.

The Nursing Diagnosis (ND) consists of one of the most important phases of the Nursing Process (NP), as it is through this stage that the professional identifies the main problems in force in the patient, in order to start the implementation of care. However, for the diagnostic survey to be carried out satisfactorily, it is necessary that the nurse has a critical thinking strongly based on scientific evidence.<sup>6</sup>

One of the most well-known and recognized systems in the DE stage is NANDA-I. Its last edition dates from 2018 - 2020 and is structured in 13 domains, 47 classes and 244 diagnoses. Each diagnosis has a title, definition, defining characteristics (signs and symptoms), related factors (factors that may cause or contribute to the problem) or risk factors (conditions that increase the

likelihood of disease onset and/or worsening).<sup>7</sup>

Among the various NDs in NANDA-I (2018), there is an "Excessive Fluid Volume" (EFV), which falls within domain 2, called nutrition, and in class 5, referring to Hydration. The EFV is defined as the nursing diagnosis Excessive Fluid Volume is defined by NANDA as "increased isotonic fluid retention". The related factors of the nursing diagnosis Excessive Fluid Volume are: compromised regulatory mechanism, excessive fluid intake and excessive sodium intake. The excessive fluid intake factor, in turn, is characterized by a higher fluid intake than the patient can eliminate. Finally, excessive sodium intake, almost always resulting from an inadequate diet, can lead to an overload of renal functions, causing fluid retention and hindering its elimination.<sup>7</sup>

The defining characteristics are clinical indicators that are grouped as a manifestation of nursing diagnoses. It is clinical evidence that describes the exact components or signs and symptoms that represent a diagnostic title.

Results from the group of patients with diagnosis identified edema, orthopnea, fatigue, jugular turgency, variation in blood pressure, positive water balance, change in respiratory pattern,

variation in central venous pressure (PVC) and electrolyte changes as defining characteristics. agreement between the two experts for patients with and without diagnosis.<sup>10</sup>

Epidemiological data demonstrate that HF is one of the main causes of morbidity and mortality among chronic non-communicable diseases, in addition to reducing the quality of life of patients with this condition.<sup>8</sup>

The increase in life expectancy and longevity in developed countries potentially has a major influence on the epidemiology of CHF. Approximately 23 million people have CHF and 2 million new cases are diagnosed each year worldwide. About 6,5 million people in Europe, 5 million people in the United States and 2,4 million people in Japan suffer from CHF. In Brazil, it is estimated that 6,4 million Brazilians suffer from CHF.<sup>9</sup>

Through this exposure, the need to deepen the knowledge related to the use of ND EFV was realized. This investigation was conducted through the following question: What are the most used defining characteristics for the nursing diagnosis Excessive Fluid Volume in patients with Heart Failure?

It is necessary to carry out this integrative review to synthesize the studies, in an attempt to identify the Defining Characteristics most frequently used in patients with heart failure in clinical practice, as well as to compare them with those listed by NANDA-I. With this, the following guiding question was outlined: What are the most used defining characteristics for the nursing diag-

nosis Excessive Fluid Volume in patients with Heart Failure?

## METHOD

It is an integrative review of the literature, as it allows the synthesis of published studies and allows conclusions of a particular area of study, in addition to pointing out gaps in knowledge that need further studies.<sup>11</sup>

The present study consists of a systematic review of the literature. Two independent reviewers (Santos and Vianna) made a selection of the articles included in full, published from December 2019 to January 2020, in Portuguese, English or Spanish, located in the electronic search through the reading of the titles and abstracts in the period of 06/03/2018 to 10/06/2018. The articles selected in this stage were read in full and evaluated according to the eligibility criteria. A third reviewer judged whether articles should be kept or deleted in situations where the two reviewers disagreed. The recommendations of the Preferred Report Items for Systematic Reviews and Meta-Analysis. Prisma was used for this review.

The search was performed in an electronic database (LILACS) Latin American and Caribbean in Health Sciences, (BDENF) Database in Nursing and (SciELO) Scientific Electronic Library Online and the following descriptors were used: "Diagnóstico de enfermagem"; "Insuficiência cardíaca"; "Enfermagem". And it was used as a search strategy "Diagnóstico de enfermagem"; "Insuficiência cardíaca"; "Enfermagem".

As inclusion criteria, publications from May 2014 to 2019 were delimited.

## RESULTS

A total of 83 articles were initially filtered and selected, available in full, in the English and Portuguese languages, published from 2014. Of these, three were duplicated and 52 were excluded by title and abstract, as they did not include the reviewed proposal.

Therefore, a total of ten articles were selected and included in this review. When analyzing the publications, it appears that the ten articles (100%) were published in Brazilian nursing journals.

As for the design of the studies, two are descriptive studies, two are cohort, two are longitudinal, two are integrative reviews, one is transversal and one is qualitative. Most of the selected publications presented the theme "Nursing diagnosis in heart failure".

This data corroborates the changes in the area of nursing education in Brazil, which has undergone transformations in view of the demands of its role in the formation of human resources with an adequate profile to the health needs of the population and the legitimacy of its role in the production of innovative knowledge and useful to society.

## DISCUSSION

After a thorough analysis of the articles, it was verified that the diagnosis of excessive fluid volume is still very present in patients with heart failure and

QUADRO 1 – Artigos que compõem corpus da pesquisa por número de evidências, título/ano, objetivos e resultados.

Nº DE EVIDÊNCIAS	TÍTULO / ANO	OBJETIVOS	RESULTADOS
Estudo de corte 2B	Predição de risco e acurácia diagnóstica em pacientes internados com insuficiência cardíaca descompensada: estudo de coorte / 2019	Analisar a acurácia diagnóstica de enfermagem em pacientes com predição de risco de piora clínica durante internação por insuficiência cardíaca agudamente descompensada	Dos 43 pacientes com risco de piora a acurácia diagnóstica apresentou-se na categoria Moderada/Alta em 22(89%). Débito cardíaco diminuído e Volume de líquidos excessivo foram pontuados com 100% na categoria Alta.

Estudo qualitativo 3E	Diagnósticos de enfermagem para pessoas com insuficiência cardíaca: mapeamento cruzado/2019	Mapear os enunciados diagnósticos de Enfermagem para pessoas com insuficiência cardíaca crônica por meio de dois sistemas de classificação em Enfermagem	Possibilitou-se a o mapeamento dos enunciados diagnósticos para pessoas com insuficiência cardíaca crônica e identificação desses nos sistemas de classificação NANDA-I, Inc. e CIPE®, bem como sua categorização com base nas necessidades humanas básicas.
Estudo de corte 2B	Associação dos diagnósticos de Enfermagem da NANDA internacional com hospitalização e morte em insuficiência cardíaca / 2019	Identificar os diagnósticos de enfermagem da NANDA-I mais frequentes em uma clínica de insuficiência cardíaca, verificar a associação dos diagnósticos de enfermagem e outras variáveis independentes com o óbito.	Foram identificados como diagnóstico de enfermagem mais frequentes ansiedade, disfunção sexual, fadiga, intolerância a atividade e conhecimento deficiente, entretanto, não apresentaram associação com o óbito.
Estudo transversal 4E	Diagnóstico de enfermagem intolerância à atividade em pacientes com insuficiência cardíaca crônica / 2019	Identificar o diagnóstico de enfermagem intolerância à atividade da NANDA - Internacional em pacientes com insuficiência cardíaca crônica	O diagnóstico de enfermagem intolerância à atividade se apresenta na amostra estudada, reforçando as limitações dos pacientes com insuficiência cardíaca em realizar as atividades de vida diária e necessidade de intervenção de enfermagem para melhorar a qualidade de vida dos mesmos.
Revisão integrativa 1A	Diagnósticos de enfermagem de pacientes com insuficiência cardíaca com fração de ejeção reduzida / 2017	Revisar na literatura os principais Diagnósticos de Enfermagem (DE) em pacientes com Insuficiência cardíaca com fração de ejeção reduzida.	Esta RI evidenciou os principais DE em pacientes com IC e FEVE reduzida, colaborando para que os cuidados clínicos sejam realizados de forma específica à esta população.
Estudo descritivo 2E	Diagnósticos e intervenções de enfermagem para a pessoa com insuficiência cardíaca descompensada/ 2016	Identificar os diagnósticos e intervenções de enfermagem à pessoa com insuficiência cardíaca descompensada.	Os termos identificados mais comuns à doença foram: dispneia, edema, fadiga, débito cardíaco diminuído e arritmia. Os diagnósticos/intervenções de enfermagem contribuem para a atuação do enfermeiro na tomada de decisão e manejo do paciente com insuficiência cardíaca descompensada, possibilitando realizar uma sistematização da assistência de enfermagem eficaz e resolutive.
Estudo longitudinal 2C	Diagnósticos de enfermagem em pacientes com insuficiência cardíaca hospitalizados: estudo longitudinal 2016	Identificar os diagnósticos de enfermagem fadiga, intolerância à atividade e débito cardíaco diminuído em pacientes com insuficiência cardíaca hospitalizados e verificar a associação entre as características definidoras e a presença dos referidos diagnósticos de enfermagem.	Dos 72 pacientes, 68,0% eram do sexo masculino e apresentaram o diagnóstico de enfermagem diminuição do débito cardíaco (62,5%) na primeira semana. A fadiga apareceu apenas em um paciente. Intolerância à atividade foi o diagnóstico que apresentou a maior discrepância entre os especialistas. O débito cardíaco diminuído foi associado às características defensivas: dispnéia, edema, distensão venosa jugular e fração de ejeção reduzida durante as três semanas de avaliação.
Estudo longitudinal 2C	Aplicabilidade dos resultados de enfermagem em pacientes com insuficiência cardíaca e volume de líquidos excessivo / 2016	Testar a aplicabilidade clínica da Nursing Outcomes Classification em pacientes com insuficiência cardíaca descompensada e Diagnóstico de Enfermagem Volume de Líquidos Excessivo.	Foram realizadas avaliações em 17 pacientes. Na avaliação clínica, mensuraram-se os resultados de enfermagem através da avaliação de seus indicadores. Seis resultados apresentaram aumento nos escores, quando comparados às médias da primeira e da última avaliação. A utilização da Nursing Outcomes Classification na prática clínica demonstrou melhora dos pacientes internados por insuficiência cardíaca descompensada.

Estudo descritivo 2E	Acurácia na inferência de diagnósticos de enfermagem de pacientes com insuficiência cardíaca / 2015	Verificar acurácia na determinação dos diagnósticos de enfermagem fadiga, intolerância à atividade e débito cardíaco diminuído em paciente com IC hospitalizados.	O diagnóstico de enfermagem fadiga foi o mais erroneamente identificado pelos enfermeiros avaliadores. A busca pelo aperfeiçoamento da acurácia diagnóstica reafirma a necessidade de treinamento contínuo e específico para a melhora da capacidade diagnosticadora do enfermeiro.
Revisão integrativa 1A	Diagnósticos de enfermagem de pacientes com insuficiência cardíaca: revisão integrativa / 2014	Identificar o conhecimento produzido e publicado na literatura nacional e internacional sobre diagnósticos de enfermagem em pacientes hospitalizados com insuficiência cardíaca.	Débito cardíaco diminuído, volume excessivo de líquidos, intolerância à atividade, integridade da pele prejudicada, troca de gases prejudicada, conhecimento deficiente, risco de quedas e mobilidade física prejudicada foram os diagnósticos mais citados nos estudos. Os resultados vão de encontro com a progressão da insuficiência cardíaca, que limita a tolerância do indivíduo ao exercício e causa retenção hídrica.

Fonte: autores, 2020

that we still have hospitalizations due to this type of diagnosis.

The “excessive fluid volume” in HF has as a causal factor the excessive intake of fluids and sodium, almost always resulting from an inadequate diet, which leads to an overload of renal functions and water retention.

The identification of the main defining characteristics such as dyspnea, orthopnea, edema, hepatojugular flow, pulmonary congestion and elevated central venous pressure were the main clinical indicators for the diagnosis of excessive fluid volume. These signs and symptoms depict the manifestations most commonly presented by decompensated patients that are mainly related to congestive conditions.<sup>5</sup>

The defining characteristic of dyspnea was considered one of the most important. It is one of the most common symptoms presented by patients with HF and may be directly associated with pulmonary congestion.

The defining characteristic of orthopnea is associated with an inability to improve the fraction of ventricular function and has been a symptom capable of identifying groups of individuals with a worse long-term prognosis.<sup>5</sup>

The defining characteristic of edema is a relevant clinical data in the evaluation, it is a common finding in patients with a diagnosis of decompensated HF,

it points to the need for a thorough evaluation, looking for other signs of

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congestion that may support an accurate clinical decision.<sup>5</sup>

The identification of the presence of positive hepatojugular flow is an alteration that reflects the inability of the right ventricle to adapt to the greater blood volume that is offered. In patients with HF and dyspnea, hepatojugular flow is a clinical predictor used successfully to identify congestive HF.

The characteristic pulmonary congestion was assessed by means of radiological examination, highlighting the importance of instrumentalizing nurses to interpret this finding. This was a feature included in the main feature group.<sup>5</sup>

The validation of the defining characteristic of high central venous pressure also stands out as the main one. This measurement can also be assessed using the estimated central venous pressure technique, obtained through the inspection and measurement of jugular distention.<sup>5</sup>

Physical examination is a method, the findings of which can be extremely useful in clinical practice, since it constitutes a feasible and low-cost means for subsidizing the assessment of hemodynamic states, especially in critically ill patients.

It is important to analyze the nursing diagnosis in patients at risk of clinical worsening and we should check



the association of the defining characteristics with the nursing diagnosis and map the nursing diagnoses for people with heart failure.

The excessive volume of liquid almost always results from an inadequate diet, which leads to an overload of renal function and water retention, nurses deal with a variety of signs and symptoms during hospitalization, the results of the NOC is worrying and influences the process of nursing, as the nurse points out that the results are measured

according to the clinical monitoring of the patient.<sup>16</sup>

## CONCLUSION

The high prevalence of the fluid volume diagnosis and its most present defining characteristics monitored during hospitalization can become indicators of the quality of nursing care in the hospital environment.

Nurses who care for patients with HF deal with a variety of signs and

symptoms during hospitalization that can help in planning individualized and targeted interventions.

The lack in the literature of publications focused on the theme made it impossible to fully develop this work. However, it is important to carry out integrative reviews to classify publications according to the levels of evidence and, thus, guide students and professionals on the subject and its development in recent years, using those who have the strongest evidence in clinical practice. ■

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