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# How to care for patients with heart failure – A systematic review of nursing interventions

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**Abstract: Background:** Heart Failure (HF) is a highly dysfunctional disease, with impact on the biopsychosocial dimensions of the patients. The worldwide progressive growth of HF incidence, caused by longer life expectancy, results in higher HF rehospitalization rates. HF patients' rehospitalization is mostly a result of avoidable causes, including limitations in knowledge regarding HF self-care and impaired therapeutic adherence; therefore, the intervention of nurses is essential. **Goals:** To identify nursing interventions to address alterations in Basic Human Needs (BHN) and to promote relief of symptoms for HF patients as they transition from hospital to home, including follow-up care. **Method:** A systematic review in CINAHL and MEDLINE databases to answer the study question: In patients with HF, what nursing interventions help to improve BHN, promote relief of symptoms and aid the transition from hospital to home? **Results:** Nine studies were included. Nursing interventions focused on relief of symptoms during hospitalization to promote well-being and the individual's health status. Preparing the patient's transition from hospital to home earlier in their admission allows for the identification and adequate response to patient needs. Language adaptation during health education and a periodic follow-up were effective measures to promote independence in HF self-care and to reduce mortality and rehospitalization rates. Even though these interventions show positive results, they are not frequently used in clinical practice given a lack of specialized education about HF among healthcare professionals and *empowerment* culture, as well as an incapacity for adequate patient follow-up. **Final Considerations:** The nurse is responsible for helping the patient to develop skills to manage their symptoms (e.g., recognize relevant symptoms) and the therapeutic regimen; if successfully achieved, this promotes *empowerment*, thus reducing readmissions and promoting well-being.

**Keywords:** Nursing care; Nursing diagnosis; Heart failure; Hospitalization; Transitional Care.

**Como cuidar de pacientes com insuficiência cardíaca – Uma revisão sistemática das intervenções de enfermagem**

**Resumo: Enquadramento:** A Insuficiência Cardíaca (IC) tem se revelado uma doença altamente disfuncional, com impacto nas dimensões biopsicossociais dos doentes. O crescimento progressivo mundial da incidência de IC, causado pelo aumento da esperança de vida, resulta em maiores taxas de reinternamentos. O reinternamento acontece sobretudo por causas evitáveis - conhecimento prejudicado no autocuidado com IC e adesão terapêutica prejudicada, portanto, a intervenção do enfermeiro é essencial. **Objetivos:** identificar as intervenções de enfermagem para satisfazer as Necessidades Humanas Fundamentais (NHF) prejudicadas e promover compensação de sintomas, cuidados de transição do hospital para o domicílio e acompanhamento do paciente. **Método:** revisão sistemática nas bases de dados CINAHL e MEDLINE para responder à questão do estudo: Em pacientes com IC quais são as intervenções de enfermagem que promovem a satisfação das NHF prejudicadas, promovem compensação de sintomas e cuidados de transição do hospital para o domicílio? **Resultados:** Nove estudos foram incluídos. As intervenções de enfermagem focadas na compensação dos sintomas durante a hospitalização, promovem o bem-estar e o estado de saúde do indivíduo. Preparar a transição do paciente para casa desde a admissão permite a identificação precoce e a resposta adequada às necessidades do paciente. A adaptação da linguagem durante a educação para a saúde e o acompanhamento periódico revelaram-se medidas eficazes para promover a independência no autocuidado da IC e a queda das taxas de mortalidade e reinternamento. Apesar de apresentarem ótimos resultados, essas intervenções não são tão frequentes na prática clínica, justificadas pela falta de conhecimentos especializados sobre IC entre os profissionais de saúde, cultura de *empowerment* e incapacidade de manter um acompanhamento adequado dos pacientes. **Considerações Finais:** O enfermeiro é responsável por ajudar o paciente a desenvolver habilidades para a gestão de sintomas (reconhecer sintomas relevantes) e do regime terapêutico, promovendo o *empowerment*, reduzindo assim os reinternamentos e promovendo o bem-estar.

**Palavras-chave:** Cuidados de enfermagem; Diagnóstico de enfermagem; Insuficiência cardíaca; Hospitalização; Cuidados de transição.

## 1. Introduction

Worldwide, cardiovascular diseases are the main cause of morbidity, with heart failure (HF) accounting for about 20% of new hospitalizations (Direção Geral da Saúde, 2017). HF is one of the primary causes of the increasing public health costs, and the incidence rate and mortality associated with heart disease (Guerra et al., 2017; Panjrath & Ahmed, 2017). Patients with HF can have acute attacks and need hospitalization and emergency medical treatment. It is predicted that in the next decade, the number of people hospitalized for HF will increase significantly, which will put more and more pressure on the health-care system (Alpert et al., 2017; Savarese & Lund, 2017).

HF is a chronic disease with a slow progression, characterized by signs and symptoms like dyspnea, orthopnea, fatigue, effort intolerance, jugular engorgement, and malleolar edema; the symptoms are caused by structural or functional cardiac alterations, which reduce cardiac output and increase intracardiac pressures at rest or exertion (Silva-Cardoso & Campelo, 2021). Symptoms related to cardiac changes, such as arrhythmia and dyspnea, compromise oxygenation, and HF patients encounter great difficulties regarding what is termed Basic Human Needs (BHN)–breathing, moving, rest and sleep (Pereira et al., 2016). As treatment options for HF have evolved, patients have a better understanding of the overall burden of HF; as such, this has contributed to the development of care methods more adjusted to the needs of these individuals (Zhang, Bai & Huang, 2020). Nursing care is important for people who experience illness; nurses provide patients assistance for making changes in their behavior to achieve good health. At present, nurses use interventions in the clinical settings based on evidence, and with a particular emphasis on outcome assessment (Smeulders et al., 2010).

HF is one of the main chronic diseases that leads to reduced capacity to satisfy BHN, which is a main cause of hospitalization in these patients. HF has a huge impact on family and social life and often triggers anxiety due to the difficulty in being autonomous. The nurse's intervention is essential with these patients, especially in the preparation for returning home and facilitating the safe hospital-home transition. The safe transition enables the person and family to manage the health/disease condition, which implies in-depth knowledge of all its dimensions and with a holistic, person-centered perspective.

Nurses are part of the professional health team who are responsible for helping patients to develop skills to manage their symptoms (e.g., recognize relevant symptoms) and the therapeutic regimen; they promote *empowerment,* thereby enhancing a patient's well-being and reducing readmissions (Vilas-Boas & Follath, 2006; Zhang et al., 2020). The aim of this study was to identify the most common nursing interventions for assisting with and improving the BHN of patients with HF, including those that promote relief of their symptoms, as well as facilitate their safe care transition from hospital to home.

## 2. Methodology

This is a mixed-methods systematic review study about evidence-based interventions that contribute to nursing practice. This approach is rigorous, explicit, and reproducible; it uses specific strategies and limits the bias in the selection of articles. It is about stringently evaluating primary studies in a specific area, through predetermined criteria according to the research question (Bettany-Saltikov, 2012). To formulate the research question, we considered the recommendations of the Joanna Briggs Institute (JBI, 2011). Based on the study problems and for a wider understanding of this phenomenon, the following question was created using the PICO format (Sousa et al., 2018): In patients with HF (population), what are nursing diagnoses and the most effective nursing interventions (intervention) to promote an individual's ability to manage their BHN, to relieve their symptoms, and to support safe transition of care from hospital to home (outcome)? The review was performed using the electronic databases CINAHL and MEDLINE. Boolean descriptors and operators were also used in creating the search strategy, specifically: [(Nursing Care OR Nursing Diagnosis OR Nurs*) AND (Heart Failure) AND (Hospitalization or Transitional Care)]. To obtain relevant papers given the review question, we established inclusion and exclusion criteria (Table 1).

**Table 1.** *Inclusion and exclusion criteria for the articles in this review*

| Criteria for Inclusion | Criteria for Exclusion |
|---|---|
| • Studies about adults and aging people with HF; and<br>• Studies with reference to nursing interventions to aid impaired BHN in patients with HF. | • Unclear methodology;<br>• No correlation with the study objectives.<br>• Repeated in different databases;<br>• Not written in English;<br>• Not available in full text.<br>• Published more than 6 years ago. |

To select studies, we considered all papers with at least 75% of the quality criteria as per JBI (JBI, 2014a). The data were collected in October 2021; 63 articles were retrieved using our search strategy, after which they were analyzed by two independent reviewers to assess methodological quality using the JBI classification and following the inclusion and exclusion criteria. The method we followed is shown in Figure 1.

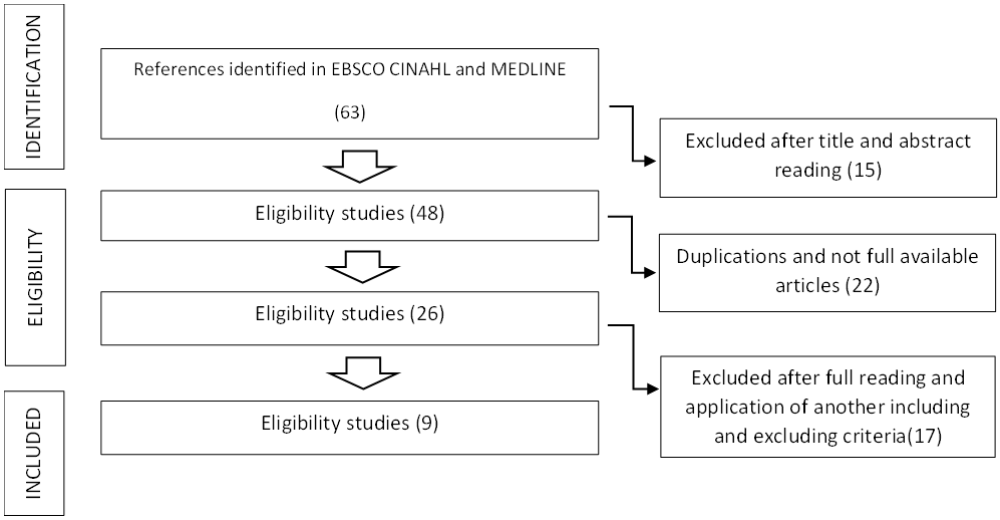


**Figure 1**. *Research Filtering Method*

The two independent investigators followed the same method, with the sequence suggested by the guidance of Mixed methods systematic reviews (Stern et al., 2020) The results were obtained in stages, from reading the title, the abstract, to the full text. The results obtained were compared and agreement between investigators was considered. In cases of disagreement or doubt, the article was moved to the next phase of analysis. A table was created to systematize the information collected and facilitate the analysis and interpretation. The investigators carried out a survey of diagnoses and nursing interventions, through the analyze the content of the results and discussion of the articles selected. The articles were subjected to an identification process regarding level evidence considering JBI levels of evidence (JBI,2014b)

The final included nine studies for this review are the following:
Effectiveness: three (3) randomized controlled studies (Bose et al., 2016; Sun et al., 2019; Ulin et al., 2016) – Level of evidence 1c; one (1) cohort study (Ernandes et al., 2019) – level of evidence 3c and three (3) observational studies (Pereira et al., 2019; Sousa et al., 2016; Souza et al., 2017) – level of evidence 4b.
Meaningfulness: two (2) qualitative studies (Nascimento, Silva, et al., 2019; Nascimento, Vieira, et al., 2019) – level of evidence 3. In this section, we present the main results as based on the nine selected studies. The HF patient has symptoms such as dyspnea, edema, and arrhythmias; as such, nursing interventions are essential to support the patient's BHN and the disease management. The nursing approaches in this regard are shown in the following table.

**Table 2.** *Studies included in the review*

| | Article | Type of Study | Findings |
|---|---|---|---|
| EFFECTIVENESS | Bose et al. (2016)<br><br>*Evaluation of a Coping Effectiveness Training intervention in patients with chronic heart failure – a randomized controlled trial* | Randomized Controlled Trial | Preparation for homecoming, emphasizing the emotional dimension and promoting coping effectiveness to reduce anxiety and distress. |
| | Ulin et al. (2016)<br><br>*Person-centred care – An approach that improves the discharge process* | Randomized Controlled Trial | Nursing interventions:<br>- Person-centered nursing care model;<br>- Articulation of social services to promote the person's support after discharge. |
| | Pereira et al. (2016)<br><br>*Diagnósticos de enfermagem em pacientes com insuficiência cardíaca hospitalizados: estudo longitudinal* | Longitudinal and prospective study | Nursing diagnoses:<br>- fatigue, activity intolerance, and decreased cardiac output. |
| | Sousa et al. (2016)<br><br>*Nursing diagnoses and interventions for people with decompensated heart failure* | Descriptive, observational and cross-sectional study | Main nursing problems:<br>- Cardiac changes such as arrhythmias, decreased cardiac output and edema.<br>- Respiratory changes such as dyspnea and fatigue. |
| | Souza et al. (2017)<br><br>*Nursing Diagnosis for People with Heart Failure Based on the Hemodynamic Profiles* | Analytical, cross-sectional study | Nursing diagnoses:<br>- risk of infection; deficit in self-care: bathing; risk of decreased cardiac output; risk of falling; impaired mobility; excessive fluid volume; risk of constipation; and risk of compromised skin integrity.<br>Nursing interventions: Detailed physical assessment, identification of signs and symptoms. |
| | Ernandes et al. (2019)<br><br>*Prediction of risk and diagnostic accuracy in patients hospitalized for decompensated heart failure: cohort study* | Cohort Study | Main nursing diagnoses:<br>- ineffective breathing pattern and decreased cardiac output.<br><br>Nursing intervention: early assessment at admission.<br><br>Prevention of complications – congestion symptoms management. |
| | Sun et al. (2019)<br><br>*Application of self-care based on full-course individualized health education in patients with chronic heart failure and its influencing factors* | Randomized Controlled Trial | Nursing interventions:<br>- Preparing for homecoming: knowledge about the disease and therapy, diet, and symptom management.<br><br>- Health education as a promoter of *empowerment* and autonomy in disease management. |
| MEANINGFULNESS | Nascimento, Vieira et al. (2019)<br><br>*Aspetos da assistência de enfermagem para pessoa com insuficiência cardíaca* | Retrospective Trial Document Analysis | Nursing diagnoses:<br>- ineffective breathing pattern, decreased cardiac output, deficit in self-care (food, hygiene, elimination, mobility, and sleep), anxiety, and acute pain. |
| | Nascimento, Silva et al. (2019)<br><br>*Diagnósticos de enfermagem para pessoas com insuficiência cardíaca: mapeamento cruzado* | Descriptive Qualitative Study | Nursing diagnoses:<br>- dyspnea, functional dyspnea, fluid, and electrolyte imbalance; compromised sleep; activity intolerance; impaired physical activity pattern; decreased cardiac output, edema, altered heart rate; lack of knowledge about the arrhythmia; lack of knowledge about the response to medication/physical activity/fluid volume. |

## 3. Discussion

The main finding in this review study, as based on the selected studies, is about the needs of the patient with HF and the diagnoses and interventions by nurses. From the research, the interventions of greatest importance for the patient with HF are: effective management of impaired BHN to alleviate symptoms (Ernandes et al., 2019; Nascimento, Silva et al., 2019; Nascimento, Vieira et al., 2019; Pereira et al., 2016; Sousa et al., 2016; Souza et al., 2017) and transitional care from hospital to home, including disease management and health education (Sun et al., 2019; Bose et al., 2016; Ulin et al., 2016).

Nursing diagnoses were formulated based on the patient's symptoms and needs. The most common clinical manifestations were signs of congestion, such as dyspnea and edema, and fatigue. The diagnoses were designed according to these clinical manifestations and their consequences. It appears the most prevalent were decreased cardiac output, ineffective breathing pattern/dyspnea, excessive volume of fluids/edema, activity intolerance, and fatigue. The BHN most compromised is breathing. If a person has dyspnea and other signs and symptoms of congestion, this will compromise other BHNs, such as moving and maintaining a correct posture; this is represented by the diagnoses of activity intolerance, and impaired mobility, fatigue, and poor sleep (Nascimento, Vieira et al., 2019; Pereira et al., 2016; Souza et al., 2017).

Early and detailed assessment–from the time of admission throughout the hospital stay–for the person with HF is essential, so that it is possible to manage the symptoms and effectively address their BHN (Ernandes et al., 2019). Sousa et al. (2016) identify several nursing interventions that make it possible to alleviate symptoms (aligned with nursing diagnoses) in the patients who are hospitalized. If the patient has arrhythmias, controlling vital signs is essential and basic and advanced life support is necessary. In the case of decreased cardiac output, one must monitor for signs of shock and peripheral perfusion, and in the presence of edema, one must assess, for example, the need for fluid restriction, fluid balance and weight surveillance. For the diagnosis of dyspnea and fatigue, the main interventions are related to oxygen management, monitoring signs of hypoxemia, and managing periods of rest and effort. The nurse's intervention should also focus on promoting comfort in the sense of relieving symptoms, such as pain and anxiety (Nascimento, Vieira et al. 2019). Assessment for signs of congestion should be part of determining if the patient's clinical status is appropriate for discharge; further, respiratory symptoms should be investigated, such as orthopnea, paroxysmal nocturnal dyspnea, and pulmonary edema, as well as signs of jugular vein engorgement and the person's functionality and effort tolerance (Nascimento, Silva et al., 2019; Nascimento, Vieira et al., 2019; Sousa et al., 2016).

Individualized information about the health situation of each patient is important and must be explained in language adapted to everyone's understanding. The information should include the typical signs and symptoms suggestive of health status deterioration and worsening, the strategies to be adopted for its monitoring, medication(s) and the importance of therapeutic adherence in maintaining health status, as well as diet and health habits, such as promotion of physical exercise that is right for them (Sun et al., 2019).

Preparation for hospital discharge–transitional care–should begin at the time of patient admission and should take place throughout the entire length of stay. The hospital discharge plan should include the following objectives: to schedule a follow-up appointment (Bose et al., 2016); to ensure therapeutic management; to ensure the person recognizes signs and symptoms of HF; to assess the factors that may have an impact on discharge planning; and to educate the person and to provide the support resources the person can use after discharge (Ulin et al. 2016). In the study by Sun et al. (2019), they revealed health education properly adapted to the patient's/family's learning abilities and their active participation in the care, promoted *empowerment* and independence of patients with HF.

In a systematic review of the literature by Albert (2016), they highlight the importance of nurses preparing for the discharge of patients with HF. Thus, to ensure that information is transmitted, the author recommends the creation of a checklist adopted by the multidisciplinary health team, which must be used by all professionals. This strategy would ensure the transmission of necessary information to promote *empowerment o*f the patient at discharge.

The positive impact of person-centered care and the *empowerment* of patients with HF in the management of their own health condition through the promotion of all BHN is noteworthy (Ulin et al., 2016). A careful assessment of the person, and of the characteristics that can influence the promotion of

independence and *empowerment* (domicile conditions, socioeconomic status, health status, social and family support, learning capacity) defines a starting point for the elaboration of a plan of intervention that responds to the needs of patients and their families and a safe hospital-home transition (Sun et al., 2019). The hospital-home transition can cause some insecurity and anxiety in these patients and for this reason Bose et al. (2016) mention the importance of promoting effective coping strategies for problem-solving and stress and anxiety management, while promoting social interaction.

Ulin et al., (2016) also identified a nursing person-centered care model is essential in helping nurses identify people's concrete needs, and to include individuals in their care plan as active agents of their health-disease process. The nurse's intervention, according to the person-centered care model, begins with the patient history where important information is collected for the identification of nursing diagnoses, and patient motivations, and objectives in view of their health condition, and to make decisions for the nursing intervention (Sun et al., 2019).

Corroborating the studies identified in this research, there is evidence that nursing care focused on the needs of these patients, such as hospital-home transition preparation, educational intervention and follow-up by nurses have a significant positive impact, reducing their readmissions (Ingles, 2020). The systematic reviews conducted by Albert (2016) and Ryan et al. (2019) also highlight the relevance of nursing interventions in this domain, especially through health education and preparation for the discharge of the patient with HF, namely in therapeutic self-management and identification of symptoms, thus promoting their *empowerment*, independence, quality of life, and reducing the risk of readmissions.

The current study has the limitation of being a secondary study, also the possibility that was been missed some relevant studies in the revision because have used just two databases.

## 4. Final Considerations

Nurses' interventions for the hospitalized patient with HF in the acute phase are about aiming to establish clinical stability, responding to their BHN and to prevent other complications. The most prevalent interventions are aligned with nursing diagnoses of decreased cardiac output, ineffective breathing pattern, excessive fluid volume, activity intolerance and self-care deficit. There is a need to develop interventions in the control of anxiety because this disease is a very difficult health situation for the patient and their family. Preparing for discharge is a fundamental intervention, as it aims to enable the patient to manage their health situation, reduce the frequency of hospitalizations and reduce the progression of the disease. Promoting *empowerment* by training the HF patient about pathophysiology, warning signs and symptoms, how to monitor their health status, management of the therapeutic regimen, diet, and physical activity, are important to prepare them for discharge. Researchers highlight the importance of family integration in care planning and training for returning home.

Due to the prevalence of this disease in population and given the problems and complications for the patient and family, nurses need to give greater attention to all the aspects of this problem and invest in educational and monitoring programs for these patients.

Nurses are members of the professional health team who are responsible for helping patients to develop skills to manage their health and disease conditions, like recognizing relevant symptoms, the therapeutic regimen, promoting disease self-management and *empowerment*, thereby reducing readmissions and promoting their well-being.

## 5. References

Albert, N. (2016). A systematic review of transitional-care strategies to reduce rehospitalization in patients with heart failure. *Elsevier*, *45*(2), 100-113. http://dx.doi.org/10.1016/j.hrtlng.2015.12.001

Alpert, C. M., Smith, M. A., Hummel, S. L., & Hummel, E. K. (2017). Symptom burden in heart failure: Assessment, impact on outcomes, and management. *Heart Failure Reviews, 22*(1), 25–39. https://doi.org/10.1007/s10741-016-9581-4

Bettany-Saltikov, J. (2012). *How to do a systematic literatura review in nursing: A step-by-step guide*. McGraw-Hill Education.https://books.google.pt/books?hl=pt-PT&lr=&id=qMkvEAAAQBAJ&oi=fnd&pg=PP1&dq=bettany+saltikov+systematic+review&ots=J3hY5A6E9_&sig=jpbMAftSEYPDsLV4_XPTe8eGhNQ&redir_esc=y#v=onepage&q=bettany%20saltikov%20systematic%20review&f=false

Bose, C., Persson, H., Björling, G., Ljunggren, G., Elfström, M., & Saboonchi, F. (2016). Evaluation of a coping effectiveness training intervention in patients with chronic heart failure–a randomized controlled trial. *European Journal of Cardiovascular Nursing*, *15*(7), 537-548. https://doi.org/10.1177/1474515115625033

Direção Geral de Saúde (2017). Programa nacional para as doenças cérebro-cardiovasculares 2017. Lisboa: Direção Geral da Saúde. Disponível em: http://www.chlc.min-saude.pt/wp-content/uploads/sites/3/2017/10/DGS_PNDCCV_VF.pdf

Ernandes, C., Bernardes, D., Mantovani, V., Pedraza, L., & Rabelo-Silva, E. (2019). Prediction of risk and diagnostic accuracy in patients hospitalized for decompensated heart failure: Cohort study. *Revista gaucha de enfermagem*, *40* (e20180032), 1-7. https://doi.org/10.1590/1983-1447.2019.20180032

Guerra F., Brambatti M., Matassini M., & Capucci, A. (2017). Current therapeutic options for heart failure in elderly patients. *Biomed Research International*, (2017), 1-11. https://doi.org/10.1155/2017/1483873

Joanna Briggs Institute (JBI). (2014). *Reviewers' Manual 2014*. JBI.

Joanna Briggs Institute. (2014). New JBI levels of evidence. Adelaide: JBI.

Nascimento, M., Vieira, N., Aguiar, C., Coelho, M., Félix, N., & Oliveira, C. (2019). Aspectos da assistência de enfermagem para pessoa com insuficiência cardíaca. *Rev. enferm. atenção saúde*, 8 (2),123-134. https://doi.org/10.18554/reas.v8i2.3899

Nascimento, M., Silva, M., Viana, M., Oliveira, C., Martins, A., & Félix, N. (2019). Diagnósticos de enfermagem para pessoas com insuficiência cardíaca: mapeamento cruzado. *Rev enferm UFPE online*, 13 (e240194), 1-8. https://doi.org/10.5205/1981-8963.2019.240194

Panjrath, G., & Ahmed, A. (2017). Diagnosis and management of heart failure in older adults. *Heart Failure Clinics*, *13*(3), 427–444. https://doi.org/10.1016/j.hfc.2017.02.002.

Pereira, J., Flores, P., Figueiredo, L., Arruda, C., Cassiano, K., Vieira, G., ... & Cavalcanti, A. C. D. (2016). Diagnósticos de Enfermagem em Pacientes com Insuficiência Cardíaca Hospitalizados: Estudo Longitudinal. *Revista da Escola de Enfermagem da USP*, *50*(00929-00936). http://dx.doi.org/10.1590/S0080-623420160000700008

Ryan, C; Bierle, R; Karen, V. (2019). The three Rs for preventing heart failure readmission: review, reassess, and reeducate. Critical Care Nurse. *39* (2), 85-93. https://doi.org/10.4037/ccn2019345

Savarese, G., Lund, L. H. (2017). Global Public Health Burden of Heart Failure. Cardiac failure review, 3(1), 7–11. https://doi.org/10.15420/cfr.2016:25:2

Silva-Cardoso, J.; Campelo, M. (2021). *Tratamento da insuficiência cardíaca com função de ejeção reduzida*. In Gil, V. (Coord.), Cardiologia. (1ª Ed. pp. 383-385)Lidel – Edições Técnicas, Lda.

Smeulders, E. S., van Haastregt, J. C., Ambergen, T., Uszko-Lencer, N. H., Janssen-Boyne, J. J., Gorgels, A. P., Stoffers, H. E., Lodewijks-van der Bolt, C. L., van Eijk, J. T., & Kempen, G. I. (2010). Nurse-led self-management group programme for patients with congestive heart failure: randomized controlled trial. *Journal of advanced nursing*, *66*(7), 1487–1499. https://doi.org/10.1111/j.1365-2648.2010.05318.

Souza, L., Ayoub, A., & Cavalcante, A. (2017). Nursing diagnosis for people with heart failure based on the hemodynamic profiles. *International Journal of Nursing Knowledge*, *28*(4), 199-203. https://doi.org/10.1111/2047-3095.12151

Sousa, M., Araújo, A., Freire, M., Oliveira, J. D. S., & Oliveira, S. H. D. S. (2016). Nursing diagnoses and interventions for people with decompensated heart failure. *Revista de Pesquisa: Cuidado é Fundamental Online*, *8*(4), 5025-5031. https://doi.org/10.9789/2175-5361.2016.v8i4.5025-5031

Sun, J., Zhang, Z., Ma, Y., Liu, W., & Wang, C. (2019). Application of self-care based on full-course individualized health education in patients with chronic heart failure and its influencing factors. *World Journal of Clinical Cases*, *7*(16), 2165-2175. https://doi.org/10.12998/wjcc.v7.i16.2165

Stern, C.; Lizarondo, L.; Carrier, J.; Godfrey, C.; Rieger, K.; Salmond, S.; Apóstolo, J.; Kirkpatrick, P.; Loveday, H. (2020). Methodological guidance for the conduct of mixed methods systematic reviews. *JBI Evidence Synthesis*, 18(10), 2108-2118. HTTPS://doi.org/10.11124/JBISRIR-D-19-00169

Ulin, K., Olsson, L., Wolf, A., & Ekman, I. (2016). Person-centred care–An approach that improves the discharge process. *European Journal of Cardiovascular Nursing*, *15*(3),19-26. https://doi.org/10.1177/1474515115569945

Vilas-Boas, F., & Follath, F. (2006). Tratamento atual da insuficiência cardíaca descompensada. *Arquivos Brasileiros de Cardiologia*, *87*(3), 369-377. https://doi.org/10.1590/S0066-782X2006001600022

Zhang, Z., Bai, J., & Huang, Y. (2020). The efficacy of a nursing care and follow-up program for patients with heart failure: Study protocol for a randomized controlled trial. *Medicine*, *99*(49), 1-3. http://doi.org/10.1097/MD.0000000000023380

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