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## Effects of non-pharmacological interventions on the biopsychosocial health of older adults with chronic heart failure in the community setting: a scoping review

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## ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 June 2025 and was last updated on 12 June 2025.

## INTRODUCTION

**Review question / Objective** The general objective of this review is to examine and map the non-pharmacological nursing interventions implemented and evaluated to improve biopsychosocial factors of older adults with CHF living in the community.

In addition, this work had the following specific objectives:

- 1) To know what type of nursing interventions have been applied and evaluated to improve biopsychosocial factors of older adults with CHF
- 2) To establish the characteristics (duration, frequency) of these interventions
- 3) To detect the results reflected in the studies that have implemented and evaluated these interventions.

**Background** Chronic heart failure (CHF) is responsible for approximately 36% of all cardiovascular disease deaths worldwide (Desiderio et al., 2024). It is estimated that CHF

affects around 64.3 million people worldwide (Karaye et al., 2021), and in the case of European countries, it affects close to 2% of the adult population (Sicras-Mainar, 2022). Adults over 60 years of age account for 80% of those affected (Ponikowski et al., 2014). This pathology greatly affects those who suffer from it, including a wide range of symptoms, from the mildest such as occasional fatigue and mild dyspnea to others such as pulmonary congestion and thrombosis (McDonagh, 2022). These symptoms ultimately affect their quality of life (Johansson et al., 2021) and impair their ability to carry out basic daily activities (Niklasson et al., 2022). This ultimately leads to other pathologies such as high blood pressure, dyslipidemia, atrial fibrillation, and kidney failure in most cases (Sicras-Mainar, 2022). Furthermore, it is estimated that, as a result, global healthcare systems allocate enormous amounts of money each year to combat this problem (Osenenko et al., 2022). Because of this, it is necessary to develop and perfect various non-pharmacological interventions focused on the

treatment (Scarà et al., 2024) of this condition in older adult patients in the community setting. CHF is a chronic cardiovascular condition characterized by damage or loss of myocardial cells, increased hemodynamic stress, and structural impairment, with clinical manifestations that include dyspnea and fluid retention. (Wang et al., 2025). CHF in older adults has been associated with decreased functional capacity (Bozkurt et al., 2021) and increased frailty (Austin et al., 2021). Available evidence suggests that CHF is associated with anxiety, depression (Celano et al., 2018), stress, and cognitive decline (Harris et al., 2021). Furthermore, CHF is also associated with unwanted loneliness and loss of social support in older adults (Olano-Lizarraga et al., 2022), which can worsen disease symptoms and contribute to increased healthcare costs (Escobar et al., 2020; Heidenreich et al., 2022).

**Rationale** In general, the first line of treatment for CHF focuses on pharmacological treatment (Bhatt et al., 2024). However, these are not completely effective in relieving CHF symptoms (Felker et al., 2020; Xiang et al., 2022). Furthermore, several sources state that prolonged use of some of the drugs used could be associated with adverse effects that affect the quality of life and functionality of older adults (Marti et al., 2024; Xue et al., 2025). Alternatively, various surgical interventions such as cardiac ablation, valve repair, or coronary bypasses have been implemented (Anker et al., 2024; Zolotarova et al., 2021). These surgeries are reserved for advanced stages of the disease (Rivinius et al., 2023) and are associated with potential risks such as nosocomial infections and immunological reactions (Hirai & Grantham, 2021). For this reason, nurses face the challenge of implementing and evaluating non-pharmacological interventions that contribute to improving the condition of older patients with CHF at a biopsychosocial level.

Nurses are the first line of care for older adults in the community setting (McMenamin et al., 2023). Therefore, it is crucial to know what interventions nurses can implement in this context to improve CHF in older adults (Bernard et al., 2023). To date, several systematic reviews have evaluated the effectiveness of drug use in the treatment of chronic heart failure in older adults (Chen et al., 2024; Das & Niu, 2025; Kang et al., 2020). Literature reviews have also been conducted to evaluate the effectiveness of surgical interventions (Cochran et al., 2022) as well as advanced therapies such as ventricular assist devices (Krzeli et al., 2022). Reviews of non-pharmacological interventions in patients with CHF have been conducted (Borgh-Silva et al., 2021; Huang et al.,

2023; Wefer et al., 2024). Several of these reviews do not focus on the aging population (Molloy et al., 2024; Nick et al., 2021) or are not exclusive to the community setting (Dennis et al., 2024). Thus, the overall objective of this review is to examine and map non-pharmacological nursing interventions implemented and evaluated to improve biopsychosocial factors in older adults with CHF living in the community setting. Reviews of non-pharmacological interventions in patients with CHF have been conducted (Borgh-Silva et al., 2021; Huang et al., 2023; Wefer et al., 2024). Several of these reviews do not focus on the aging population (Molloy et al., 2024; Nick et al., 2021) or are not exclusive to the community setting (Dennis et al., 2024). Thus, the overall objective of this review is to examine and map non-pharmacological nursing interventions implemented and evaluated to improve biopsychosocial factors in older adults with CHF living in the community setting.

## METHODS

**Strategy of data synthesis** To select the studies, a search was conducted between November 2024 and January 2025 using a three-phase process. In the first phase, an initial search was conducted in the following databases: MEDLINE (via PubMed), Cochrane, EMBASE, CINAHL, Web of Science, SCOPUS, and Google Scholar. During this phase, keywords were identified for article titles and abstracts, including terms such as “aged,” “Congestive Heart Failure,” “Community Dwelling,” “Intervention,” “Non-pharmacological,” and related variations of these terms, presented in Table A.1 of the appendix. In the second phase, the natural language from the first phase was combined with MeSH terms associated with the topics, such as “aged,” “Living at home,” and “Cardiac Failure.” For this purpose, the Boolean operators “OR” and “AND” were used, and a search strategy was created. In the third phase, the search strategy was adapted for each database, the one used in Pubmed being the following: ((aged) OR (Elderly) OR (Older adults) OR (Older)) AND ((Congestive Heart Failure) OR (Cardiac Failure) OR (Heart Failure, Congestive) OR (Myocardial Failure)) AND ((Living, Independent) OR (Aging in Place) OR (Community Dwelling) OR (Dwelling, Community) OR (Dwellings, Community) OR (Home Environment\*) OR (Living at home)) AND ((Patient compliance) OR (Patient Cooperation) OR (Patient Adherence) OR (Treatment Compliance) OR (Therapeutic Compliances) OR (Client Adherence) OR (Client Compliance) OR (Exercise) OR (Physical Exercise) OR (Physical Activity) OR (Exercise Training) OR (Exercises) OR (Behavioral) OR (Behaviors) OR (Cognitive Behavioral Therapy) OR

(Behavioral Therapy, Cognitive) OR (Cognitive Behavioral Therapies) OR (Therapies, Cognitive Behavior) OR (Cognition Therapy) OR (Cognitive Therapy) OR (Cognitiv\*) OR (Therapy, Cognitive) OR (nutrition) OR (Nutr\*) OR (Nutrition Policies) OR (Food Policy) OR (Dietary Guideline\*) OR (Guideline, Dietary) OR (Nutrition Guideline\*) OR (Nutraceutical) OR (Non-pharmacological) OR (Rehabilitation) OR (Rehab\*) AND ((Intervention\*) OR (Program\*) OR (Programme\*)).

**Eligibility criteria** Following the JBI methodology, the PCC method (P: participants; C: concept; C: context) was applied to define the inclusion criteria.

**Participants:** Studies with quotas of older adults (>60 years) with CHF.

**Concept:** Studies of non-pharmacological interventions that include physical exercise, nutrition, or behavioral change to improve biopsychosocial factors in older adults with Congestive Heart Failure (CHF).

**Context:** Studies of interventions implemented and evaluated in the home setting.

This review included both qualitative and quantitative studies, as well as mixed studies. Articles in English, Spanish, French, and Portuguese were accepted for inclusion. Studies of interventions not implemented purely in the community setting or with older adults were excluded. Studies of non-pharmacological interventions in community-dwelling older adults with cardiovascular disease that did not present specific outcomes sections for CHF were excluded. Studies with publication dates older than 10 years were excluded.

### Source of evidence screening and selection

After applying the search strategies to the aforementioned databases, the following articles were obtained: PubMed (n = 326), Cochrane (n = 6), EMBASE (n = 75), CINAHL (n = 66), Web of Science (n = 8), SCOPUS (n = 25), and Google Scholar (240), for a total of 746 articles. During the identification phase, articles older than 10 years (n = 275) and duplicates (n = 105) were eliminated. In the screening phase, unrelated articles were eliminated after reading the title and/or abstract (n = 281). In the eligibility phase, two reviewers from the research team (a student and a TFG tutor) reviewed 85 articles. Those articles that could not be obtained (n = 8) were excluded, along with the 61 that did not meet the inclusion criteria.

Ultimately, 16 articles were included in the review. The selection process is reflected in the flowchart.

**Data management** Two researchers collected information from the studies included in the review.

The methodology proposed by JBI was used, taking into account the objectives and research questions of this review. A data table was used with the following categories: author, domain, design, population, objective, responsible for the intervention, intervention, assessments and follow-up, outcome measures, and results. The data extraction methodology was tested on one of the selected articles. The reviewers found no discrepancies in the extracted data nor did they detect any problems in the process. Thus, the reviewers used this methodology to extract information from all articles. Finally, a third reviewer confirmed the accuracy and integrity of the extracted data. A summary of the extracted information is presented in Table 2.1: Results.

**Reporting results / Analysis of the evidence** The results are represented via charts, along with figures representing the screenign process.

**Language restriction** The research will be available in two languages: english and spanish.

**Country(ies) involved** Spain.

**Keywords** Non-pharmacological interventions; Elderly; Chronic heart failure (CHF); Biopsychosocial health; Community setting; Quality of life.

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Author 4 - José Granero Molina - Review of scientific redaction.

Author 5 - Matías Correa Casado - Review of included papers.

Author 6 - María Dolores Ruiz Fernández - Reviewing of the quality assesment.