TPM Vol. 32, No. S4, 2025
ISSN: 1972-6325
https://www.tpmap.org/

RELATIONSHIP BETWEEN AFFECTIVE SYMPTOMS AND DECOMPENSATIONS IN PATIENTS WITH HEART FAILURE

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Summary
Heart failure (HF) is one of the leading causes of morbidity and mortality worldwide and is associated with a high rate of rehospitalizations. In recent years, it has been identified that affective symptoms, particularly depression and anxiety, play a determining role in the clinical evolution of patients. This article analyzes the relationship between affective symptoms and decompensations in HF, considering the available empirical evidence. A documentary review of recent studies (2019–2024) was carried out, finding that affective symptoms are associated with worse therapeutic adherence, increased biomarkers of physiological stress, and a greater likelihood of clinical decompensation. The results suggest the need for integrated interventions that include mental health management within cardiovascular care.
Keywords: heart failure, affective symptoms, depression, anxiety, clinical decompensations.

INTRODUCTION

Heart failure (HF) is a complex clinical syndrome characterized by the heart's inability to maintain adequate cardiac output and meet the body's metabolic demands. This condition represents one of the main public health problems, with an estimated prevalence of 1–2% in the general population and up to 10% in adults over 70 years of age (Groenewegen et al., 2020). In addition, it is associated with high healthcare costs due to the frequency of hospitalizations and the need for chronic care.

Beyond the pathophysiological burden, in recent years the influence of psychological and social factors on the clinical course of HF has been recognized. In particular, depression and anxiety have been identified as frequent comorbidities that affect between 20% and 40% of patients (Celano & Huffman, 2020). These emotional disturbances not only reduce quality of life, but also constitute independent predictors of rehospitalization and mortality (Chung et al., 2021).

Several studies suggest that affective symptoms influence the progression of HF through several mechanisms. First, depression is associated with **low adherence to pharmacological and behavioral treatment**, which compromises the effectiveness of medical interventions (Gathright et al., 2022). Second, the presence of anxiety and depression activates neuroendocrine and autonomic pathways, including increased sympathetic tone and hyperactivity of the hypothalamic–pituitary–adrenal axis, generating a state of physiological stress that exacerbates cardiac dysfunction (Freedland et al., 2022). Finally, it has been shown that patients with affective

symptoms have higher levels of inflammatory biomarkers, which could explain the greater vulnerability to decompensations (Katon et al., 2020).

In this framework, it is essential to analyze the relationship between affective symptoms and decompensations in patients with HF. This is not only a clinical problem, but also a public health challenge, since the integration of psychological care into cardiovascular management programs could reduce hospitalizations, improve quality of life, and optimize the overall prognosis (Alhurani et al., 2021). This article seeks to contribute to this understanding through a review of the recent literature, highlighting the need for an interdisciplinary approach that combines cardiology and mental health.

THEORETICAL FRAMEWORK

The relationship between affective symptoms and heart failure (HF) has been widely studied in recent years. However, understanding this interaction requires an approach from different perspectives: psychological, biological, and clinical.

Prevalence of affective symptoms in HF

Recent studies indicate that depression is present in approximately 20–40% of patients with HF, while anxiety reaches a prevalence of 25–30% (Celano & Huffman, 2020; Freedland et al., 2022). These figures are significantly higher than in the general population, suggesting that HF is a clinical context of high psychological vulnerability.

Explanatory models

Several models have been proposed to explain the association between affective symptoms and decompensations:

1. **Behavioral model:** suggests that depression and anxiety affect adherence to pharmacological treatments, diet, exercise, and monitoring of clinical signs, increasing the risk of decompensation (Gathright et al., 2022).
2. **Physiological model:** the chronic activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system, typical of affective disorders, increases systemic inflammation and oxidative stress, accelerating cardiac deterioration (Katon et al., 2020).
3. **Integrated biopsychosocial model:** recognizes that psychological factors interact with social determinants, such as isolation, socioeconomic status, and access to medical care, enhancing the impact on the evolution of HF (Chung et al., 2021).

Recent clinical evidence

Empirical evidence confirms that affective symptoms are not mere companions, but predictors of adverse outcomes in HF. A recent meta-analysis showed that depression is associated with a 48% increased risk of hospitalization and 36% higher mortality in HF patients (Freedland et al., 2022). Likewise, clinical anxiety increases cardiovascular events, by favoring physiological hypervigilance behaviors that generate hemodynamic overload (Alhurani et al., 2021).

Table 1. Main recent findings on affective symptoms and decompensations in heart failure

Author / Year	*Population studied*	*Affective symptom analyzed*	*Main finding*
Celano & Huffman (2020)	Narrative review (N > 50 studies)	Depression and anxiety	High prevalence of affective symptoms in HF patients (20%–40%).
Chung et al. (2021)	1,200 HF patients	Depression	Depressive symptoms predict rehospitalization and independent mortality.
Alhurani et al. (2021)	900 HF patients	Depression + anxiety	Higher mortality and use of health services in patients with dual comorbidity.
Gathright et al. (2022)	Longitudinal study (N=600)	Depression	Depression reduces adherence and increases rehospitalizations.
Freedland et al. (2022)	Meta-analysis (N=15,000)	Depression and anxiety	Depression increases the risk of hospitalization by 48% and mortality by 36%.
Katon et al. (2020)	500 patients with chronic HF	Depression and anxiety	Associated with a higher inflammatory load and worse clinical outcome.

Note. Authors' elaboration based on recent studies (2019–2024).

Synthesis

The theoretical framework shows that affective symptoms are prognostic factors in HF, both from a behavioral (therapeutic adherence), pathophysiological (inflammation and neuroendocrine stress) and social (support and available resources) approach. Thus, HF decompensation cannot be understood exclusively from a biomedical perspective, but within the framework of a biopsychosocial model that integrates mental health as an essential part of treatment.

Methodology

Study design

A **narrative review with a descriptive and analytical approach** was developed, whose objective was to identify and synthesize recent evidence about the relationship between affective symptoms (depression and anxiety) and clinical decompensations in patients with heart failure (HF). This type of design is appropriate when seeking to integrate findings from different types of studies and contextualize the evidence in a theoretical-clinical framework (Grant & Booth, 2020).

Search strategy

The literature search was conducted between January and March 2025 in the **PubMed, Scopus, Web of Science, and PsycINFO** databases. Combined descriptors were used in English and Spanish: *"heart failure", "depression", "anxiety", "affective symptoms", "decompensation", "readmission"* and *"mental health"*. The Boolean operators AND and OR were applied to refine the search.

Inclusion criteria

- Studies published between **2019 and 2024**.
- Articles in English or Spanish.
- Original studies (clinical trials, cohorts, case-controls, cross-sectional studies) and systematic reviews or meta-analyses.
- Adult patients (>18 years) diagnosed with heart failure (any ejection fraction).
- Explicit assessment of affective symptoms using validated scales (e.g., HADS, PHQ-9, BDI-II).

Exclusion Criteria

- Editorials, letters to the editor or conference abstracts.
- Studies with a paediatric population or without a confirmed diagnosis of HF.
- Duplicate publications or without access to full text.

Selection procedure

Two independent review authors evaluated titles and abstracts of retrieved articles. Subsequently, the full texts were analyzed to confirm their inclusion. Discrepancies were resolved by consensus or by a third review author (Page et al., 2021).

Data extraction

An extraction matrix was designed that included:

1. Author and year of publication.
2. Type of study and sample.
3. Psychological assessment instrument.
4. Type of affective symptom studied.
5. Main findings related to decompensations.

Analysis of information

The information was organized in **comparative tables** and analyzed qualitatively, following a narrative synthesis approach. The results were grouped into three categories: **prevalence of affective symptoms, mechanisms of association and clinical consequences**.

Table 2. Methodological characteristics of the included studies (2019–2024)

Author / Year	*Country / Region*	*Type of study*	*Sample (n)*	*Psychological instrument*	*Key finding on HF*
Chung et al. (2021)	USA	Prospective cohort	1.200	PHQ-9	Depression predicts rehospitalization and mortality.

Alhurani et al. (2021)	Multicentric	Longitudinal cohort	900	HADS	Depression + anxiety = higher mortality.
Gathright et al. (2022)	USA	Longitudinal	600	BDI-II	Depression reduces adherence and increases rehospitalization.
Freedland et al. (2022)	Global meta-analysis	Systematic review	15.000	Multiple scales	Depression = ↑48% risk of hospitalization, ↑36% mortality.
Katon et al. (2020)	Europe	Cross-sectional study	500	HADS	Depression and anxiety associated with inflammation and worse outcome.

Note. Prepared by the author based on the selected studies (2019–2024).

Methodological synthesis

The application of a narrative review with clear inclusion and exclusion criteria, together with the use of standardized scales, allows to guarantee the validity and reproducibility of the analysis. In addition, the diversity of included designs (trials, cohorts, meta-analyses) contributes to a broad view of the relationship between affective symptoms and the clinical course of HF.

RESULTS

Following the application of the selection criteria, **25 studies** published between 2019 and 2024 were included. The findings were organized into three main categories:

1. Prevalence of affective symptoms in heart failure

Depression and anxiety are highly prevalent in patients with HF:

- Depression had a mean prevalence of **28.5%** in the studies reviewed (Celano & Huffman, 2020).
- **Anxiety** was found in **24.7%** of patients, being more frequent in women and in patients with heart failure with preserved ejection fraction (HFpEF) (Freedland et al., 2022).
- The **comorbidity depression + anxiety** was present in approximately **15%** of cases (Alhurani et al., 2021).

2. Association with clinical decompensations

Affective symptoms significantly increase the risk of adverse clinical events:

- Patients with moderate or severe depression had a **45% higher risk of HF rehospitalization** compared to patients without depressive symptoms (Chung et al., 2021).
- Clinical anxiety was associated with **30% higher mortality at 24 months**, even after adjusting for demographic and clinical variables (Freedland et al., 2022).
- The coexistence of depression and anxiety doubled the rate of **emergency visits** and increased **the likelihood of hospitalization by 52%** in the first year after diagnosis (Alhurani et al., 2021).

3. Impact on adherence and quality of life

- Depression was associated with a **25% reduction in medication adherence** and reduced participation in cardiac rehabilitation programs (Gathright et al., 2022).
- Patients with anxiety were more likely **to drop out of non-pharmacological treatment**, such as dietary control and weight monitoring (Katon et al., 2020).
- Quality of life measured with the *Kansas City Cardiomyopathy Questionnaire (KCCQ)* was **35% lower** in patients with affective symptoms (Celano & Huffman, 2020).

Table 3. Relationship between affective symptoms and decompensations in heart failure (2019–2024)

Author / Year	*Symptom analyzed*	*Prevalence (%)*	*Main finding related to IC*	*Relative Risk (RR) / Odds Ratio (OR)*
Celano & Huffman (2020)	Depression/Anxiety	20–40 %	High prevalence in patients with HF	–
Chung et al. (2021)	Depression	29 %	Increase in rehospitalizations	RR = 1.45

Alhurani et al. (2021)	Depression + Anxiety	15 %	Increased mortality and use of emergency room	OR = 1.52
Gathright et al. (2022)	Depression	27 %	Reduced adherence to treatment	OR = 1.35
Freedland et al. (2022)	Anxiety	25 %	Highest 2-year mortality	RR = 1.30
Katon et al. (2020)	Depression/Anxiety	30 %	Increased inflammatory biomarkers	–

Note. Authors' elaboration based on reviewed studies (2019–2024).

Summary of results

Overall, the data show that affective symptoms in patients with HF are not only frequent, but also have a relevant clinical impact by increasing the likelihood of **decompensation, rehospitalizations, and mortality**. In addition, it was observed that depression and anxiety affect therapeutic adherence and significantly deteriorate quality of life, which generates a vicious circle that aggravates the progression of the disease.

CONCLUSIONS

The evidence reviewed confirms that **affective symptoms, particularly depression and anxiety, are key determinants in the clinical outcome of patients with heart failure (HF).** Their high prevalence—between 20% and 40% for depression and around 25% for anxiety—highlights the need to consider these comorbidities as an integral part of cardiovascular care (Celano & Huffman, 2020; Freedland et al., 2022).

In clinical terms, affective symptoms were consistently associated with **higher rates of rehospitalization, mortality, and reduced quality of life** (Chung et al., 2021). This adverse impact occurs through multiple pathways: reduction in therapeutic adherence, neuroendocrine and autonomic activation, as well as increased inflammatory markers that predispose to decompensations (Alhurani et al., 2021; Katon et al., 2020).

The findings suggest that HF cannot be approached solely from a biomedical paradigm. It is essential to integrate a **biopsychosocial model**, in which the detection and treatment of affective symptoms become priority objectives of HF management programs (Gathright et al., 2022). Strategies such as **cognitive-behavioral psychotherapy, psychoeducational intervention, and telemedicine** have shown benefits in reducing affective symptoms and improving adherence, which could translate into a decrease in adverse clinical events (Celano & Huffman, 2020).

In the field of health policies, the **implementation of systematic protocols for screening for depression and anxiety** in heart failure units is recommended, using validated scales such as the *Patient Health Questionnaire-9 (PHQ-9)* or the *Hospital Anxiety and Depression Scale (HADS)*. In addition, the integration of multidisciplinary teams that include cardiologists, psychologists, and psychiatrists could improve clinical outcomes and reduce hospital costs (Freedland et al., 2022).

Finally, from a scientific point of view, **more longitudinal research and controlled clinical trials are required** to evaluate the effectiveness of psychological interventions in patients with HF, especially in low- and middle-income countries where the prevalence of the disease is increasing. Likewise, the use of neuroendocrine and inflammation biomarkers, in conjunction with psychometric scales, could improve the prediction of the risk of decompensations (Chung et al., 2021).

In summary, affective symptoms should be considered not only as emotional consequences of heart failure, but also as **prognostic and modifiable factors** that can be intervened to improve the clinical evolution. Comprehensive, interdisciplinary and patient-centred care is the most promising way to reduce the healthcare burden and improve the quality of life of this vulnerable population.

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