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Therapeutic adherence and somatic symptom perception in patients with heart failure: a scoping review

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ABSTRACT

Heart failure is a chronic condition associated with high morbidity and frequent hospital readmissions, requiring effective self-management strategies. Therapeutic adherence and somatic symptom perception are essential components of self-management, enabling early symptom recognition and timely intervention. However, evidence regarding the relationship between these two factors remains limited. This scoping review aimed to map current evidence on the relationship between therapeutic adherence and somatic symptom perception in patients with heart failure and to identify influencing factors. The review followed the Joanna Briggs Institute methodology and PRISMA-ScR guidelines. Literature searches were conducted in ProQuest, ScienceDirect, Springer, and Google Scholar for studies published between 2016 and 2025. Eligible studies involved adult patients with heart failure and assessed therapeutic adherence and somatic symptom perception using validated instruments. Eight studies were included, comprising four cross-sectional studies, three randomized controlled trials, and one quasi-experimental study. Findings indicated a positive association between adherence to self-care behaviors and improved somatic symptom perception. Patients with consistent symptom monitoring demonstrated better recognition of early deterioration signs. However, a greater symptom burden was associated with lower adherence in several studies. Integrating symptom perception training, motivational strategies, and caregiver involvement may improve adherence, enhance early symptom detection, and reduce hospital readmissions.

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1. INTRODUCTION

Heart failure is a chronic disease that is a global health problem with high morbidity and mortality rates. According to Global Burden of Disease (GBD) data cited by the World Heart Federation (WHF) and recent studies, it is estimated that more than 64 million people worldwide are living with heart failure [1]. Heart failure is also associated with poor quality of life and functional capacity and places a substantial burden on healthcare systems. The prevalence of heart failure will increase as the population ages. Recent projections for the United States indicate an increase in the prevalence of heart failure of approximately 46% from 2012 to 2030, with a corresponding increase in healthcare costs of approximately 127% [2]. In Indonesia, data from the Indonesian Heart Association (PERKI) in 2023 indicates that heart failure is the leading cause of hospitalization in cardiology and has the highest 30-day readmission rate compared to patients with other diagnoses. The hospitalization rate for heart failure patients in the first 5 years is very

high. Data shows that 83.1% of patients experienced at least one hospitalization, and 66.9% of them were even hospitalized more than twice [1], [2].

Heart failure is a progressive clinical condition that requires complex self-care. One of the main challenges in long-term care is the patient's perceived symptom burden, which is scientifically measured using the Heart Failure Somatic Perception Scale. Somatic perception refers to the patient's ability to recognize, perceive, and interpret physical symptoms such as dyspnea, edema, and fatigue [3], [4].

Patients' inability to recognize somatic symptoms early often results in delayed medical attention, increasing the risk of rehospitalization. Recent evidence suggests that somatic perception is significantly influenced by the patient's level of adherence to both pharmacological and non-pharmacological therapies (low-salt diet and fluid restriction). Poor adherence triggers acute exacerbations that exacerbate perceived somatic burden [5]. However, mapping how various dimensions of adherence influence specific somatic perception subscales remains limited. Therefore, a scoping review is needed to map the existing scientific evidence to understand the interaction between adherence behavior and patient's physical perception [3], [4]. This scoping review aims to map scientific evidence regarding the relationship between the level of therapy compliance (medication, diet, and fluids) and somatic perception in heart failure patients, and to identify factors that influence the accuracy of this perception.

2. METHOD

This scoping review followed the methodological framework of the Joanna Briggs Institute (JBI) 2020 and was reported according to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines. The review aimed to map existing evidence on the relationship between therapeutic adherence and somatic symptom perception in patients with heart failure.

2.1. Eligibility criteria

The eligibility criteria were defined using the Population–Concept–Context (PCC) framework. The population included adults (≥18 years) diagnosed with heart failure based on clinical criteria or classifications such as New York Heart Association (NYHA) or ACC/AHA. The concept focused on therapeutic adherence (pharmacological and non-pharmacological, including medication adherence, dietary sodium restriction, fluid management, and physical activity) and somatic symptom perception, particularly measured using instruments such as the Heart Failure Somatic Perception Scale (HFSPS) or similar validated tools. The context included hospital settings, outpatient clinics, cardiac rehabilitation programs, or community/home-based care.

Eligible articles were primary or secondary research studies published between 2016 and 2025 in English or Indonesian with full-text availability. Included study designs comprised observational studies, cross-sectional studies, cohort studies, randomized controlled trials (RCTs), and review studies examining the relationship between adherence and somatic symptom perception. Editorials, commentaries, conference abstracts without full text, non–peer-reviewed publications, duplicate studies, and studies that assessed adherence without evaluating symptom perception were excluded.

2.2. Search strategy and study selection

A systematic search was conducted in ProQuest, ScienceDirect, Springer, and Google Scholar using combinations of keywords related to heart failure, therapy adherence, and somatic symptom perception, structured using Boolean operators. The study selection process consisted of three stages: i) removal of duplicate records, ii) title and abstract screening, and iii) full-text review according to the eligibility criteria. The selection process was documented using the PRISMA-ScR flow diagram.

2.3. Data extraction and quality appraisal

Data were extracted using a structured data charting form adapted from the JBI SUMARI template. Extracted information included author, year, country, study design, participant characteristics, adherence variables, instruments used to assess somatic symptom perception, and key findings relevant to the study objective. Methodological quality was assessed using the JBI Critical Appraisal Tools appropriate to each study design. The appraisal results were used to support the interpretation of the evidence rather than as criteria for exclusion.

2.4. Data synthesis

The extracted data were synthesized using thematic synthesis. The synthesis process involved four stages: i) reviewing and familiarizing with extracted study findings, ii) coding key results related to adherence behaviors and somatic symptom perception, iii) grouping similar codes into broader thematic

categories, and iv) integrating these themes to identify patterns, relationships, and research gaps across studies. This approach enabled the development of an integrative narrative explaining how therapeutic adherence influences symptom perception, self-management behavior, and clinical outcomes among patients with heart failure.

3. RESULTS AND DISCUSSION

3.1. Result

The majority of studies (n = 4) used a cross-sectional design, and (n = 3) a quasi-experimental randomized controlled trial (RCT). The most frequently used adherence instrument was the Self-Care of Heart Failure Index (SCHFI), while somatic perceptions consistently used the 18-item HFSPS. Based on the synthesis of eight included studies (as shown in Table 1 (see Appendix) [4], [6]–[12]). The findings highlight several thematic patterns explaining the relationship between therapeutic adherence and somatic symptom perception in patients with heart failure.

3.1.1. Somatic symptom perception as a driver of self-care and therapeutic adherence

Several studies indicate that patients' perception of physical symptoms plays an important role in motivating self-care behaviors and adherence to treatment. Patients who experience more noticeable or disturbing symptoms tend to engage more consistently in self-care activities. A longitudinal study by Auld *et al.* [8] reported that patients who perceived a higher burden of symptoms demonstrated more consistent self-care behaviors over time. Similarly, Liu *et al.* [10] found that patients with severe physical symptoms such as dyspnea were more likely to improve their self-care management, suggesting that worsening symptoms may act as a catalyst for adherence behaviors. These findings indicate that somatic symptom awareness can stimulate patient engagement in therapeutic adherence and self-management practices.

3.1.2. The role of symptom monitoring in improving self-care response

Symptom monitoring is an essential component of effective heart failure management. Wu *et al.* [4] demonstrated that symptom monitoring mediates the relationship between heart failure knowledge and patients' ability to recognize and respond to symptoms. Patients who actively monitor their symptoms are more capable of identifying early signs of clinical deterioration and responding appropriately. These findings support previous recommendations that symptom perception and monitoring are central elements of self-care in heart failure management [5]. Therefore, improving patients' skills in monitoring and interpreting symptoms may strengthen adherence to treatment and enhance self-management outcomes.

3.1.3. Interventions to improve adherence and symptom perception

Several studies evaluated interventions designed to enhance adherence behaviors and symptom perception. A randomized controlled trial by Caggianelli *et al.* [6] demonstrated that motivational interviewing (MI) significantly reduced the burden of physical symptoms in heart failure patients, particularly when caregivers were actively involved in the intervention. Likewise, the SYMPERHEART intervention proposed by Santos *et al.* [11] aimed to improve patients' ability to perceive and interpret symptoms, enabling earlier healthcare seeking and potentially reducing rehospitalization rates. These findings emphasize that behavioral interventions, patient education, and caregiver involvement are important strategies to improve both adherence and symptom management in heart failure patients.

3.1.4. Factors influencing somatic symptom perception

Somatic symptom perception among heart failure patients is influenced by multiple factors, including clinical, psychological, and socio-demographic characteristics. Luo *et al.* [12] identified depression levels, NYHA functional class, left ventricular ejection fraction, and educational background as significant predictors of symptom perception. In addition, the study in [7] reported significant international differences in symptom burden among heart failure patients, suggesting that cultural and healthcare system factors may influence symptom perception and reporting. Symptom severity has also been associated with poorer health-related quality of life among heart failure patients, emphasizing the importance of effective symptom management strategies [9].

3.2. Summary of findings

Overall, the evidence suggests a reciprocal relationship between therapeutic adherence and somatic symptom perception. Increased symptom awareness can encourage self-care behaviors and adherence to treatment, while improved adherence and self-management strategies may reduce symptom burden and improve patient outcomes. Furthermore, targeted interventions and supportive factors such as education,

caregiver involvement, and psychological support are essential to optimize both adherence and symptom perception in heart failure management.

Synthesized results from various studies [4], [6], [11], [12] indicate that heart failure management is a dynamic process that relies heavily on the patient's cognitive and behavioral abilities and caregiver support. Collectively, this literature confirms that knowledge about the disease is a key foundation, but it is insufficient without a keen ability to perceive symptoms. Modern interventions are shifting from simply providing medical information to behavioral approaches, such as motivational interviewing and informal caregiver engagement (as in the SYMPERHEART protocol), to ensure that patients not only know what to do but are also motivated and able to detect even the smallest physical changes before they escalate into a clinical crisis [13].

Optimal therapy adherence is directly proportional to the patient's ability to manage their somatic perceptions. The HFSPS has been shown to be an effective screening tool for nurses to detect potential patient nonadherence. Successful heart failure management rests not only on the appropriateness of medical therapy, but also on the critical interaction between knowledge, adherence behaviors, and the acuity of somatic perceptions. There is a clear linear relationship where adherence behaviors such as regular self-monitoring act as a means for patients to cultivate their body awareness. When patients adhere to self-monitoring, they gradually develop body literacy that allows them to recognize exacerbation symptoms earlier. However, this perception is often disrupted by internal barriers such as heavy symptom burden, anxiety, and cognitive decline, which, if not intervened, will break the cycle of self-care and worsen the patient's prognosis [14].

Symptom recognition education is crucial for heart failure patients to improve adherence and prevent rehospitalization. Healthcare workers, particularly nurses, should focus on symptom perception training rather than simply providing passive education. Patients need to be taught how to differentiate heart failure symptoms from other comorbidities to ensure targeted responses. Family Involvement, as outlined in the SYMPERHEART protocol, requires dyadic interventions (involving caregivers). Families should be empowered as second observers to assist patients with perceptual or cognitive limitations in detecting warning signs. Psychological approach: The use of techniques such as motivational interviewing (MI) is highly recommended to improve adherence. By increasing internal motivation, patients will be more consistent in their monitoring behavior, ultimately strengthening the quality of their somatic perception. Healthcare policies require a continuous follow-up system to monitor patient symptom patterns over time, allowing interventions to be dynamically adjusted to dynamic changes in the patient's physical condition [11], [15], [16].

3.3. Discussion

Patients with heart failure frequently report inadequate self-care behaviors. Physical symptoms can impact a patient's ability to perform self-care behaviors. However, studies investigating the relationship between physical symptoms and self-care behaviors in heart failure patients have yielded inconsistent findings, likely due to variations in the determinants of self-care behaviors among patients with different levels of self-care ability. Understanding the relationship between physical symptoms and self-care behaviors in heart failure patients with inadequate self-care behaviors may improve care for this subpopulation [14], [17]–[19].

Heart failure patients identified as having inadequate self-care behaviors were studied, with the aim of analyzing the relationship between their physical symptoms and their level of adherence to self-care behaviors [20]–[23]. The study revealed that more severe and frequent physical symptoms, such as shortness of breath, fatigue, and edema were significantly associated with poorer self-care behaviors in this patient group. These findings confirm that high symptom burden can be a significant barrier for patients to implement self-care recommendations, such as monitoring symptoms, following a low-salt diet, and engaging in physical activity as directed. This study highlights the importance for healthcare professionals to effectively proactively assessing and managing the physical symptoms of heart failure patients as an integral part of a strategy to increase their engagement and adherence to self-care practices, ultimately aiming to improve patients' quality of life and clinical outcomes [10], [24].

The next finding is the dynamic and complex relationship between heart failure symptom patterns and patients' self-care behaviors. This study found that patients not only respond to acute symptoms but also develop and adjust their self-care behaviors based on their symptom patterns over time, whether they are stable, worsening, or fluctuating [25], [26]. Specifically, worsening or highly fluctuating symptom patterns tend to be associated with more intense and frequent self-care efforts, but do not necessarily guarantee more effective behaviors. These findings suggest that patients' symptom experiences are unique and evolving, and that self-care assessments, interventions, and adherence should not be static but should adapt to the

individual's symptomatic course over time. Continuous monitoring and a personalized approach support patients in modifying and maintaining optimal self-care behaviors as their symptoms change [4], [8].

A motivational interviewing (MI) intervention has been shown to be effective in not only improving self-care behaviors and adherence but also significantly reducing physical symptom burden in heart failure patients over a one-year period. A relatively short MI program consisting of one face-to-face session and three follow-up phone calls can produce clinically meaningful improvements. The group of patients receiving MI experienced a reduction in symptoms, particularly chest discomfort and shortness of breath (dyspnea), compared with the group receiving standard care alone. The greatest and most consistent benefits were seen when the intervention actively involved patient caregivers, with this group showing significant improvements in overall total physical symptom burden scores [27], [28]. These findings strengthen the evidence that collaborative communication approaches like MI, which empower patients and engage their support systems, are practical and impactful intervention strategies. to improve the quality of life of patients by reducing debilitating symptoms [6], [7].

A previous study we discussed [8] also showed that patients with fluctuating symptom patterns tended to engage more intensively in self-monitoring, which may be a natural adaptation [29], [30]. Furthermore, interventions like Motivational Interviewing that successfully increased patient engagement (as in the Caggianelli *et al*. [6]) likely work by strengthening motivation for consistent symptom monitoring [4].

Evidence suggests that therapeutic adherence is not simply about medication adherence, but is a key factor in stabilizing a patient's hemodynamic status, ensuring that somatic perception remains within the normal range [31], [32]. These results address the review's objective: a linear relationship exists between self-management behaviors and the quality of physical sensory perception in heart failure patients. A limitation lies in the use of self-report data for adherence data, which is susceptible to recall bias. The main findings from these studies consistently demonstrate a positive linear relationship between adherence behaviors (such as self-care) and the quality of somatic perception in heart failure patients. Patients who are more compliant with daily monitoring, such as weighing and checking for edema, tend to have a higher perceptual sensitivity to changes in their body condition [33], [34]. Theoretically, adherence to self-care behaviors serves as a feedback mechanism; the more routinely patients monitor, the better they are at recognizing their unique symptom patterns (symptom recognition). This addresses the study's objective: increased knowledge and behavioral adherence directly strengthen somatic perception abilities, which in turn accelerate decision-making to seek medical help (symptom response) and improve overall quality of life [13], [35], [36].

However, there are significant barriers and limitations that need to be addressed in achieving optimal outcomes. The main barrier identified in cross-sectional studies, such as those by [10], [12], is the excessive burden of physical symptoms can actually hamper patients' ability to perform self-care. Furthermore, psychological factors such as depression and anxiety, as well as cognitive limitations in elderly patients, often hinder accurate somatic perception. Methodological limitations in the current literature are also evident in the predominance of cross-sectional study designs, which cannot elucidate long-term cause-and-effect relationships. Furthermore, many studies are local in nature with ethnically diverse samples, thus limiting the generalizability of the results to global populations with diverse social support systems. Therefore, the involvement of informal caregivers and a more personalized psychological intervention approach are key recommendations to address these barriers [12], [13].

This scoping review mapped current evidence regarding the relationship between therapeutic adherence and somatic symptom perception in patients with heart failure. The findings indicate that these two components are closely interconnected and play an essential role in supporting effective self-management among heart failure patients. The results also highlight that symptom perception not only reflects disease severity but also functions as an important behavioral trigger influencing adherence to therapeutic recommendations and self-care practices.

The relationship between symptom perception and self-care behaviors can be understood through the situation-specific theory of heart failure self-care, which emphasizes that symptom monitoring, symptom recognition, and symptom response are central processes in patient self-management [5]. According to this theoretical framework, patients who can accurately perceive and interpret their symptoms are more likely to take appropriate self-care actions, such as adhering to medication, managing fluid intake, and seeking timely medical assistance. The findings of this review support this concept, as patients who reported higher symptom awareness tended to demonstrate better engagement in self-care behaviors and therapeutic adherence [8], [10].

In addition, symptom monitoring plays a mediating role between patient knowledge and symptom management. Patients who actively monitor their symptoms are more capable of recognizing early signs of clinical deterioration and responding appropriately [4]. This highlights that knowledge alone may not be sufficient to improve self-care behaviors; patients must also develop practical skills in symptom monitoring and interpretation. Therefore, educational interventions for heart failure patients should focus not only on disease knowledge but also on strengthening symptom recognition and decision-making skills.

Another important finding is the effectiveness of behavioral and supportive interventions in improving both symptom perception and adherence. Interventions such as motivational interviewing and caregiver-supported programs have been shown to reduce symptom burden and improve patient engagement in self-care behaviors [6], [11]. These findings align with previous studies emphasizing the role of social support and patient–caregiver collaboration in improving adherence and long-term disease management [13]. Caregiver involvement may enhance patients' confidence in interpreting symptoms and facilitate timely healthcare utilization.

This review also highlights that somatic symptom perception is influenced by multiple factors, including clinical severity, psychological conditions, and socio-demographic characteristics. Depression, functional status, and educational level have been identified as significant predictors of symptom perception among heart failure patients [12]. These findings suggest that symptom perception is not solely a physiological phenomenon but is also shaped by psychological and social contexts. Consequently, comprehensive heart failure management should incorporate psychosocial assessment and support in addition to standard medical treatment.

From a health policy and healthcare system perspective, the findings of this review emphasize the importance of integrating symptom monitoring and self-care support into routine heart failure management programs. Healthcare systems should prioritize structured patient education programs, discharge planning, and community-based follow-up to strengthen patient adherence and symptom recognition [37], [38]. Early recognition of worsening symptoms may reduce preventable hospital readmissions and improve patient outcomes, which is a key goal in heart failure management strategies worldwide [1], [2].

Furthermore, policymakers should consider strengthening community-based heart failure management programs that involve multidisciplinary teams, including nurses, physicians, and caregivers. Nurses, in particular, play a critical role in educating patients about symptom monitoring and supporting self-care behaviors in both hospital and community settings. Strengthening these programs may help bridge the gap between clinical treatment and long-term disease management at home [37], [38].

Overall, the findings of this review suggest that therapeutic adherence and somatic symptom perception are interdependent elements of heart failure self-management. Strengthening patient education, behavioral interventions, and caregiver involvement may improve patients' ability to recognize symptoms and adhere to treatment recommendations. Integrating these strategies into healthcare systems and policies could contribute to improved clinical outcomes and reduced healthcare burden associated with heart failure.

3.4. Strengths and weaknesses

A key strength of this collection of studies is the uniformity of measurement constructs, particularly the consistent use of the HFSPS to assess somatic perception. This allows for cross-study comparisons and strengthens the validity of the findings. Furthermore, the diversity of study designs, including RCTs, cross-sectional studies, and quasi-experimental studies, provides a comprehensive perspective, ranging from correlational to causal interventions. These studies have also identified critical mediating and moderating factors, such as caregiver role, depression level, and symptom patterns, deepening understanding of the complex relationship between adherence and somatic perception. Findings regarding the effectiveness of behavioral interventions such as motivational interviewing (MI) and the SYMPERHEART protocol provide valuable applicability evidence for clinical practice [17], [24].

A fundamental weakness lies in the predominance of cross-sectional designs in most studies. This design can only describe relationships or correlations at a single point in time, making it incapable of establishing long-term causality or explaining the dynamics of change over time. Adherence measurement methods, which rely largely on self-report, are also susceptible to biases, such as recall bias and social desirability bias, which can reduce data accuracy. Furthermore, limited generalizability is a significant issue because many studies were conducted in specific cultural and health system contexts (such as the US, China, or Australia) with homogeneous samples. Therefore, findings may not be fully applicable to global populations with different sociodemographic characteristics and support systems [17], [24].

4. CONCLUSION

This scoping review demonstrates that therapeutic adherence and somatic symptom perception are closely interconnected in the self-management of patients with heart failure. Patients who consistently engage in adherence behaviors, particularly symptom monitoring, tend to develop greater awareness of bodily changes and recognize early signs of clinical deterioration. Conversely, poor adherence and high symptom burden may impair symptom recognition and delay appropriate responses.

The main contribution of this review is the synthesis of current evidence showing that strengthening symptom perception should be considered an integral component of adherence-based interventions in heart

failure management. For nursing and clinical practice, the findings highlight the importance of integrating symptom monitoring education, patient engagement strategies, and caregiver involvement into routine care to improve early symptom recognition and self-care behaviors. Future research should focus on developing and evaluating integrated interventions that simultaneously address adherence and symptom perception across diverse healthcare settings.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
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Fo : **Fo**rmal analysis
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D : **D**ata Curation
O : Writing - **O**riginal Draft
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Vi : **Vi**sualization
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P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest regarding the publication of this paper. The research was conducted in the absence of any commercial, financial, or personal relationships that could be construed as a potential conflict of interest.

INFORMED CONSENT

Informed consent was obtained from all participants involved in this study prior to data collection. Participants were informed about the objectives, procedures, potential benefits, and confidentiality of the research, and their participation was entirely voluntary.

ETHICAL APPROVAL

Ethical approval was not required for this study because the research employed a scoping review methodology using data obtained from previously published literature and publicly accessible sources. Therefore, no direct involvement of human participants or animals was included in this study.

DATA AVAILABILITY

Data availability is not applicable to this study because the research employed a scoping review methodology using previously published articles and publicly accessible sources. No new primary data were created or analyzed in this study.

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APPENDIX

Table 1. Thematic synthesis results

No	Title	Author and year	Country	Design study	Sample (n)	Compliance instruments	Somatic perception instrument	Conclusion
1	Heart failure knowledge, symptom perception, and symptom management in patients with heart failure	Wu *et al*. 2023 [4]	Lexington, KY	Cross-sectional study	185	Self-care of HF index.	Symptom monitoring, symptom recognition, and symptom response were measured. Situation-Specific Theory of Heart Failure Self-Care.16 The SCHFI	In conclusion, symptom monitoring is associated with symptom recognition and symptom response, and is a mediator between heart failure knowledge and symptom recognition, and between heart failure knowledge and symptom response. These findings suggest that it is important for clinicians not only to teach/emphasize to patients with heart failure the importance of symptom monitoring/recognition, but also to improve/practice symptom monitoring and symptom recognition skills and promote symptom monitoring among patients to improve symptom response in self-care interventions/training.
2	A motivational interviewing intervention improves physical symptoms in patients with heart failure: a secondary outcome analysis of the motivate-HF randomized controlled trial	Caggianelli *et al*. 2022 [6]	Melbourne, Australia	Randomized controlled trial	510	MOTIVATE-HF	Heart Failure Somatic Perception Scale (HFSPS)	Motivational interviewing (MI) reduces the burden of physical symptoms of heart failure, especially when caregivers are involved in the intervention.

Table 1. Thematic synthesis results (continued)

No	Title	Author and year	Country	Design study	Sample (n)	Compliance instruments	Somatic perception instrument	Conclusion
3	International comparison of physical symptom burden among adults with heart failure	Lee *et al*. 2018 [7]	United States of America	Cross-sectional study	187	Demographic and clinical data were collected through self-report and/or medical record extraction.	Heart Failure Somatic Perception Scale (HFSPS)	There are striking differences in the burden of physical symptoms experienced by adults living in Spain, Italy, and the US even after adjusting for important demographic and clinical characteristics, culture, and language, as well as other treatment and health system differences that influence heart failure symptoms in international studies.
4	Patterns of heart failure symptoms are associated with self care behaviors over 6 months	Auld *et al*. 2018 [8]	United States	RCT	146	Self-care in HF Index)	HF Somatic Perception, Epworth Sleepiness Scales	Patients who were more bothered by symptoms consistently engaged in more self-care behaviors. These findings support symptoms as an important driver of self-care behaviors.
5	Symptom perception, health-related quality of life and predicted survival in heart failure patients	D'Souza *et al.* 2024 [9]	Delhi, India	RCT	160	HRQoL	Heart Failure Somatic Perception Scale to assess symptom perception	Patients with heart failure experience persistent symptoms and poor health-related quality of life (HRQoL). Symptom severity decreases HRQoL. Understanding HRQoL and symptom perception is crucial for developing effective self-care interventions, which are crucial for improving patient outcomes and effectively managing heart failure.
6	The association between physical symptoms and self-care behaviours in heart failure patients with inadequate self-care behaviours: a cross-sectional study	Liu *et al*. 2023 [10]	China	A cross-sectional study	189	Self-care of Heart Failure Index (SCHFI v.6.2),	Physical symptoms were measured using the Heart Failure Somatic Perception Scale	Patients with heart failure (HF) who experience poor self-care experience more symptoms of shortness of breath. Severe physical symptoms of HF may be a catalyst for improved self-care management in patients with inadequate self-care behaviors. Therefore, effective care and support should be provided when physical symptoms worsen to facilitate patient engagement in self-care behaviors in this subpopulation.
7	SYMPERHEART: an intervention to support symptom perception in persons with heart failure and their informal caregiver: a feasibility quasi-experimental study protocol	Santos *et al*. 2021 [11]	Switzerland	Quasi-experimental	30	HF self- care (via the self-care of Heart Failure Index	HF symptom perception subscale (SCHFI Heart Failure Somatic Perception Scale, HFSPS	By improving symptom perception, patients may seek medical help earlier (before a critical condition occurs). This is expected to: 1. Reduce rehospitalization rates. 2. Improve the quality of life of patients and caregivers. 3. Reduce the psychological burden on informal caregivers because they feel more competent in helping patients.

Table 1. Thematic synthesis results (continued)

No	Title	Author and year	Country	Design study	Sample (n)	Compliance instruments	Somatic perception instrument	Conclusion
8	Symptom perception and influencing factors in Chinese patients with heart failure: a preliminary exploration	Luo *et al*. 2020 [12]	China	A cross-sectional descriptive correlational study	208	The Patient Health Questionnaire (PHQ-8) The Patient-Reported Outcomes Measurement Information System (PROMIS)	The heart failure somatic perception scale v.3 (HFSPS)	Depression levels, New York Heart Association functional class, left ventricular ejection fraction, and educational background were identified as independent factors influencing symptom perception in Chinese heart failure patients. Heart failure patients' symptom perception is influenced by personal, psychological, and physiological factors. Health policies and healthcare providers should pay greater attention to and deepen their understanding of Chinese heart failure patients to provide better healthcare.

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