

Original Article

Key factors associated with self-care among patients with heart failure: A scoping review of cross-sectional studies

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Abstract

Heart failure is a life-threatening condition with increasing prevalence and mortality rate worldwide, often resulting in frequent hospitalizations and reduced quality of life. Effective self-care behaviors are essential for minimizing adverse health effects among patients with heart failure. The aim of this study was to identify and synthesize factors influencing self-care among individuals with heart failure. Articles published in English between 2017 and 2022 were retrieved from Google Scholar, PubMed, and ScienceDirect using predefined Boolean search terms, including 'self-care', 'factors', 'influence', 'heart failure patients', and 'cross-sectional study'. Of 740 records screened, 21 studies met the inclusion criteria. The identified factors were thematically categorized into sociodemographic, psychological, cognitive, and social domains. Sociodemographic factors (age, education, marital status, and New York Heart Association (NYHA) class), health literacy, self-efficacy, depression, and family support were consistently identified as critical determinants. Self-efficacy emerged as a central factor, influencing the relationship between depression and knowledge of self-care performance. Family support proved to be a significant facilitator of effective self-care. These findings suggest that multiple interrelated factors contribute to suboptimal self-care among patients with heart failure. Addressing these determinants may inform the development of effective, culturally sensitive self-care interventions and guide nursing practice and health policy aimed at improving heart failure management.

Keywords: Heart failure, self-care, determinants, self-efficacy, family support

Introduction

Heart failure is a major global health concern due to its increasing prevalence and substantial negative effects on morbidity and mortality [1]. It is estimated to affect approximately 64.3 million individuals worldwide [2]. The annual incidence of heart failure varies between 0.1 %, 0.9 %, and 6.7 % in Europe, the United States, and Asia [3,4]. Heart failure significantly impairs patients' quality of life and is associated with high rates of rehospitalization and mortality [5]. Inadequate patient self-care behaviors further contribute to poor clinical outcomes, including reduced quality of life, increased rehospitalization, and premature death among patients with heart failure [6]. Consequently, effective self-care practices are essential for mitigating adverse health outcomes and improving long-term disease management in this population [7].

Self-care has been found to reduce mortality, prevent hospital readmissions, and improve quality of life among individuals with heart failure, and it is a crucial part of a multidisciplinary



disease management program [8,9]. Adequate engagement in self-care behaviors is essential for maintaining a high quality of life and avoiding hospitalization [10]. In the context of heart failure, self-care encompasses behaviors that support symptom monitoring, symptom recognition, and maintenance of physiological stability [11]. Inadequate self-care among patients with heart failure is impacted by multiple factors, including limited knowledge and insufficient access to self-care information [12]. Understanding the factors that contribute to self-care behaviors can serve as a foundation for developing culturally relevant and effective strategies to support long-term disease management and control in patients with heart failure [13].

Despite numerous studies investigating factors affecting self-care in heart failure, synthesis of recent evidence grounded in a clear theoretical framework remains limited. This review adopts Riegel's Middle-Range Theory of Self-Care in Chronic Illness (2012) as a guiding framework, emphasizing self-care maintenance, monitoring, and management [14]. The scoping review approach enables the systematic mapping and categorization of determinants influencing self-care among individuals with heart failure, thereby providing direction for the development of future interventions. Therefore, the aim of this study was to identify and synthesize factors affecting self-care in patients with heart failure.

Methods

Review framework and protocol registration

A review protocol was developed before the search, following the frameworks from preferred reporting items for systematic reviews and meta-analyses extension for scoping reviews (PRISMA-ScR) and Joanna Briggs Institute (JBI). The protocol included the search strategy, eligibility criteria, screening procedures, and data extraction plan. The protocol was retrospectively registered with the Open Science Framework (OSF) and is available at: <https://osf.io/tk2uz/overview>.

Databases and search strategy

A systematic search was conducted in PubMed, ScienceDirect, and Google Scholar to identify relevant studies published between January 2017 and December 2022. The search was limited to English-language articles and was conducted on January 15, 2023, by RAV and KRP. The search strategy used combinations of the following keywords and Boolean operators: "self-care", "heart failure", "factors", "influence", and "determinants". Complete search strings for each database are provided in **Table 1**.

Table 1. Search strings used to identify eligible studies across databases

Database	Search strategy
Google Scholar	"self-care" AND "heart failure" AND (factors OR determinants OR influence) AND "cross-sectional" AND 2017-2022
PubMed	("self care"[MeSH Terms] OR "self-care"[Title/Abstract]) AND ("heart failure"[MeSH Terms] OR "heart failure"[Title/Abstract]) AND ("factors"[Title/Abstract] OR "determinants"[Title/Abstract] OR "influence"[Title/Abstract]) AND ("cross-sectional studies"[MeSH Terms] OR "cross-sectional"[Title/Abstract]) AND ("2017/01/01"[Date - Publication] : "2022/12/31"[Date - Publication])
ScienceDirect	("self-care" AND "heart failure" AND (factors OR determinants OR influence) AND "cross-sectional") AND pub-date > 2016 AND pub-date < 2023

Eligibility criteria

Eligibility criteria were defined using a modified population, intervention, comparison, outcomes, and study design (PICOS) framework. Studies were included if they involved adults diagnosed with heart failure and examined factors influencing self-care, including behavioral, adherence, knowledge, literacy, or psychological determinants. Eligible studies reported factors associated with self-care in heart failure, employed a cross-sectional observational design, were published in English as peer-reviewed full-text articles, and were published between January 1, 2017, and December 31, 2022. Studies were excluded if they involved patients with comorbid conditions such as diabetes or chronic obstructive pulmonary disease (COPD), caregivers of

patients with stroke, or employed experimental, quasi-experimental, mixed-methods, or review designs. Opinions, editorials, conference abstracts, and grey literature were also excluded. Additionally, studies that did not report self-care outcomes specific to heart failure were also excluded.

Study selection process

All retrieved records were exported into EndNote 20 (version 20.1), and duplicates were removed through both automatic and manual checks. Study screening was conducted in three stages: title and abstract screening performed independently by two reviewers (HW and AH), followed by full-text assessment based on the eligibility criteria. Any discrepancies between the reviewers were resolved through discussion or consultation with a third reviewer (KRP).

Data extraction

Data extraction was performed using a standardized form designed to capture key study characteristics and findings. The extracted variables included the author and year of publication, study design, country, main findings related to factors influencing self-care among patients with heart failure, and the categorization of each factor into conceptual domains. Two reviewers (HW and AH) independently extracted the data, and any differences were resolved through consensus.

Data synthesis

A descriptive thematic synthesis was conducted to organize and interpret the findings from the included studies. The extracted data, consisting of each study's main findings and the corresponding category of influencing factors, were reviewed and coded manually using an inductive approach. Similar factors were grouped and classified into four domains that reflected the patterns observed in the extracted data: sociodemographic, psychological, cognitive, and social factors. These domains were derived directly from the categories reported in the included studies. During the synthesis process, studies with similar statistical conclusions were examined together to determine whether they consistently supported the same type of influencing factor. The recurrence of similar statistical results across multiple studies strengthened the justification for grouping these findings into shared domains. This consistency informed the thematic decision-making process, ensuring that each domain reflected robust and repeatedly observed evidence. Given that the included studies employed cross-sectional designs and exhibited substantial heterogeneity in populations, measurement instruments, and analytical methods, a meta-analysis was not performed.

Results

Search results

The database search identified a total of 740 records from PubMed, ScienceDirect, and Google Scholar. After removal of 38 duplicates, 702 records remained for title and abstract screening, of which 603 articles were excluded for not meeting the eligibility criteria. The full texts of 99 articles were subsequently assessed for eligibility, and 78 were excluded due to ineligible populations, non-heart failure self-care outcomes, or study designs that did not meet the inclusion criteria. Ultimately, 21 cross-sectional studies fulfilled all eligibility criteria and were included in this review. The study selection process is presented in **Figure 1**.

Characteristics of included studies

Twenty-one included studies were conducted across multiple regions, including Asia (China [15-17], South Korea [18], Singapore [18], Indonesia [19-21], Iran [22], Japan [23], Nepal [13]), Africa (Ethiopia [24-28]), North America (the United States [29-32]), and South America (Brazil [33]). A total of 3,919 patients with heart failure were included across the 21 studies. All studies employed cross-sectional designs, were published between 2017 and 2022, and examined factors associated with self-care among adult patients with heart failure.

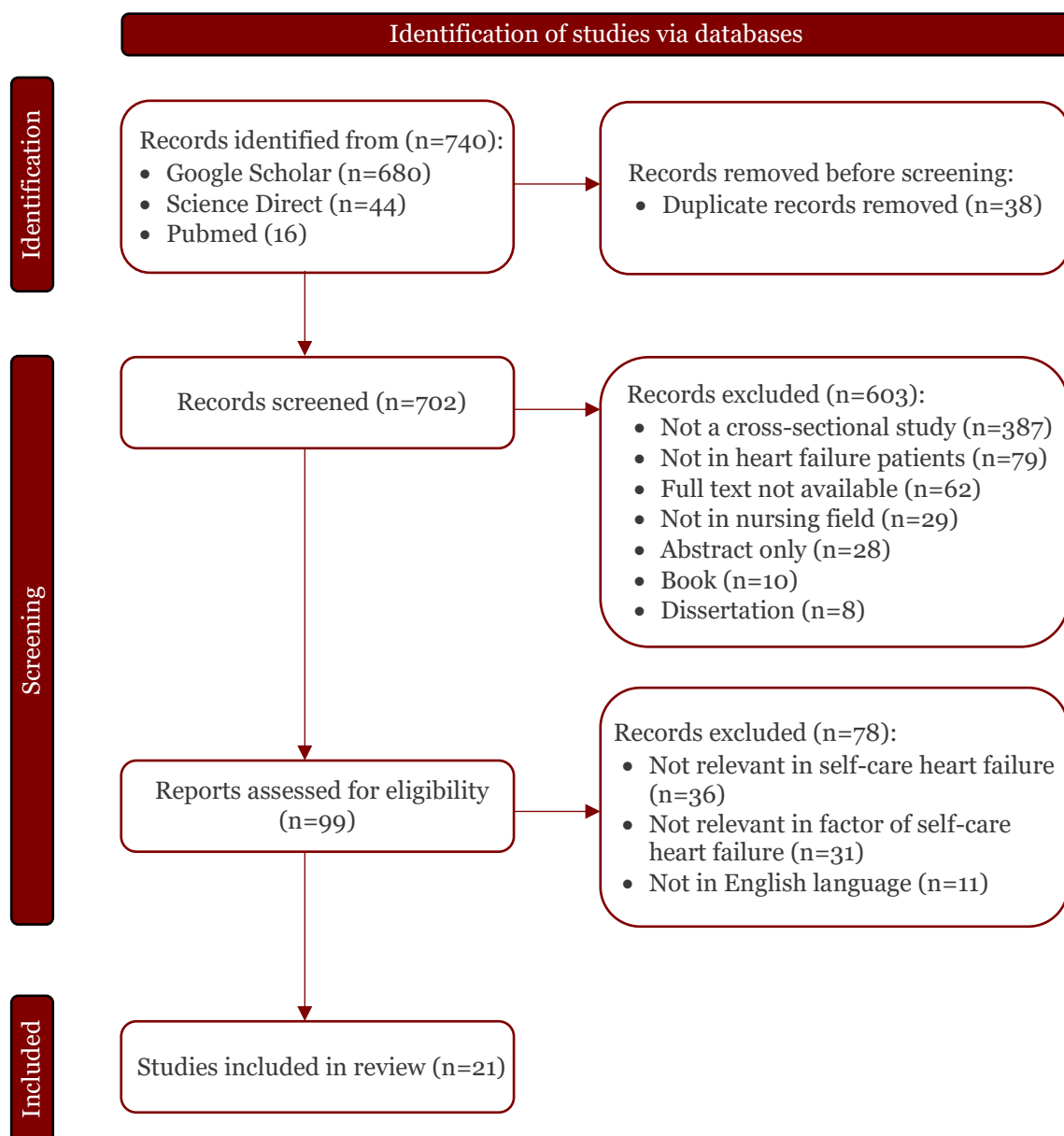


Figure 1. Flowchart of article selection process using PRISMA-ScR.

Factors associated with self-care

Sociodemographic factors

Sociodemographic determinants were the most commonly reported (**Table 2**). Factors such as age [27,28,32,33], sex [16,24,25,32,33], comorbidity [24], marital status [32,33], education level [13,22,27,32,33], ethnicity [13,32], New York Heart Association (NYHA) functional class [13,26-28], duration of heart failure [19,26,27], and prior receipt of heart failure information [18,19,22] were associated with variations in self-care behaviors. Findings from Nepal [13], Brazil [33], Singapore [18], Indonesia [19], Ethiopia [24-28], China [16], Iran [22] and the United States [32] showed that lower education, advanced NYHA class, and shorter illness duration were consistently linked to poorer self-care. Several studies also identified sex-specific differences in self-care performance.

Table 2. Findings from cross-sectional studies on factors associated with self-care among heart failure patients

Author	Country	Instrument used	Associated factors	Domain(s)
Koirala <i>et al.</i> (2018) [13]	Nepal	SCHFI; ESSI	Self-care was associated with education level, ethnicity, living arrangement, NYHA class, and family support.	Sociodemographic; social
Cavalcante <i>et al.</i> (2018) [33]	Brazil	EAAPIC	Self-care was associated with sex, age, education level, and marital status.	Sociodemographic
Hany <i>et al.</i> 2021 [19]	Indonesia	SCHFI V6.2	Self-care was associated with education level, heart failure duration, and prior heart failure information.	Sociodemographic
Seid <i>et al.</i> (2019) [24]	Ethiopia	Revised Heart Failure Compliance Scale; Japanese Heart Failure Knowledge Scale	Self-care was associated with sex, comorbidity, and heart failure knowledge.	Sociodemographic; cognitive
Son <i>et al.</i> (2018) [34]	South Korea	EHFScBS-9; Health Literacy Scale	Self-care was associated with health literacy.	Cognitive
Chen <i>et al.</i> (2020) [29]	The United States (Pennsylvania)	S-TOFHLA; SCHFI V6.2; PHQ-9	Self-care was associated with self-efficacy and depression; self-efficacy mediated the effect of depression on self-care.	Psychological
Zeng <i>et al.</i> (2017) [18]	Singapore	DHFKS	Self-care was associated with heart failure knowledge and prior heart failure education.	Sociodemographic; cognitive
Yazew <i>et al.</i> (2019) [25]	Ethiopia	PHQ-9; EHFScBS; DHFKS; Mini Social Support screening tool	Self-care was associated with depression, sex, smoking, social support, and heart failure knowledge.	Psychological; cognitive; social
Fivecoat <i>et al.</i> (2018) [30]	Unites States of America	MSPSS; SCHFI V6.2	Self-care was associated with emotional and instrumental family support.	Social
Hudiyawati <i>et al.</i> (2021) [20]	Indonesia	EHFScBS-9; Cardiac Self-Efficacy Scale; MSPSS	Self-care was associated with self-efficacy and family support.	Psychological; social
Hany <i>et al.</i> (2022) [21]	Indonesia	SCHFI V6.2; Family Empowerment Scale	Self-care was associated with family empowerment	Social
Chuang <i>et al.</i> (2019) [15]	China	PHQ-9); MSPSS; e Health Literacy Scale; DHFKS; SCHFI V6.2	Self-care was associated with depression, social support, health literacy, and heart failure knowledge.	Psychological; cognitive; social
Patrick <i>et al.</i> (2022) [31]	Unites States of America	SCHFI V6.2; PROMIS.	Self-care was associated with depression and anxiety.	Psychological
Cao <i>et al.</i> (2019) [16]	China	C-SCHFI; C-HFKT; MOS-SSS-C	Self-care was associated with sex differences, heart failure knowledge, self-care confidence, and social support.	sociodemographic; cognitive; social
Yazew <i>et al.</i> (2019) [26]	Ethiopia	EHFScBS; PHQ-9	Self-care was associated with NYHA class, heart failure duration, heart failure knowledge, and depressive symptoms	Sociodemographic; Cognitive; psychological
Wang <i>et al.</i> (2020) [17]	China	The Chinese version HADS; The Chinese version of Health Literacy Scale; C-SCHFI	Self-care was associated with health literacy and self-care confidence, mediating depression.	Cognitive; psychological
Juárez-Vela <i>et al.</i> (2019) [27]	Ethiopia	SCHFI V6.2	Self-care was associated with age, education level, heart failure stage, heart failure duration, heart failure knowledge, and social support.	Sociodemographic; cognitive; social

Author	Country	Instrument used	Associated factors	Domain(s)
Moaddab <i>et al.</i> (2020) [22]	Iran	SCHFI V6.2; MMSE	Self-care was associated with education level, cognitive function, and prior heart failure information.	Sociodemographic; cognitive
Sitotaw <i>et al.</i> 2020 [28]	Ethiopia	EHFScBS; Heart failure knowledge scale	Self-care was associated with age, NYHA class, and heart failure knowledge.	Sociodemographic; cognitive
Graven <i>et al.</i> 2021 [32]	United States of America	SCHFI V6.2	Self-care was associated with sex, ethnicity, age, education level, and marital status.	Sociodemographic
Yoshinaga <i>et al.</i> (2020) [23]	Japan	EHFScBS	Self-care was associated with family support in medication management.	Social

C-HFKT: Chinese version of the Heart Failure Knowledge Test; C-SCHFI: Chinese version of the Self-Care of Heart Failure Index; DHFKS: Dutch Heart Failure Knowledge Scale; EAAPIC: Scale of Evaluation of Self-Care of Patients with Heart Failure (Escala de Avaliação do Autocuidado do Paciente com Insuficiência Cardíaca); EHFScBS: European Heart Failure Self-Care Behavior Scale; ESSI: ENRICH Social Support Instrument; HADS: Hospital Anxiety and Depression Scale; MMSE: Mini-Mental State Examination; MOS-SSS-C: Medical Outcomes Study Social Support Survey–Chinese version; MSPSS: Multidimensional Scale of Perceived Social Support; NYHA: New York Heart Association; PHQ-9: Patient Health Questionnaire-9; PROMIS: Patient-Reported Outcomes Measurement Information System; SCHFI: Self-Care of Heart Failure Index; SCHFI V6.2: Self-Care of Heart Failure Index version 6.2; S-TOFHLA: Short Test of Functional Health Literacy in Adults.

Psychological factors

Psychological determinants included depression [15,17,25,26,29,31], anxiety [31], and self-efficacy [16,17,20,29]. Depression was one of the strongest negative predictors of self-care across studies from Ethiopia [25], Indonesia [20], the United States [29], China [15-17], and the United States of America [31] (Pennsylvania) [29]. Self-efficacy emerged as a critical facilitator and frequently acted as a mediator between knowledge, depression, and self-care behaviors, highlighting its central role in self-management.

Cognitive factors

Cognitive determinants consisted of health literacy [15,17,34], cognitive function [22] and disease-specific knowledge [15,16,18,24-28]. Studies from South Korea [34], Singapore [18], China [15-17], Iran [22] and Ethiopia [24-28] reported that adequate health literacy and stronger heart failure knowledge were associated with better self-care maintenance and management. Knowledge was commonly influenced by educational level and exposure to heart failure related information. Several studies demonstrated interactions among health literacy, self-confidence, and psychological factors.

Social factors

Social determinants of self-care were predominantly related to family support [13,15,16,20,23,25,27,30] and family empowerment [21]. Evidence from the United States [30], Indonesia [20], Ethiopia [25,26], China [15,16], Japan [23], and Nepal [13] showed that emotional support, assistance with medication adherence and symptom monitoring, and active family involvement in care significantly improved self-care behaviors. In addition, family empowerment interventions were consistently associated with better treatment adherence.

Discussion

Findings from the present study reveal that self-care is a multifaceted process influenced by individual, psychological, and social-contextual elements. In accordance with Riegel's Middle-Range Theory of Self-Care in Chronic Illness (2012), self-care encompasses three interconnected processes: maintenance, monitoring, and management, each shaped by a dynamic interplay of knowledge, motivation, self-efficacy, and social support [14]. Comparatively, findings from the present study align with those reported in previous meta-analysis [35]. Previous meta-analyses specifically identified self-efficacy, depression, and literacy as consistent determinants of self-care adherence [36-38]. These findings collectively underscore that self-efficacy acts as a central mediator linking knowledge and emotional regulation to self-care performance [35,39]. Knowledge and health literacy provide the cognitive foundation for patients to understand their illness, while self-efficacy transforms this understanding into behavioral execution [40]. Depression, on the other hand, disrupts this mechanism by diminishing motivation and perceived control [37,41].

The examination of causal pathways and potential confounding variables indicates a bidirectional and interconnected relationship: psychological distress and depressive states can be exacerbated by inadequate self-care, while depressive symptoms reduce self-efficacy, resulting in inferior self-care engagement [17,42]. This circular pathway (depression ↔ self-efficacy ↔ self-care) suggests that psychological well-being directly influences behavioral outcomes, while self-efficacy functions as both a mediator and a buffer [43]. Family support functions as a contextual moderator, attenuating the detrimental effects of depression and reinforcing the relationship between self-efficacy and behavior [43,44]. Multiple determinants should be addressed simultaneously, rather than in isolation, as evidenced by these interactions.

Across included studies, sociodemographic characteristics that influence self-care in heart failure patients include age, sex, marital status, ethnicity, and severity [13,32,33]. Low self-care behaviors among heart failure patients significantly increased all-cause mortality in men but not in women [45]. Self-care maintenance was related to heart failure knowledge among men, whereas self-care management was associated with social support. In contrast, among women, self-care maintenance was related to self-care confidence, while self-care management was related to both self-care confidence and heart failure knowledge [16]. According to the findings

in previous studies, individuals with heart failure who were between the ages of 30 and 50 and had NYHA class III or IV function had better self-care practices [46]. Other factors influencing self-care among patients with heart failure included level of education, duration of heart failure, and prior exposure to heart failure related information [19,24,27]. Patients with heart failure for less than a year had poorer self-care compared to those with a longer duration of heart failure [26]. Sociodemographic characteristics identified as determinants impacting self-care abilities might be a crucial consideration in the development of self-care interventions [47]. These findings suggest that the sociodemographic factors provide the contextual base within which psychological and cognitive factors operate. Demographic determinants indirectly influence self-care by influencing health literacy and self-efficacy, as outlined in Riegel's Self-Care Theory [14].

Cognitive factors, including health literacy and heart failure related knowledge, also play a critical role in shaping self-care behaviors. Health literacy is the information, skills, and health-related experience that enables people to identify their health status and take responsibility for their own health treatment [48]. Patients with heart failure who have high or adequate health literacy tend to practice self-care more consistently [34,49]. However, individuals with low health literacy may worsen their own self-care, leading to a rise in rehospitalizations, morbidity, and mortality [50-52]. To ensure quality care, it is essential to understand the specific informational needs of patients with heart failure and identify appropriate sources of information as they transition from the hospital to home. Developing personalized educational strategies based on patients' level of health literacy is crucial for promoting effective self-care behaviors [53]. Although previous studies have reported that health literacy is not directly related to heart failure self-care, these findings suggest that appropriately designed educational interventions can be undertaken to improve health outcomes across varying levels of health literacy [29,54]. Health literacy serves as the cognitive basis that enhances knowledge and strengthens self-efficacy, which encourages self-care maintenance and management behaviors [36].

Patient participation is also a factor that affects self-care, including knowledge to participate in carrying out effective self-care [55]. Inadequate knowledge about heart failure leads to poor engagement rates in self-care practices [46]. Knowledge of heart failure is a predictor that affects the practice of adequate self-care behavior in patients with heart failure [27,56,57]. Knowledge related to heart failure self-care is closely associated with patient education, which serves as a primary determinant of disease-specific knowledge among individuals with heart failure [15,18]. Appropriate educational interventions aimed at enhancing disease-related knowledge have been shown to improve self-care behaviors among patients with heart failure [58,59]. Current heart failure management guidelines emphasize the importance of structured education for both patients and their families [8]. Self-care education enables individuals with heart failure to better manage their condition, adapt to changing symptoms, and actively participate in treatment decisions [60,61]. Accordingly, effective educational strategy programs should be developed to expand patient knowledge. In addition, various platforms for interaction and follow-up with health professionals, including digital and community-based approaches, may be utilized to support patients in gaining a clearer understanding of their condition [62].

Self-efficacy consistently emerged as one of the strongest predictors of self-care. Patients' confidence in their ability to perform self-care influences decision-making, behavioral consistency, and overall treatment engagement [63,64]. Self-efficacy has been connected with adverse outcomes and is seen as an acceptable alternative for predicting hospitalization for heart failure [65]. Heart failure patients' decisions and actions about their own treatment are significantly influenced by their level of self-efficacy [66]. Increasing patient self-efficacy is a crucial component in improving heart failure self-care [29,67]. Patients' self-efficacy in performing self-care plays a critical role in shaping self-care behaviors and the decision-making processes involved in managing heart failure [68]. Self-efficacy is therefore a key consideration in the design of health education interventions, as it is closely related to self-care among individuals with heart failure [29].

Psychological distress, particularly depression, was found to have a detrimental impact on self-care. In patients with heart failure, depression is a very common and problematic psychiatric comorbidity [69]. Patients frequently express mental distress, including anxiety and depression, due to the stressful and difficult nature of living with heart failure [70]. Patients with

psychological issues, such as depressive symptoms, may demonstrate self-care challenges related to heart failure more frequently than other patients, which might increase their risk of hospitalization [71]. Previous studies found a continuous link between depression and self-care among people with heart failure [15,25,72]. Depression in heart failure patients has a negative relationship with self-care practices [29,31,73]. Depression was significantly associated with sex, self-care behavior, current smoking, social support, knowledge, health literacy, and duration of heart failure in patients with heart failure [17,25]. Reducing psychological distress, such as depressive symptoms, may improve self-care and health-related quality of life in heart failure patients [74]. Increased social support, optimal depression screening, and management for heart failure patients are recommended by guidelines [8]. Depression not only impairs emotional well-being but also weakens self-efficacy and self-care adherence. This interaction (depression ↔ self-efficacy ↔ self-care) highlights a causal pathway that influences behavioral outcomes in heart failure patients.

Social and contextual influences, especially family support, further shape self-care behaviors. Family members have a significant influence on enhancing heart failure patients' adherence to self-care [15,75-77]. Patients with heart failure who engage in poor self-care are affected not just on an individual level but also on a family level [23]. Family members may support a patient's participation in self-care [14]. Family support was the primary factor influencing heart failure patients' self-care [20,30]. Greater exposure to family support is associated with improved self-care behaviors among patients with heart failure [78]. The presence of family support and family empowerment may improve the family's capacity to provide self-care for people with heart failure [21]. Family support plays a critical role in the management of heart failure, and health-care providers should maintain ongoing engagement with patients and their families to develop and reinforce effective self-care strategies [79]. Family support acts as a protective moderator by mitigating the adverse effects of depression and strengthening self-efficacy and adherence to self-care behaviors. These findings are consistent with the conceptual model presented in **Figure 2**.

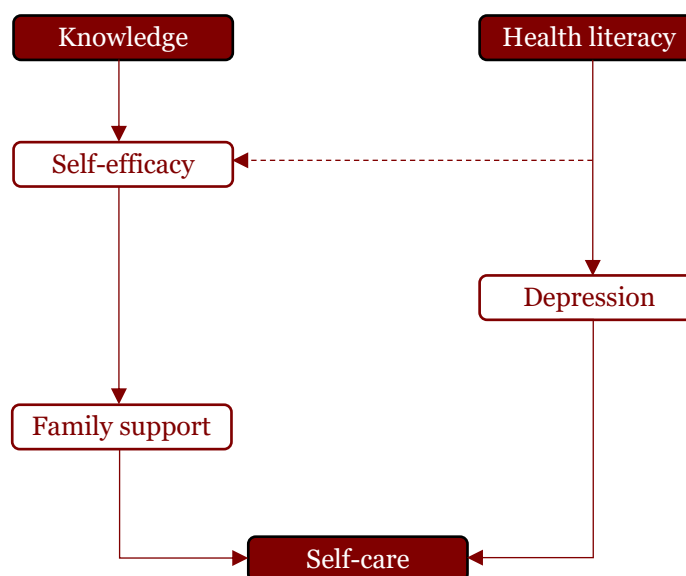


Figure 2. Conceptual interaction model of self-care determinants. Self-efficacy is directly promoted by knowledge and health literacy, which consequently enhances self-care behavior. Depression has a negative effect on both self-efficacy and self-care, whereas family support mitigates the effects of depression and enhances adherence.

This review underscores the importance of nurse-led interventions that prioritize the enhancement of self-efficacy and health literacy while integrating psychosocial support to address depression. Several limitations should be acknowledged. First, the exclusion of grey literature may have resulted in the omission of relevant unpublished or non-peer-reviewed studies. Second, the inclusion of only cross-sectional studies limits the ability to infer causal relationships between

identified factors and self-care behaviors. Third, the restriction to English-language publications may have introduced language bias. Additionally, variability in measurement instruments, sample sizes, and cultural contexts across included studies may have contributed to heterogeneity in the reported findings. Finally, most included studies relied on self-reported measures, which are subject to recall and social desirability bias. Despite these limitations, this scoping review provides a comprehensive synthesis of existing evidence that may inform future research, policy development, and nursing education.

Conclusion

Self-care among patients with heart failure is influenced by socio-demographic, psychological, cognitive, and social factors. Self-efficacy, depression, and family support emerged as the most consistent determinants of self-care behaviors. Understanding these factors may help explain persistently low levels of self-care and inform the design of targeted interventions aimed at enhancing the knowledge and self-care skills of patients with heart failure to support effective disease management. Health care professionals should incorporate family empowerment and self-care education into their routine clinical practice. Future interventional and longitudinal studies are needed to establish causal relationships and to develop contextually appropriate self-care frameworks.

Ethics approval

Not required.

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Competing interests

All authors declare that there are no conflicts of interest.

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Underlying data

Derived data supporting the findings of this study are available from the corresponding author on request.

Declaration of artificial intelligence use

This study used artificial intelligence (AI) tools for language refinement and formatting purposes; all conceptual content, data interpretation, and conclusions were authored independently. We confirm that all AI-assisted processes were critically reviewed by the authors to ensure the integrity and reliability of the results. The final decisions and interpretations presented in this article were solely made by the authors.

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References

1. Lippi G, Sanchis-Gomar F. Global epidemiology and future trends of heart failure. *AME Med J* 2020;5(15):1-6.
2. Roberts NL, Mountjoy-Venning WC, Anjomshoa M, *et al.* GBD 2017 disease and injury incidence and prevalence collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and

injuries for 195 countries and territories, 1990–2017: A systematic analysis for the Global Burden of Disease Study (vol 392, pg 1789, 2018). *Lancet* 2019;393(10190):E44–E44.

3. Groenewegen A, Rutten FH, Mosterd A, *et al.* Epidemiology of heart failure. *Eur J Heart Fail* 2020;22(8):1342–1356.
4. Ponikowski P, Anker SD, AlHabib KF, *et al.* Heart failure: Preventing disease and death worldwide. Barcelona: European Society of Cardiology; 2014.
5. Tavakoly SSB, Peyman N, Zadehahmad Z, *et al.* Effect of educational interventions on health literacy in patients with heart failure. *Int J Health Promot Educ* 2019;57(1):23–36.
6. Bagheri–Saweh MI, Lotfi A, Salawati Ghasemi S. Self-care behaviors and related factors in chronic heart failure patients. *Int J Biomed Public Health* 2018;1(1):42–47.
7. Härter M, Dirmaier J, Dwinger S, *et al.* Effectiveness of telephone-based health coaching for patients with chronic conditions: A randomised controlled trial. *PLoS One* 2016;11(9):e0161269.
8. Jaarsma T, Hill L, Bayes-Genis A, *et al.* Self-care of heart failure patients: Practical management recommendations from the Heart Failure Association of the European Society of Cardiology. *Eur J Heart Fail* 2021;23(1):157–174.
9. Pobrotyn P, Mazur G, Kałużna-Oleksy M, *et al.* The level of self-care among patients with chronic heart failure. *Healthcare* 2021;9(9):1179.
10. Lee KS, Moser DK, Dracup K. Relationship between self-care and comprehensive understanding of heart failure and its signs and symptoms. *Eur J Cardiovasc Nurs* 2018;17(6):496–504.
11. Vellone E, Reborá P, Ausili D, *et al.* Motivational interviewing to improve self-care in heart failure patients (MOTIVATE-HF): A randomized controlled trial. *ESC Heart Fail* 2020;7(3):1309–1318.
12. Herber OR, Kastaun S, Wilm S, *et al.* From qualitative meta-summary to qualitative meta-synthesis: introducing a new Situation-Specific theory of barriers and facilitators for self-care in patients with heart failure. *Qual Health Res* 2019;29(1):96–106.
13. Koirala B, Himmelfarb CRD, Budhathoki C, *et al.* Heart failure self-care, factors influencing self-care and the relationship with health-related quality of life: A cross-sectional observational study. *Heliyon* 2020;6(2):e03412.
14. Riegel B, Jaarsma T, Strömberg A. A middle-range theory of self-care of chronic illness. *Adv Nurs Sci* 2012;35(3):194–204.
15. Chuang H-W, Kao C-W, Lin W-S, *et al.* Factors affecting self-care maintenance and management in patients with heart failure: Testing a path model. *J Cardiovasc Nurs* 2019;34(4):297–305.
16. Cao X, Chair SY, Wang X, *et al.* Self-care in Chinese heart failure patients: Gender-specific correlates. *Heart Lung* 2019;48(6):496–501.
17. Wang B, Xia L, Yu J, *et al.* The multiple mediating effects of health literacy and self-care confidence between depression and self-care behaviors in patients with heart failure. *Heart Lung* 2020;49(6):842–847.
18. Zeng W, Chia SY, Chan YH, *et al.* Factors impacting heart failure patients' knowledge of heart disease and self-care management. *Proc Singap Healthc* 2017;26(1):26–34.
19. Hany A, Vatmasari RA. Correlation between nurse-patient interaction and readiness to care for post-treated heart failure patients in the intensive care room, Malang, Indonesia. *J Public Health Res* 2021;10(2).
20. Hudiyawati D, Ainunnisa K, Riskamala G. Self-care and its related factors among patients with congestive heart failure in Surakarta, Indonesia. *J Med Chem Sci* 2021;4(4):364–373.
21. Hany A, Yulistianingsih E, Kusumaningrum BR. Family empowerment and family ability to self-care for heart failure patients in the intermediate care room. *Int J Public Health Sci* 2022;11(1).
22. Moaddab F, Ghanbari A, Salari A, *et al.* Predictors of self-care behaviors in heart failure patients: A cross-sectional study. *Adv Nurs Midwifery* 2020;29(2):19–26.
23. Yoshinaga R, Tomita K, Wakayama K, *et al.* Factors related to self-care behaviors among hospitalized patients with heart failure in Japan, based on the European Heart Failure Self-Care Behaviour Scale. *J Phys Ther Sci* 2022;34(6):416–421.
24. Seid MA, Abdela OA, Zeleke EG. Adherence to self-care recommendations and associated factors among adult heart failure patients. From the patients' point of view. *PLoS One* 2019;14(2):e0211768.
25. Yazew KG, Beshah DT, Salih MH, *et al.* Factors associated with depression among heart failure patients at cardiac follow-up clinics in northwest Ethiopia, 2017: A cross-Sectional Study. *Psychiatry J* 2019;2019.
26. Yazew KG, Salih MH, Beshah DT. Self-care behavior and associated factors among adults with heart failure at cardiac follow-up clinics in West Amhara Region Referral Hospitals, Northwest Ethiopia, 2017. *Int J Afr Nurs Sci* 2019;11:100148.
27. Juárez-Vela R, Sarabia-Cobo CM, Antón-Solanas I, *et al.* Investigating self-care in a sample of patients with decompensated heart failure: A cross-sectional study. *Rev Clin Esp* 2019;219(7):351–359.

28. Sitotaw E, Tsige Y, Boka A. Practice of self-care behaviours and associated factors among patients with heart failure. *Br J Card Nurs* 2022;17(1):1-10.
29. Chen AM, Yehle KS, Plake KS, *et al.* The role of health literacy, depression, disease knowledge, and self-efficacy in self-care among adults with heart failure: An updated model. *Heart Lung* 2020;49(6):702-708.
30. Fivecoat HC, Sayers SL, Riegel B. Social support predicts self-care confidence in patients with heart failure. *Eur J Cardiovasc Nurs* 2018;17(7):598-604.
31. Patrick M, Miller B, Will B, *et al.* Anxiety and depression moderate the relationship between quality of life and self-care in patients with heart failure. *Geriatr Nurs* 2022;44:54-59.
32. Graven LJ, Abbott L, Dickey SL, *et al.* The influence of gender and race on heart failure self-care. *Chronic Illn* 2021;17(2):69-80.
33. Cavalcante LM, Lima FET, Custódio IL, *et al.* Influence of socio-demographic characteristics in the self-care of people with heart failure. *Rev Bras Enferm* 2018;71:2604-2611.
34. Son Y-J, Shim DK, Seo EK, *et al.* Health literacy but not frailty predict self-care behaviors in patients with heart failure. *Int J Environ Res Public Health* 2018;15(11):2474.
35. Kleman C, Turrise S, Winslow H, *et al.* Individual and systems-related factors associated with heart failure self-care: A systematic review. *BMC Nurs* 2024;23(1):1-21.
36. Wondmieneh A, Getie A, Bimerew M. Self-care behaviour and associated factors among heart failure patients in Ethiopia: A systematic review and meta-analysis. *BMJ Open* 2023;13(12):e071960.
37. Kirchberger I, Fischer S, Raake P, *et al.* Depression mediates the association between health literacy and health-related quality of life after myocardial infarction. *Front Psychiatry* 2024;15:1341392.
38. Meraz R, Caldwell EP, McGee JS. The relationships among health literacy, patient activation, and self-care behaviors in adults with heart failure: A cross sectional Study. *Sage Open* 2023;13(1):21582440231163779.
39. Du S, Tian L, Tian Y, *et al.* The role of self-efficacy and self-care agency as mediating factors in the link between health literacy and health-promoting lifestyle among older adults post covid 19 era: A multiple mediator model. *Geriatr Nurs* 2023;54:252-257.
40. Aghajanloo A, Negarandeh R, Janani L, *et al.* Self-care status in patients with heart failure: Systematic review and meta-analysis. *Nurs Open* 2021;8(5):2235-2248.
41. Yu S, Lee H. Mediating effects of depressive symptoms and uncertainty on physical symptoms and self-care in Korean older men with heart failure. *J Nurs Res* 2024;32(6):e364.
42. Chang LY, Wu SY, Chiang CE, *et al.* Depression and self-care maintenance in patients with heart failure: A moderated mediation model of self-care confidence and resilience. *Eur J Cardiovasc Nurs* 2017;16(5):435-443.
43. Maeda U, Shen B-J, Schwarz ER, *et al.* Self-efficacy mediates the associations of social support and depression with treatment adherence in heart failure patients. *Int J Behav Med* 2013;20(1):88-96.
44. Stamp KD, Dunbar SB, Clark PC, *et al.* Family partner intervention influences self-care confidence and treatment self-regulation in patients with heart failure. *Eur J Cardiovas Nurs* 2016;15(5):317-327.
45. Abe R, Sakata Y, Nochioka K, *et al.* Gender differences in prognostic relevance of self-care behaviors on mortality and hospitalization in patients with heart failure – A report from the CHART-2 Study. *J Cardiol* 2019;73(5):370-378.
46. Sitotaw E, Tsige Y, Boka A. Practice of self-care behaviours and associated factors among patients with heart failure. *Br J Card Nurs* 2022:1-10.
47. Koirala B, Himmelfarb CD, Budhathoki C, *et al.* Factors affecting heart failure self-care: an integrative review. *Heart Lung* 2018;47(6):539-545.
48. Navarro-Rubio MD, Rudd R, Rosenfeld L, *et al.* Health literacy: Implications for the health system. *Med Clin* 2016;147(4):171-175.
49. Cajita MI, Cajita TR, Han H-R. Health literacy and heart failure: a systematic review. *J Cardiovasc Nurs* 2016;31(2):121.
50. Wu JR, Holmes GM, DeWalt DA, *et al.* Low literacy is associated with increased risk of hospitalization and death among individuals with heart failure. *J Gen Intern Med* 2013;28(9):1174-1180.
51. Wu J-R, Holmes GM, DeWalt DA, *et al.* Low literacy is associated with increased risk of hospitalization and death among individuals with heart failure. *J Gen Intern Med* 2013;28(9):1174-1180.
52. Moser DK, Robinson S, Biddle MJ, *et al.* Health literacy predicts morbidity and mortality in rural patients with heart failure. *J Card Fail* 2015;21(8):612-618.
53. Jo A, Ji Seo E, Son YJ. The roles of health literacy and social support in improving adherence to self-care behaviours among older adults with heart failure. *Nurs Open* 2020;7(6):2039-2046.

54. Barkhordari-Sharifabad M, Saberinejad K, Nasiriani K. The effect of health literacy promotion through virtual education on the self-care behaviors in patients with heart failure: A clinical trial. *J Health Lit* 2021;6(1):51-60.
55. Bailey A, Mallow J, Theeke L. Perceived self-efficacy, confidence, and skill among factors of adult patient participation in transitional care: A systematic review of quantitative studies. *SAGE Open Nurs* 2022;8:23779608221074658.
56. Beker J, Belachew T, Mekonin A, *et al.* Predictors of adherence to self-care behaviour among patients with chronic heart failure attending Jimma University Specialized Hospital chronic follow up clinic, South West Ethiopia. *J Cardiovasc Dis Diagn* 2014;2:1-8.
57. Herber OR, Ehringfeld I, Steinhoff P, *et al.* Identifying relevant factors for successful implementation into routine practice: expert interviews to inform a heart failure self-care intervention (ACHIEVE study). *BMC Health Serv Res* 2021;21(1):1-11.
58. Hwang B, Pelter MM, Moser DK, *et al.* Effects of an educational intervention on heart failure knowledge, self-care behaviors, and health-related quality of life of patients with heart failure: Exploring the role of depression. *Patient Educ Couns* 2020;103(6):1201-1208.
59. Tawalbeh LI. The effect of cardiac education on knowledge and self-care behaviors among patients with heart failure. *Dimens Crit Care Nurs* 2018;37(2):78-86.
60. Montazami M, Khalifehzadeh-Esfahani A, Keshvari M. Investigating the effect of family-centered self-care program based on home visits regarding dietary and medication regimen adherence of discharged patients with acute coronary syndrome. *Iran J Nurs Midwifery Res* 2021;26(2):113.
61. YounJung S, Choi J, Lee H-J. Effectiveness of nurse-led heart failure self-care education on health outcomes of heart failure patients: A systematic review and meta-analysis. *Int J Environ Res Public Health* 2020;17(18):6559.
62. Hailu Gebru T, Hagos Mekonen H, Gemechu Kiros K. Knowledge about self-care and associated factors among heart-failure patients in Ayder Referral Hospital, Ethiopia, 2018: A cross-sectional study. *Proc Singap Healthc* 2021;30(3):185-192.
63. Peyman N, Shahedi F, Abdollahi M, *et al.* Impact of self-efficacy strategies education on self-care behaviors among heart failure patients. *J Tehran Univ Heart Cent* 2020;15(1):6.
64. Ha FJ, Hare DL, Cameron JD, *et al.* Heart failure and exercise: a narrative review of the role of self-efficacy. *Heart Lung Circ* 2018;27(1):22-27.
65. Patel H, Ghosh S. The impact of self-efficacy and depression on self-care in patients with heart failure: An integrative review. *Int Arch Nurs Health Care* 2017;3(4):087.
66. Riegel B, Dickson VV, Faulkner KM. The situation-specific theory of heart failure self-care: revised and updated. *J Cardiovasc Nurs* 2016;31(3):226-235.
67. Kitsiou S, Gerber B, Buchholz S, *et al.* Development and pilot testing of a tailored text messaging intervention to improve self-efficacy and health beliefs about self-care in people with heart failure. *J Card Fail* 2020;26(10 Suppl):S89.
68. Eller LS, Lev EL, Yuan C, *et al.* Describing self-care self-efficacy: Definition, measurement, outcomes, and implications. *Int J Nurs Knowl* 2018;29(1):38-48.
69. Konrad M, Bohlken J, Rapp MA, *et al.* Depression risk in patients with heart failure in primary care practices in Germany. *Int Psychogeriatr* 2016;28(11):1889-1894.
70. Hare DL, Toukhsati SR, Johansson P, *et al.* Depression and cardiovascular disease: a clinical review. *Eur Heart J* 2014;35(21):1365-1372.
71. Freedland KE, Skala JA, Steinmeyer BC, *et al.* Effects of Depression on Heart Failure Self-Care. *J Card Fail* 2021;27(5):522-532.
72. Sedlar N, Lainscak M, Mårtensson J, *et al.* Factors related to self-care behaviours in heart failure: A systematic review of European Heart Failure Self-Care Behaviour Scale studies. *Eur J Cardiovasc Nurs* 2017;16(4):272-282.
73. Kitsiou S, Gerber BS, Kansal MM, *et al.* Patient-centered mobile health technology intervention to improve self-care in patients with chronic heart failure: Protocol for a feasibility randomized controlled trial. *Contemp Clin Trials* 2021;106:106433.
74. Kessing D, Denollet J, Widdershoven J, *et al.* Self-care and health-related quality of life in chronic heart failure: A longitudinal analysis. *Eur J Cardiovasc Nurs* 2017;16(7):605-613.
75. Hooker SA, Schmiede SJ, Trivedi RB, *et al.* Mutuality and heart failure self-care in patients and their informal caregivers. *Eur J Cardiovasc Nurs* 2018;17(2):102-113.
76. Jaarsma T, Cameron J, Riegel B, *et al.* Factors related to self-care in heart failure patients according to the middle-range theory of self-care of chronic illness: A literature update. *Curr Heart Fail Rep* 2017;14(2):71-77.

77. Buck HG, Stromberg A, Chung ML, *et al.* A systematic review of heart failure dyadic self-care interventions focusing on intervention components, contexts, and outcomes. *Int J Nurs Stud* 2018;77:232-242.
78. Khaledi GH, Mostafavi F, Eslami AA, *et al.* Evaluation of the effect of perceived social support on promoting self-care behaviors of heart failure patients referred to the Cardiovascular Research Center of Isfahan. *Iran Red Crescent Med J* 2015;17(6).
79. Bhatnagar A. Environmental determinants of cardiovascular disease. *Circ Res* 2017;121(2):162-180.