



Determinants of Self-Care in Chronic Heart Failure: A Correlation Study of Social Support Dimensions

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Article Information	ABSTRACT
Received : 20 January 2026 Revised : 11 May 2026 Accepted : 29 July 2026	Chronic heart failure (CHF) is rising at an alarming rate worldwide, along with other cardiovascular disorders. The long-term self-care of patients with CHF is necessary because the condition covers a variety of issues. Patients with CHF often benefit from social support as an external resource for symptom management. In multicultural countries such as Indonesia, decision-making is not solely individual but also involves the family. The purpose of this research is to find out how social support affects self-care practices among heart failure patients in Indonesia. This study employed a descriptive correlational approach and surveyed seventy-four participants. Sampling in this study employed a purposive sampling method, with respondents selected based on inclusion criteria. The sample size was determined using a rule of thumb. A self-care heart failure index (SCHFI) and the Medical Outcomes Study Social Support Survey (MOS-SS) were utilised in this research. To analyse the data, Pearson's statistical test was utilised. The results demonstrated that the average patient, who was 52 years old, experienced congestive heart failure (CHF). The study also found a significant relationship between social support and self-care in patients with congestive heart failure (0.239, $p=0.040$). This study also shows that there is a weak correlation between social support and self-care. In summary: Another way social support might help people with CHF adhere to their treatment plan is by acting as a monitor. Confidence, maintenance, and management are all areas where social support can aid CHF patients.
Keywords: Menarche, Knowledge, Audiovisual	

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Introduction

Chronic heart failure (CHF) is one of the cardiovascular diseases that continues to increase globally. The prevalence in CHF patients is around 2%, with an annual incidence of around 0.4% or more than 64.3 million people affected by CHF (Huang et al., 2025). CHF is more common in elderly patients and is an important health problem that affects an ageing population. More than 50% of newly diagnosed CHF patients have other cardiovascular diseases, while more than 30% of newly diagnosed cardiovascular disease patients have CHF (Mustafa et al., 2025; Quzhen & Shi, 2024). Based on diagnoses and symptoms experienced, there are 186,809 people with HF (1.6%) in West Java Province (Kementeriaan Kesehatan, 2024).

The high rates of illness, death, and healthcare resource utilisation associated with chronic heart failure (CHF) are well-documented (Fonseca et al., 2025). More than 90% of patients with congestive heart failure (CHF) suffer debilitating somatic symptoms, including exhaustion, oedema, and sleep difficulties, which significantly diminish their quality of life (QOL), and increase the likelihood of readmission to the hospital (Huang et al., 2025). Thus, people with CHF—a term that can refer to a range of illnesses—need to take responsibility for their own care in the long run. To keep the condition under control and prevent it from getting worse, it is vital to practise proper self-care and make lifestyle modifications (Babygeetha & Devineni, 2024). It is estimated that approximately 40% of repeat hospitalisations can be prevented through effective self-care (Tapak et al., 2025a).

Self-care has become a multifaceted and complex phenomenon that requires knowledge, skills, and lifelong commitment. Most patients spend their time engaging in self-care behaviours (Babygeetha & Devineni, 2024). Self-care is considered a cornerstone of heart failure therapy and includes key practices proven to improve clinical outcomes. These practices include lifestyle adjustments such as taking prescribed medications as directed, restricting sodium intake, exercising, reducing fluid intake, and weighing oneself regularly (Bekele et al., 2023; Rayanti et al., 2026). In addition, it is important to understand the factors that contribute to self-care, such as social support (Fivecoat et al., 2018).

The implementation of self-care still faces several barriers, caused by both internal and external factors. Internal factors that may influence individuals include: a lack of knowledge (D. Y. Kamath et al., 2021), mental health issues, difficulties in understanding and applying the information provided (Philip et al., 2024), and low self-confidence (D. Kamath et al., 2020). External factors include: family support systems, financial difficulties, labour shortages, and

changes in healthcare provision (D'souza et al., 2025). This phenomenon indicates that health education alone is insufficient and that there are failures at the decision-making level regarding self-care, such as when patients experience symptoms, which are often responded to too late, leading to a worsening of their condition.

The practice of self-care helps individuals make decisions regarding changes in their health status. In Western countries, self-care is regarded as an individual's autonomous responsibility. However, in multicultural countries such as Indonesia, decision-making is not solely individual but also involves the family. Every medical decision is the result of family negotiation. The family is not merely a support system, but also a key factor influencing the patient's decision to seek medical help or opt for unverified alternative treatments; consequently, the family's role is crucial in determining the quality of self-care (Fivecoat et al., 2018; Graven et al., 2018).

Managing symptoms in individuals with congestive heart failure (CHF) relies heavily on social support, an external resource that is both easily accessible and directly linked to an individual's physical and mental health (Yan et al., 2025). Direct care support is just one kind of social support; there are also indirect pathways, such as providing emotional resources that might lessen reactions to stress, and unintended support, like modelling healthy behaviour (Kaiser et al., 2020). In addition, having social support is essential for individuals to make and stick to healthy lifestyle changes, which are vital for their long-term health (Babygeetha & Devineni, 2024). Our goal in doing this study is to fill some of the gaps in the existing literature by examining the correlation between social support and self-care measures. Therefore, the purpose of this research is to look at how CHF patients in Indonesia rate their social support and how well they take care of themselves.

Method

This study used a cross-sectional design based on descriptive correlations. Patients receiving outpatient treatment for congestive heart failure at Bandung's Dr. Hasan Sadikin General Hospital made up the study's population. Seventy-four participants made up the sample for this research. The sample size was determined using the Slovin formula. Participants had to meet certain requirements to be included in the study: they had to be at least 18 years old, have had a chronic heart failure diagnosis for at least 6 months, have a NYHA classification of I-IV, and be able to read and write. Participants who did not meet these criteria were excluded from the study. Sampling in this study employed a purposive sampling method, with respondents

selected based on inclusion criteria. This research made use of the 19-item Medical Outcomes Study Social Support Survey (MOS-SS). It is encouraged to employ the 19 things individually or in combination; they span four domains: emotional/informational assistance, practical support, healthy social connection, and affection. Assessment outcomes are based on a mean score ranging from 19 to 95. A Cronbach's alpha of 0.815 was shown in the reliability test findings. The researchers utilised the 22-question Self-care Heart Failure Index (SCHFI) tool to assess self-care. All things considered, the SCHFI may be broken down into three sections: self-care confidence, self-care management, and self-care maintenance. The SCHFI questionnaire employed a scale from 0 to 100 for its measuring results. The results of this study used univariate data analysis in the form of tables showing the mean, median, and standard deviation or median. Bivariate data analysis used Pearson's statistical test with computerisation at a significance level of $\alpha = 0.05$. The researcher used SPSS 25 to process the data.

Research Results

This study was conducted on 74 respondents who met the sample criteria for this study. The average characteristics of the respondents, consisting of age, duration of illness, social support, and self-care, can be seen in Table 1 as follows:

Table 1. Average responses based on age, duration of illness, self-efficacy, social support, and self-care in Chronic Heart Failure patients (n = 74).

Variable	Mean	Standar Deviation (SD)
Age	52.01	13.457
Duration of illness	3.38	1.710
Social Support	77.05	11.230
Self-care	69.66	3.797

Based on Table 1, the characteristics of respondents (n=74) based on age category show that the average age of respondents is 52.01 years with a standard deviation of 13.457, with the youngest age being 21 years and the oldest age being 77 years. The average duration of illness among respondents with chronic heart failure was 3.38 years, with a standard deviation of 1.710. The duration of illness ranged from 1 to 7 years. The 95% confidence interval estimate suggests that the average duration of illness among respondents was between 2.98 and 3.77 years.

The average social support score for respondents was 77.05 with a standard deviation of 11.230. Social support scores ranged from a minimum of 49 to a maximum of 95. The results of the 95% interval estimation show that the average social support score for respondents was

between 74.45 and 79.66. The average self-care score of respondents was 69.66 with a standard deviation of 3.797. The minimum self-care score was 62, and the maximum score was 80. The 95% confidence interval estimate shows that the average self-care score of respondents was between 68.78 and 70.54.

Table 2. Average responses based on age, duration of illness, self-efficacy, social support, and self-care in Chronic Heart Failure patients (n = 74).

Variable	Self-Care	
	<i>r</i>	<i>p-value</i>
Social Support	0.239	0.040

Based on Table 4.6, it is known that there is a significant relationship between social support and self-care in patients with chronic heart failure, with a strong correlation with a correlation value of 0.239.

Discussion

This study's findings suggest that the chance of having heart failure increases with age due to anatomical, physiological, and pathological changes. As a result of the large age gap between those affected (almost 10% of those over 70 vs. less than 1% of those under 50), the prevalence of CHF increases dramatically with age. As people get older, they are more likely to acquire cardiovascular illnesses and other health problems, which contribute to the rising prevalence of CHF (Mustafa et al., 2025). Additionally, a lower tolerance to treatment may be associated with older age and an increased prevalence of both cardiovascular and non-cardiovascular diseases (Yeoh et al., 2020). This is supported by research by Koirala et al. (2020), which shows that there is no significant relationship between age and self-care. Age differences are a factor that can cause differences in the process of implementing self-care. This can be caused by physiological changes such as aging, decreased vision, hearing, and cognition, which make patients unable to perform self-care behaviors and, as a result, they become dependent on others to perform these behaviors (Bestalia et al., 2025; Tapak et al., 2025b).

Male and female patients with CHF have distinct patterns in their presentation and progression. Ischaemic causes of HFrEF are more common in men, whereas hypertension and maintained systolic function are the hallmarks of HFpEF in women. Gender is an important social determinant of health; it is necessary to continue exploring gender differences and gender roles in self-care (Koirala et al., 2020). Women performed better than men on self-care activities. This suggests that women are more confident in their ability to perform these activities,

including understanding and adhering to a low-sodium diet, a key treatment for heart failure needed to prevent further deterioration, and that they are more responsible. Furthermore, women are more likely than men to understand, follow, and maintain low-sodium dietary guidelines (Tapak et al., 2025).

There is a significant ethnic and regional disparity in the incidence of CHF and the effectiveness of treatment. This lends credence to the idea that the odds of suffering from heart failure rise in direct proportion to a person's age. As we become older, our organs start to fail us as our metabolic demands rise; as a result, the heart has to pump more blood to meet these demands (Reinhardt et al., 2024; Yamanaka et al., 2024). This study found that patients suffered from congestive heart failure (CHF) for an average of 3 years. The duration of the disease affects the patient's health status, including functional capacity and quality of life (Kondo et al., 2023). The duration of the disease can impact self-care. Research by Koirala et al. (2020) showed that patients diagnosed with heart failure (with an average duration of 8 months) demonstrated inadequate self-care. Therefore, the duration of the disease can influence the individual and their family's experience in managing self-care.

This study found a significant correlation between social support and self-care in patients with chronic heart failure (p-value 0.040), with a correlation coefficient of 0.239, indicating a weak correlation between social support and self-care. The finding of moderate levels of self-care is consistent with previous research showing that adherence to self-care recommendations is often poor among patients with heart failure. Factors such as lack of knowledge, the presence of comorbidities, heart failure symptoms, medication side effects, and the need for lifestyle modifications can negatively impact physical function, emotional well-being, social relationships, and independence. This can hinder patients' ability to consistently perform self-care (Tapak et al., 2025). This study also shows that there is a positive relationship between social support and self-care. Furthermore, people may be able to identify their symptoms and react to their condition depending on how long the sickness has been present. Additionally, this study demonstrates that self-care and social support are positively correlated in individuals with CHF. The term "support" refers to the help that a person receives from their social circle, specifically their parents, friends, and other close relatives. It is the family's responsibility to normalise and modify health situations, especially when coping with chronic diseases, and to foster an atmosphere that encourages family member involvement. Having loved ones there to

help with both the practical and emotional aspects of self-care management is crucial for those with long-term health conditions like heart failure (Simarmata et al., 2026). Psychosocial components, such as family support, are essential to the success of pharmacological therapy in the treatment of patients with chronic diseases (Sulastini et al., 2025). This is supported by research conducted by Blum et al. (2023), which demonstrates the significant impact that close friends and family can have on HF patients' self-care.

By influencing both the rational and emotional aspects of treatment decisions, social support can help people stick to their treatment plans. This follows from the findings of Graven et al. (2018), who found that people with HF are more likely to engage in sufficient self-care when they receive assistance in confronting and resolving health issues. Many psychological aspects, such as social support, have been identified as important determinants of self-care behaviour adherence for people with chronic illnesses. The results show that there is a strong relationship between social support and self-care behaviour adherence, which means that patients with CHF might benefit greatly from more social support to improve their adherence (Babygeetha & Devineni, 2024). Social support helps individuals to better follow their treatment schedules, including diet, medication use, and regular exercise, and to have greater compliance (Graven et al., 2018; Yan et al., 2025). Patients with HF who have better social support and good knowledge about HF have higher compliance with self-care behaviours (Jo et al., 2020). Good social support can help individuals with CHF to find a sense of security and comfort, thereby fostering self-confidence and attention to their own health (Fivecoat et al., 2018). This is in line with Orem's self-care theory, which explains that interpersonal support is a fundamental foundation for humanity as a core value that precedes nurse-patient interactions (Tanaka, 2022). This is also supported by Riegel's research, which explains that there are three important aspects in self-care: maintenance, monitoring, and management (Jaarsma et al., 2021). In addition, social support also helps individuals improve their health and reduce anxiety, thereby lowering the risk of stress and depression affecting their health (Babygeetha & Devineni, 2024; Latifah & Kristinawati, 2025). Although patients have received social support in performing some self-care behaviors, improvements are still needed in an effort to optimize these practices. Improvements are needed in various aspects, such as the ability to manage self-care, confidence in its implementation, and effectiveness in its implementation, to achieve better

self-care behaviors. Furthermore, social support can be in the form of increased knowledge about the disease, so that information and support provided to patients are optimal.

Practical implications: The findings of this study may assist healthcare providers in utilising and involving families in the self-management or self-care process for patients with chronic heart failure. **Recommendations for further research:** This study can serve as additional insight for healthcare professionals in both clinical practice and education in developing interventions that help enhance the role of families in the self-care process for patients with chronic heart failure, such as motivational support interventions, Family-centered self-care interventions, home-based self-care education, and family and community-based social support. The findings of this study can also be developed into broader research by examining multifactorial relationships (knowledge, stress, depression, quality of life, culture, and resilience) using approaches such as longitudinal research or further analyses such as multivariate analysis and SEM-PLS. Furthermore, implementing direct family- or patient-based interventions using research approaches or methods such as randomized controlled trials (RCTs) or quasi-experiments could also be applied in further research.

Conclusion

Social support plays an important role in helping patients with chronic heart failure (CHF) undergo treatment. Social support helps patients in self-management (confidence, maintenance, and management) so that they are able to follow the treatment process properly. Social support can also serve as a monitor for individuals with CHF in an effort to improve treatment compliance.

Acknowledgments

We would like to express our gratitude to Dr. Hasan Sadikin General Hospital for the support provided during the data collection process for this research, which was an important component in the success of this research activity.

Reference

- Babygeetha, A., & Devineni, D. (2024). Social Support and Adherence to Self-Care Behavior Among Patients With Coronary Heart Disease and Heart Failure: A Systematic Review. In *Europe's Journal of Psychology* (Vol. 20, Number 1, pp. 63–77). PsychOpen. <https://doi.org/10.5964/ejop.12131>.
- Bekele, F., Tafese, L., Demsash, A. W., Tesfaye, H., Labata, B. G., & Fekadu, G. (2023). Adherence to self-care practices and associated factors among heart failure patients

in Ethiopia: A systematic review and meta-analysis. PLoS ONE, 18(8 August).
<https://doi.org/10.1371/journal.pone.0288824>

- Bestalia, N., Dewi, W. N., & Karim, D. (2025). Quality of Life and Physical Exercise Overview in Congestive Heart Failure Patients Using Six-Minute Walk Test. 13(2).
<https://doi.org/10.33650/jkp.v13i2.12490>
- Blum, M., Goldstein, N. E., Jaarsma, T., Allen, L. A., & Gelfman, L. P. (2023). Palliative care in heart failure guidelines: A comparison of the 2021 ESC and the 2022 AHA/ACC/HFSA guidelines on heart failure. In *European Journal of Heart Failure* (Vol. 25, Number 10, pp. 1849–1855). John Wiley and Sons Ltd.
<https://doi.org/10.1002/ejhf.2981>
- D'souza, P. J. J., Lewis, M. S., Paramasivam, G., Noronha, J. A., Kusumavathi, P., Devasia, T., & George, L. S. (2025). Factors associated with self-care behavior among heart failure patients in India: A systematic review. In *Journal of Education and Health Promotion* (Vol. 14, Number 1). Wolters Kluwer Medknow Publications.
https://doi.org/10.4103/jehp.jehp_1778_24
- Fivecoat, H. C., Sayers, S. L., & Riegel, B. (2018). Social support predicts self-care confidence in patients with heart failure. *European Journal of Cardiovascular Nursing*, 17(7), 598–604. <https://doi.org/10.1177/1474515118762800>
- Fonseca, C., Baptista, R., Franco, F., Moura, B., Pimenta, J., Moraes Sarmento, P., Cardoso, J. S., & Brito, D. (2025). Worsening heart failure: progress, pitfalls, and perspectives. *Heart Failure Reviews*, 30(4), 715–734. <https://doi.org/10.1007/s10741-025-10497-z>
- Graven, L. J., Gordon, G., Keltner, J. G., Abbott, L., & Bahorski, J. (2018). Efficacy of a social support and problem-solving intervention on heart failure self-care: A pilot study. *Patient Education and Counseling*, 101(2), 266–275.
<https://doi.org/10.1016/j.pec.2017.09.008>
- Huang, J., Liu, X., Wang, D., Luan, X., & Yao, W. (2025). Association between social frailty and quality of life in older patients with chronic heart failure: sequential multiple mediating effects of family insufficiency and social networks. *Frontiers in Medicine*, 12. <https://doi.org/10.3389/fmed.2025.1639935>
- Jaarsma, T., Hill, L., Bayes-Genis, A., La Rocca, H.-P. B., Castiello, T., Čelutkienė, J., Marques-Sule, E., Plymen, C. M., Piper, S. E., Riegel, B., Rutten, F. H., Ben Gal, T., Bauersachs, J., Coats, A. J. S., Chioncel, O., Lopatin, Y., Lund, L. H., Lainscak, M., Moura, B., ... Strömberg, A. (2021). Self-care of heart failure patients: practical management recommendations from the Heart Failure Association of the European Society of Cardiology. *European Journal of Heart Failure*, 23(1), 157–174.
<https://doi.org/10.1002/ejhf.2008>

- Jo, A., Ji Seo, E., & Son, Y. J. (2020). The roles of health literacy and social support in improving adherence to self-care behaviours among older adults with heart failure. *Nursing Open*, 7(6), 2039–2046. <https://doi.org/10.1002/nop2.599>
- Kaiser, P., Allen, N., Delaney, J. A. C., Hirsch, C. H., Carnethon, M., Arnold, A. M., & Odden, M. C. (2020). The association of prediagnosis social support with survival after heart failure in the Cardiovascular Health Study. *Annals of Epidemiology*, 42, 73–77. <https://doi.org/10.1016/j.annepidem.2019.12.013>
- Kamath, D., Bhuvana, K., Dhiraj, R., Xavier, D., Varghese, K., Salazar, L., Granger, C., Pais, P., & Granger, B. (2020). Patient and caregiver reported facilitators of self-care among patients with chronic heart failure: report from a formative qualitative study. *Wellcome Open Research*, 5, 10. <https://doi.org/10.12688/wellcomeopenres.15485.1>
- Kamath, D. Y., Bhuvana, K. B., Salazar, L. J., Varghese, K., Kamath, A., Idiculla, J., Pais, P., Kulkarni, S., Granger, B. B., & Xavier, D. (2021). A qualitative, grounded theory exploration of the determinants of self-care behavior among Indian patients with a lived experience of chronic heart failure. *PLOS ONE*, 16(1), e0245659. <https://doi.org/10.1371/journal.pone.0245659>
- Kementerian Kesehatan. (2024). Laporan Tematik Survei Kesehatan Indonesia (SKI) Tahun 2023: Potret Indonesia Sehat. (M. W. Sandra Olivia Frans, Ed.). Kementerian Kesehatan RI.
- Koirala, B., Dennison Himmelfarb, C. R., Budhathoki, C., & Davidson, P. M. (2020). Heart failure self-care, factors influencing self-care and the relationship with health-related quality of life: A cross-sectional observational study. *Heliyon*, 6(2), e03412. <https://doi.org/10.1016/j.heliyon.2020.e03412>
- Kondo, T., Jering, K. S., Borleffs, C. J. W., De Boer, R. A., Claggett, B. L., Desai, A. S., Dobreanu, D., Inzucchi, S. E., Hernandez, A. F., Janssens, S. P., Jhund, P. S., Kosiborod, M. N., Lam, C. S. P., Langkilde, A. M., Martinez, F. A., Petersson, M., Vinh, P. N., Vaduganathan, M., Solomon, S. D., & McMurray, J. J. V. (2023). Patient Characteristics, Outcomes, and Effects of Dapagliflozin According to the Duration of Heart Failure: A Prespecified Analysis of the deliver Trial. *Circulation*, 147(14), 1067–1078. <https://doi.org/10.1161/CIRCULATIONAHA.122.062918>
- Latifah, O. N., & Kristinawati, B. (2025). The Relationship Between Family Support and Symptoms Appearing in Heart Failure Patients. *Health Information: Jurnal Penelitian*, 17(3), 302–314. <https://doi.org/10.36990/hijp.v17i3.1769>
- Mustafa, A. A., Tuama, R. M., & Kader, M. A. (2025). Pathophysiological Insights into Congestive Heart Failure: From Cellular Mechanisms to Clinical Practice – A Review. *South Asian Research Journal of Applied Medical Sciences*, 7(03), 91–110. <https://doi.org/10.36346/sarjams.2025.v07i03.005>

- Philip, A., Shastri, C. S., Unnikrishnan, M. K., & Utagi, B. (2024). Empowering self-care through patient education in heart failure patients: A multimodal approach comprising of P-PILs, videos, and personalized advice. *Journal of Education and Health Promotion*, 13(1). https://doi.org/10.4103/jehp.jehp_1797_23
- Quzhen, B., & Shi, X. (2024). Current status and trend analysis of chronic heart failure research based on CNKI database and CiteSpace. *Theoretical and Natural Science*, 49(1), 30–38. <https://doi.org/10.54254/2753-8818/49/20241265>
- Rayanti, R. E., Nugraheni, I. T., & Aini, I. (2026). Effectiveness of Motivational Educational Videos on Knowledge, Body Mass Index, Self-Care, and Empowerment among Older Women with Hypertension. *Jurnal Keperawatan Profesional*, 14(1), 120–143. <https://doi.org/10.33650/jkp.v14i1.13316>
- Reinhardt, M., Schupp, T., Behnes, M., Lau, F., Schmitt, A., Abel, N., Akin, M., Rusnak, J., Akin, I., & Weidner, K. (2024). Age-Related Outcomes in Heart Failure with Mildly Reduced Ejection Fraction. *Journal of Clinical Medicine*, 13(17). <https://doi.org/10.3390/jcm13175151>
- Simarmata, J. P., Pangkey, B. C. A., Midu, S. Y., & Saputra, B. A. (2026). Assessing The Factors Associated With Self-Management In Hypertension Patiens: Implementations For Healthcare Strategies. *Jurnal Keperawatan Profesional*, 14(1), 203–212. <https://doi.org/10.33650/jkp.v14i1.14185>
- Sulastini, S., Aditya Nugraha, B., & Nurul Madinah, R. (2025). The Relationship Between Family Support and Self-Care in Heart Failure Patients: A Cross-sectional Study in Garut City, Indonesia. *Journal of Health and Nutrition Research*, 4(2), 444–451. <https://doi.org/10.56303/jhnresearch.v4i2.399>
- Tanaka, M. (2022). Orem’s nursing self-care deficit theory: A theoretical analysis focusing on its philosophical and sociological foundation. *Nursing Forum*, 57(3), 480–485. <https://doi.org/10.1111/nuf.12696>
- Tapak, L., Amini, P., Parami, S., Hamidi, O., Ramezani-Doroh, V., & Azizi, A. (2025a). Investigating the correlation of self-care and quality-of-life patients with heart failure. *BMC Cardiovascular Disorders*, 25(1). <https://doi.org/10.1186/s12872-025-04986-0>
- Tapak, L., Amini, P., Parami, S., Hamidi, O., Ramezani-Doroh, V., & Azizi, A. (2025b). Investigating the correlation of self-care and quality-of-life patients with heart failure. *BMC Cardiovascular Disorders*, 25(1), 538. <https://doi.org/10.1186/s12872-025-04986-0>
- Yamanaka, S., Nochioka, K., Hayashi, H., Shioto, T., Takahashi, J., Miyata, S., Yasuda, S., & Shimokawa, H. (2024). Age-stratified profiles and outcomes of patients with heart failure with preserved ejection fraction. *ESC Heart Failure*, 11(4), 2223–2233. <https://doi.org/10.1002/ehf2.14798>

- Yan, J., Zhou, L., Song, G., & Yuan, Y. (2025). The chain mediating role of social support and yielding coping style between health literacy and symptom burden in patients with chronic heart failure. *Frontiers in Cardiovascular Medicine*, 12. <https://doi.org/10.3389/fcvm.2025.1518175>
- Yeoh, S. E., Dewan, P., Jhund, P. S., Inzucchi, S. E., Køber, L., Kosiborod, M. N., Martinez, F. A., Ponikowski, P., Sabatine, M. S., Solomon, S. D., Bengtsson, O., Sjöstrand, M., Langkilde, A. M., & McMurray, J. J. V. (2020). Patient Characteristics, Clinical Outcomes, and Effect of Dapagliflozin in Relation to Duration of Heart Failure: Is It Ever Too Late to Start a New Therapy? *Circulation: Heart Failure*, 13(12), E007879. <https://doi.org/10.1161/CIRCHEARTFAILURE.120.007879>