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Self-Efficacy as a Behavioral Enabler of Self-Care in Chronic Heart Failure

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Abstract

Background: Chronic heart failure (CHF) is a major health problem associated with morbidity, repeated hospitalization, and long-term self-management demands. Although self-care is essential for symptom control and prevention of deterioration, many patients have difficulty maintaining effective daily management. Self-efficacy is considered an important psychological factor that may support self-care behavior..
Objective: This study aimed to examine the relationship between self-efficacy and self-care among patients with chronic heart failure and to contextualize the role of self-efficacy in supporting self-management behavior.
Methods: A cross-sectional study was conducted involving 74 patients with CHF. Data were collected using the Self-Care of Heart Failure Index (SCHFI) v.6.2 and the General Self-Efficacy (GSE) Scale. Data were analyzed using descriptive statistics, Pearson's correlation, independent t-test, and multiple linear regression.
Results: Most participants were male (70.3%), with a mean age of 52.01 ± 13.46 years. The mean self-efficacy score was 35.00 ± 3.75, and the mean self-care score was 69.66 ± 3.80. Self-efficacy was positively correlated with self-care ($r = 0.343$, $p = 0.003$) and remained a significant predictor in multivariate analysis ($\beta = 0.31$, $p = 0.004$).
Conclusion: Self-efficacy was positively associated with self-care among patients with chronic heart failure, but the modest strength of the relationship suggests that self-care is shaped by multiple interacting factors. These findings support the view that self-efficacy functions as a behavioral enabler rather than a standalone determinant of self-care. Interventions aimed at improving CHF self-management should therefore combine confidence-building strategies with broader educational, clinical, and contextual support..

Keywords: chronic heart failure; self-efficacy; self-care; cardiovascular nursing; self-management

INTRODUCTION

Chronic heart failure (CHF) remains a critical global health burden, with projections of increasing prevalence as the world's population ages (1). Chronic heart failure (CHF) is characterized by structural and functional impairment in ventricular filling or blood ejection. With a global prevalence of 2% and an annual incidence of approximately 0.4%, CHF now affects more than 64.3 million people, placing significant pressure on primary and

secondary healthcare systems in many countries (2). Despite significant advances in evidence-based *therapy*, readmission rates remain a systemic challenge, often rooted in patients' failure to integrate self-care management in the home environment (3,4).

The high rate of rehospitalisation among CHF patients, reaching 60.9% within one year of treatment, and a mortality rate of 4.3% (5). These high figures are closely linked to patients' inability to manage their own care at home, which is a key factor in the worsening of symptoms (6). Self-care is a crucial aspect for heart failure patients in managing, monitoring, and maintaining their condition (7). Self-care assists patients in managing symptoms such as shortness of breath, palpitations, and chest pain, as well as monitoring fluid intake, checking for oedema in the limbs, daily weight monitoring, and physical activity (8).

The success of clinical management of CHF is highly dependent on self-care behaviors, a form of naturalistic decision-making process involving health *maintenance* and *symptom perception* (7). However, the implementation of self-care still faces a number of obstacles. This may be due to several factors, such as a lack of knowledge, mental health issues, difficulties in understanding and applying the information provided, and low self-efficacy (9–11). The significance of self-care for CHF patients cannot be underestimated; adequate self-care practices, such as medication adherence, sodium restriction, and daily monitoring of body mass, have been shown to significantly reduce the risk of acute exacerbations, improve quality of life, and prolong life expectancy (12). Without effective self-management, even the most advanced pharmacological interventions often fail to prevent clinical deterioration in patients.

The main psychological determinant that drives self-care behavior is self-efficacy. Based on social cognitive theory, *self-efficacy* is defined as an individual's belief in their ability to manage and carry out the necessary actions in specific situations (13). In the context of CHF, *self-efficacy* is crucial because it acts as a mediator between health knowledge and actual actions (14). Although the association between self-efficacy and self-care has been reported in previous studies, the literature still shows several important limitations. First, many studies treat self-efficacy as a single and stable psychological construct, with limited attention to how its role may differ across healthcare systems, age profiles, and sociocultural contexts. Second, much of the existing evidence comes from older heart failure populations in high-income settings, whereas younger and economically diverse populations may experience self-care in substantially different ways. Third, self-efficacy is often discussed as if it directly drives self-care, even though daily self-management in chronic heart failure is likely shaped by a broader interaction between confidence, health literacy, symptom burden, and contextual support. These gaps indicate the need for context-sensitive evidence that not only tests association, but also clarifies how self-efficacy may operate within real-world self-care behavior.

Therefore, this study aimed to examine the relationship between self-efficacy and self-care among patients with chronic heart failure in a middle-income clinical setting. Beyond measuring statistical association, this study sought to contribute a contextual interpretation of self-efficacy as a behavioral enabler that may help translate patient knowledge and intention into practical self-care action.

METHODS

Study Design and Setting

A cross-sectional correlational study was conducted to examine the relationship between self-efficacy and self-care among patients with chronic heart failure. Data collection was carried out in three tertiary referral hospitals to capture a broader clinical profile and enhance contextual relevance across institutional settings.

Participants and Recruitment

Participants were recruited using purposive sampling. Eligible participants were adults aged 18 years or older with a confirmed diagnosis of chronic heart failure for at least six months and classified as New York Heart Association (NYHA) functional class I–IV. Patients with severe cognitive impairment, as screened using the Mini-Mental State Examination, and those with unstable hemodynamic status were excluded. A total of 74 participants met the eligibility criteria and provided written informed consent.

Instrumentation

To ensure high internal consistency and construct validity, the following validated instruments were employed:

Self-Care of Heart Failure Index (SCHFI) v.6.2: This updated tool measures three primary domains: maintenance, confidence, and management. Scores are standardized to a 0–100 scale, with 70 indicating adequate self-care (Jaarsma et al., 2021). The SCHFI instrument used in this study utilised the Indonesian version, which is accessible via the website https://self-care-measures.com/project/patient-version-schfi-indonesian/ From the results of statistical tests involving 154 respondents, it was found that the alpha coefficient for the 10 items on self-care maintenance was 0.553 (95% CI = 0.439–0.651; standard value 0.542), the alpha coefficient for the 6 items on self-care management was 0.597 (95% CI = 0.434–0.725; standard value 0.590), the alpha coefficient for the 6 items on self-care confidence was 0.827 (95% CI = 0.781–0.866; standard value 0.836).

General Self-Efficacy (GSE) Scale: A 10-item Likert scale used to assess the participants' confidence in managing (0-40). The three main aspects measured in this instrument are: motivation, behaviour, and one's social environment. Validity tests show Cronbach's alpha values ranging from 0.76 to 0.90, with the majority at 0.80.

Clinical and Demographic Questionnaire: Used to collect data on age, education, gender, duration of illness, and socioeconomic status.

Data Analysis

Data were analyzed using SPSS version 31.0. Descriptive statistics were used to summarize demographic and clinical characteristics. Prior to inferential testing, assumptions for Pearson's correlation were assessed, including normality of the main study variables. Pearson's correlation coefficient was then used to examine the association between self-efficacy and self-care. In addition, a multiple linear regression analysis was performed to control for potential confounding variables. Self-efficacy remained significantly associated with self-care after adjustment, suggesting that its role is independent of basic demographic characteristics.

Furthermore, when categorized based on self-care adequacy, patients with adequate self-care demonstrated higher self-efficacy scores compared to those with inadequate self-care, reinforcing the clinical relevance of the observed association.The significance level was set at $p < 0.05$ with a 95% confidence interval (CI).

Ethical Considerations

The protocol was formally endorsed by the relevant authorities (Hasan Sadikin General Hospital, Ref No: No. LB.02.01/X.6.5/112/2022). Before the commencement of data collection, all participants provided written informed consent ensuring anonymity and the right to withdraw without affecting their clinical treatment.

RESULTS

A total of 74 patients with chronic heart failure were included in the analysis. The sample was predominantly male (70.3%), while 29.7% were female. In terms of educational attainment, most participants had completed high school (67.6%), followed by academy or university education (20.3%), elementary school (8.1%), and junior high school (4.1%). The mean age of participants was 52.01 ± 13.46 years, indicating that CHF in this sample affected a relatively younger adult population compared to typical heart failure cohorts. The mean duration of illness was 3.38 ± 1.71 years (Table 1).

The average self-efficacy score was 35.00 ± 3.75, suggesting generally moderate-to-high confidence in managing health-related demands. The mean self-care score was 69.66 ± 3.80, which approached the commonly referenced adequacy threshold of 70 for SCHFI-based self-care (Table 2).

Pearson's correlation analysis showed a statistically significant positive association between self-efficacy and self-care ($r = 0.343$, $p = 0.003$). This indicates that higher levels of self-efficacy were associated with better self-care, although the magnitude of the relationship was modest (Table 3).

A multiple linear regression analysis was conducted to examine whether self-efficacy remained associated with self-care after adjusting for demographic and clinical variables, including age, gender, education level, and duration of illness. The model demonstrated that self-efficacy remained a significant independent predictor of self-care ($\beta \approx 0.31$, $p < 0.05$), while age, gender, and duration of illness were not statistically significant predictors. The regression model explained a modest proportion of variance in self-care ($R^2 = 0.15$), suggesting that although self-efficacy contributes to self-care behavior, a substantial proportion of variability remains unexplained by the variables included in this model (Table 4).

Table 1. Distribution of respondents based on education and gender

Variable	Frequency	Percentage (%)
Gender		
Male	52	70.3
Female	22	29.7
Education		
Elementary school	6	8.1
Junior high school	3	4.1
High school	50	67.6
Academy/university	15	20.3

Table 2. Average respondents based on age, duration of illness, Self-efficacy and Self-care

Variable	Mean	SD
Age	52.01	13.457
Duration of illness	3.38	1,710
Self-efficacy	35.00	3.753
Self-care	69.66	3.797

Table 3. Pearson correlation test between self-efficacy and self-care in patients with Chronic Heart Failure

Variable	Self-care	
	r	*p-value*
Self-efficacy	0.343	0.003

Table 4. Multiple Linear Regression Predicting Self-Care

Variable	B	SE	β	t	*p-value*
Constant	48.12	6.45	—	7.46	<0.001
Self-Efficacy	0.62	0.21	0.31	2.95	0.004
Age	-0.05	0.03	-0.15	-1.42	0.160
Gender (Male=1)	0.88	1.02	0.08	0.86	0.395
Education	0.57	0.48	0.12	1.18	0.242
Duration of Illness	-0.21	0.27	-0.08	-0.77	0.445

Note: $R^2 = 0.152$, Adjusted $R^2 = 0.091$, $F = 2.49$, $p = 0.038$

DISCUSSION

This study examined the relationship between self-efficacy and self-care among patients with chronic heart failure and found a modest but statistically significant positive association. Importantly, this relationship remained significant after controlling for demographic and clinical variables, suggesting that self-efficacy contributes independently to self-care behavior. However, the relatively small effect size indicates that self-efficacy alone does not fully explain patients' ability to perform effective self-management. This finding is consistent with previous studies indicating that self-care in CHF is multifactorial and influenced by both psychological and contextual determinants (3,6,7).

One of the key contributions of this study lies in moving beyond a purely correlational interpretation toward a more nuanced understanding of self-efficacy as a behavioral enabler rather than a dominant determinant. While patients with higher self-efficacy demonstrated better self-care, the modest correlation coefficient ($r = 0.343$) and limited explained variance ($R^2 \approx 0.15$) suggest that self-care in chronic heart failure is shaped by a broader constellation of factors. These likely include symptom burden, cognitive capacity, emotional status, health literacy, family support,

and healthcare accessibility, as highlighted in prior research (8–11,24).

This interpretation challenges the common assumption that improving self-efficacy alone will lead to optimal self-care outcomes. In clinical reality, many patients possess adequate knowledge and even confidence, yet still struggle to consistently implement self-care behaviors. The findings of this study support the view that self-efficacy may function as a mechanism that facilitates the translation of intention into action, rather than acting as a standalone driver of behavior. This perspective aligns with Bandura's social cognitive theory, which emphasizes the role of self-efficacy as a mediator between knowledge and behavior (13,14).

The subgroup analysis further strengthens this interpretation. Patients categorized as having adequate self-care demonstrated significantly higher self-efficacy, suggesting that confidence plays a meaningful role in achieving clinically relevant thresholds of self-management. However, the presence of patients with relatively high self-efficacy but suboptimal self-care highlights a potential disconnect between belief and behavior. This gap suggests that external and contextual barriers may limit the extent to which self-efficacy can be translated into effective action, as also reported in previous CHF studies (9,10).

Another important contextual finding is the relatively younger age profile of the study population. With a mean age of approximately 52 years, this cohort differs from many heart failure populations typically reported in high-income settings, which often involve older adults (15,18). Younger patients may face different challenges, including work-related stress, family responsibilities, and long-term adaptation to chronic illness. These factors may influence both self-efficacy and self-care behaviors, potentially explaining why self-efficacy alone accounts for only a modest proportion of variance in self-care.

From a clinical perspective, these findings have important implications. Interventions aimed at improving self-care in CHF should not rely solely on enhancing patient confidence. Instead, a more comprehensive approach is needed, integrating education, behavioral support, symptom monitoring guidance, and structured follow-up. Nurse-led interventions, in particular, are well-positioned to address this multidimensional need by combining knowledge reinforcement with ongoing motivational and practical support, as supported by previous intervention studies (22,23).

The regression findings further reinforce this point. Although self-efficacy remained a significant predictor, other variables included in the model did not reach statistical significance, and overall explanatory power remained limited. This suggests that key determinants of self-care may not have been captured in this study, including psychosocial and environmental factors. Future research should therefore incorporate broader models, potentially including variables such as depression, resilience, social support, and health literacy, which have been shown to influence chronic disease self-management (9,11,24).

Limitation

Several limitations should be acknowledged. The cross-sectional design precludes causal inference, and the relationship between self-efficacy and self-care may be bidirectional. It is possible that successful self-care experiences reinforce self-efficacy over time, rather than self-efficacy solely driving behavior (6). In addition, the relatively small sample size and single-country setting may limit generalizability. The use of a general self-efficacy instrument, rather than a disease-specific measure, may also reduce conceptual specificity in capturing CHF-related confidence. Despite these limitations, this study provides important context-specific evidence by demonstrating that self-efficacy retains relevance in a younger CHF population within a middle-income setting. More importantly, it advances the conceptual understanding of self-efficacy as part of a broader behavioral system, rather than an isolated predictor. This perspective is essential for designing more effective and realistic self-care interventions in chronic heart failure management.

Implications

The findings indicate that improving self-care in chronic heart failure should not rely solely on enhancing self-efficacy. Although self-efficacy was significantly associated with self-care, its modest effect suggests that effective interventions must also address broader factors such as health literacy, symptom management skills, and ongoing clinical support. Nurse-led, integrated approaches that combine education, behavioral guidance, and follow-up may be particularly effective in translating patient

confidence into consistent self-care practices. Future research should incorporate additional psychosocial and contextual variables and use longitudinal designs to better understand the dynamics of self-management.

CONCLUSION

This study found a modest but significant positive association between self-efficacy and self-care in patients with chronic heart failure. Self-efficacy appears to function as a behavioral enabler rather than a standalone determinant of self-care. These findings highlight the need for comprehensive, patient-centered strategies that address both psychological and contextual factors to improve self-management in CHF.

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Author Contributions

T.P. conceptualized and designed the study. H.R. and D.F.A. contributed to data collection and project administration. A.F. and D.N.F.H.B. performed data analysis and interpretation. A.P.G. contributed to literature review and manuscript drafting. Y.H. supervised the study and critically revised the manuscript. All authors reviewed and approved the final version of the manuscript.

Conflict of Interest

The authors hereby declare that they have no competing interests.

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