

Nursing Insights: A Descriptive Correlational Study Linking Self-Efficacy, Self-Care Behaviors, and Quality of Life in Heart Failure Care

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Abstract

Background: Heart failure (HF) is a life-threatening condition affecting over 64 million people globally, leading to significant morbidity, mortality, and healthcare costs. Effective self-efficacy and self-care behaviors are crucial for managing HF and improving patients' quality of life (QoL). **Aim:** Investigate the correlation between self-efficacy, self-care behaviors, and quality of life in patients with heart failure. **Design:** A descriptive, cross-sectional, correlational design was employed. **Setting:** The Cardiology department and Outpatient clinic at Ain Shams University Hospitals, Egypt. **Subject:** A purposive sample of 84 adult patients was included. **Tools:** Four tools were utilized to collect data: **Tool (I):** A demographic and medical data sheet, **Tool (II):** The European Heart Failure Self-care Behavior Scale, **Tool (III):** The Minnesota Living Heart Failure Questionnaire, & **Tool (IV):** The Heart Failure Self-Efficacy Scale. **Results:** The study demonstrated a strong positive correlation between self-care behaviors and quality of life (QoL) ($r = 0.819$, $p < 0.001$). In contrast, self-efficacy showed significant negative correlations with both self-care behaviors ($r = -0.765$, $p < 0.001$) and QoL ($r = -0.723$, $p < 0.001$), consistent with the tools' scoring structure, where higher self-efficacy and lower self-care behavior scores represent favorable outcomes. Additionally, younger age, higher educational level, and employment status were associated with improved self-efficacy and QoL scores. **Conclusion:** The findings indicate that enhancing self-care behaviors is linked to improved quality of life in heart failure patients. Additionally, self-efficacy serves as a significant predictor of self-care behaviors and quality of life. Addressing barriers to effective self-care is essential for improving outcomes in this population. **Recommendation:** Ongoing educational programs should be developed for heart failure patients, with an emphasis on boosting self-efficacy and encouraging effective self-care behaviors.

Keywords: Heart Failure, Quality of Life, Self-Care Behaviors, & Self-Efficacy.

Introduction

Heart failure (HF) is a serious and life-threatening condition that impairs the heart's ability to function properly, leading to high rates of illness and death, reduced physical ability, lower quality of life, and major healthcare costs. It represents an escalating global health concern, impacting more than sixty-four million people worldwide (Lippi & Sanchis-Goma, 2020).

Heart failure is linked to various biological risk factors, such as high blood pressure, high cholesterol levels, and abdominal obesity, as well as behavioral factors including smoking,

excessive alcohol consumption, poor dietary choices, and insufficient physical activity. These factors contribute to the onset of metabolic syndrome. Many of these risks can be mitigated by increasing awareness and educating patients about the significance of adopting effective self-care practices to manage their condition and enhance their quality of life (McHorney et al., 2021).

According to Jaarsma et al. (2021), self-care refers to the actions people take to maintain their health through preventive and health-promoting behaviors. Self-care in the context of HF encompasses behaviors including cutting back on alcohol use, giving up smoking, adhering to medication regimens, exercising,

keeping an eye on body weight, and eating a balanced diet.

It encompasses three core components: self-care maintenance, self-care management, and self-care confidence. Confidence plays a crucial role in influencing health outcomes, as it supports effective self-care practices. Management involves responding appropriately to symptoms, while maintenance focuses on routine monitoring and adherence to treatment (Jiang & Wang, 2021).

Managing symptoms and preventing complications of heart failure requires effective self-care. However, many patients encounter barriers to self-management, such as limited social support, financial instability, lack of health insurance, and restricted access to adequate healthcare services. Nearly half of individuals with HF fail to adhere to treatment guidelines, which contributes to frequent hospital readmissions and adverse health outcomes. Inadequate self-care is strongly associated with a worsened prognosis and increased risk of hospitalization. Therefore, it is essential that patients actively engage in and take responsibility for self-care behaviors to enhance their overall health (Asadi et al., 2019).

Self-efficacy is vital for effectively managing heart failure. Increasing patients' confidence in their ability to handle their condition results in better adherence to treatment, improved health outcomes, and enhanced overall well-being (Huang & Chair, 2022). Low self-efficacy, inadequate self-care behaviors, and negative illness perceptions can hinder the management of heart failure, leading to poorer patient outcomes. Self-care interventions are designed to assist individuals in adopting effective self-care practices (Riegel et al., 2021).

The World Health Organization defines quality of life (QoL) as an individual's assessment of their life circumstances, influenced by cultural variables, personal objectives, expectations, and worries (Wulfovich et al., 2022). In the context of healthcare, quality of life (QoL) refers to how patients view the effects of their illness and treatment on their everyday lives, including their social, psychological, and physical well-being (Seid et al., 2023). Poor quality of life is closely linked to worse

outcomes for heart failure patients, such as higher mortality, more frequent readmissions to the hospital, and poor self-care adherence (Wisnicka et al., 2022).

Managing HF involves a complex daily routine that includes strict adherence to multiple medications and lifestyle modifications, such as dietary limitations, fluid intake, regular physical activity, and monitoring body weight. Self-care plays a vital non-pharmacological role in HF management by helping stabilize symptoms, enhance health outcomes, prevent disease progression and additional comorbidities, and reduce the need for frequent healthcare visits, including hospital readmissions. Ultimately, effective self-care contributes to lower healthcare costs and decreased rates of morbidity and mortality (Abdel Rahman, 2022).

Significance of the study

One of the most common and crippling cardiovascular diseases in the world, HF considerably raises rates of morbidity and mortality (Li et al., 2021; Virani et al., 2021). It accounts for 15–20% of outpatient cardiac cases in Egypt, making it a growing public health concern (Abdelhamid et al., 2025). This high incidence emphasizes the critical need for efficient management techniques within Egypt's healthcare system and indicates the rising burden of cardiovascular disease. Heart failure is a common consequence of coronary artery disease and is linked to reduced health-related quality of life, frequent hospital stays, and significant financial expenses (Zhu et al., 2020; Savarese et al., 2023).

Given these challenges, understanding the factors that influence patients' self-care and coping abilities is essential for improving outcomes. This study is particularly significant as it investigates the correlation between self-efficacy, self-care behaviors, and QoL among Egyptian patients with HF.

Aim of the study

Investigate the correlation between self-efficacy, self-care behaviors, and quality of life in patients with heart failure.

Research questions:

1. What are the levels of self-efficacy, self-care behavior, and quality of life in patients with heart failure?
2. What are the correlations between self-efficacy, self-care behavior, and quality of life in patients with heart failure?

The study hypothesis:

There will be a significant correlation between self-care behaviors, self-efficacy, and quality of life in patients with heart failure.

Subjects and Method

Research design:

A descriptive cross-sectional correlational design was employed.

Setting:

This study was conducted in the Cardiology department and the Outpatient clinic at Ain Shams University Hospitals, Egypt. This is one of the biggest educational hospitals, and it has the staff and cutting-edge equipment needed to provide patient treatment.

Subjects:

The study involved a purposive sample of 84 adult male and female patients. Using the "<https://clincalc.com/Statistics/>" sample size calculation tool, the sample size was determined at an Alpha error of 5% (95% significance level) and a B error of 20% (power of the study 80%). A final sample of 84 participants was obtained by adding 10% (9 patients) to the predicted sample size of 75 to account for possible dropouts.

Inclusion criteria:

- 20–60-year-old patients.
- Able to communicate and provide informed consent.
- Present during data collection.
- For a minimum of six months, they had a verified diagnosis of heart failure (as recorded in their health records).

Exclusion criteria:

- Unconscious patients.
- Diagnosed with mental or terminal illness.
- Undergoing regular dialysis for chronic kidney disease, or had other medical conditions such as stroke or epilepsy.

Tools of data collection:

Tool (I): Demographic and Medical Data Sheet

The researchers developed this tool based on a review of recent relevant literature, and it comprises two main parts:

1. Demographic data, including age, gender, marital status, educational level, employment, residence, and monthly income.
2. Medical data, such as the duration of the disease, frequency and duration of previous hospitalization, and presence of other comorbidities.

Tool (II): The European Heart Failure Self-care Behavior Scale (HFSBS):

The scale was originally developed by **Jaarsma et al. (1998)** and has since been validated by various research experts (**Jaarsma et al., 2009; Lee et al., 2013; Ostergaard et al., 2017**) to evaluate heart failure patients' self-care behaviors. It consists of nine items divided into two dimensions. The first dimension, consulting behaviors (four items), assesses whether patients seek medical advice when experiencing worsening symptoms such as increased shortness of breath, legs or feet swelling, weight gain of more than 2 kg within a week, or fatigue. The second dimension, adherence to the treatment regimen (five items), evaluates patients' perceived adherence to key self-care practices, such as regular exercise, fluid restriction, a low-sodium diet, daily weight monitoring, and medication compliance.

Scoring system:

The scale's nine items are rated using a five-point Likert scale, where 1 indicates "a little of the time," 2 "some of the time," 3 "a good bit of the time," 4 "most of the time," and 5 "all of the time." Based on their total scores, patients were categorized into three levels of self-care behavior: **Good** ($\geq 75\%$ of the total score), **Fair** (60% to less than 75%), and **Poor** (less than 60%) (**Fahim et al., 2019**).

Tool (III): Minnesota Living Heart Failure Questionnaire (MLHFQ):

The Minnesota Living with Heart Failure Questionnaire (MLHFQ) is a self-administered tool specifically designed to evaluate the quality of life (QoL) in patients with heart failure (**Rector, Kubo & Cohn, 1987**). This questionnaire consists of 21 items that reflect common negative effects associated with heart

failure. Participants are instructed to rate how much each item has impacted their daily life over the past four weeks, utilizing a Likert scale with six points, ranging from 0 (not at all) to 5 (very much). The items are divided into three categories: physical (8 items), emotional (5 items), and disease-specific (8 items, which contribute only to the total score) (Bilbao et al., 2016).

For scoring, the total score, calculated by adding all item responses, ranges from 0 to 105, with lower scores indicating a higher quality of life.

Tool (IV): The Heart Failure Self-Efficacy Scale (HFSES):

The Heart Failure Self-Efficacy Scale (HFSES) is designed to assess a patient's confidence in performing self-care tasks related to managing heart failure (Riegel et al., 2000). This scale consists of 15 items, each prompting respondents with the question, "How confident are you..." regarding a specific self-care behavior. Participants respond utilizing a 5-point Likert scale, which ranges from "not at all confident" (1) to "extremely confident" (5).

The HFSES is grounded in Bandura's self-efficacy theory and encompasses four domains relevant to effective heart failure self-management: symptom management, medication management, lifestyle and behavioral changes, and emotional and social support. The scale includes five items related to symptom management, three items for medication management, four items addressing lifestyle changes, and three items focused on emotional and social support.

For scoring, each item is rated from 1 to 5 points. The total score is calculated by summing the scores for all items, resulting in a range from 15 points, indicating low confidence, to 75 points, reflecting high confidence. The scores are categorized as follows: **low self-efficacy** (15-34 points), suggesting a need for intensive support and education; **moderate self-efficacy** (35-54 points), indicating some confidence but still at risk; and **high self-efficacy** (55-75 points), suggesting that the patient is likely capable of managing their condition effectively (Riegel et al., 2000).

Validity of the study tools:

Five experts specializing in medical-surgical nursing and cardiology evaluated the content validity of the study tools. The experts thoroughly reviewed the tools to ensure their relevance, clarity, and appropriateness for the study objectives. Based on their feedback, necessary modifications and refinements were made to enhance the tools' validity and alignment with the study's requirements.

Reliability of the study tools:

Cronbach's Alpha was used to assess the study tools' dependability, a widely recognized statistical measure for assessing internal consistency. This coefficient ranges from 0 to 1.0, with 1.0 indicating perfect reliability and a minimum acceptable value of 0.65. Scores below this threshold suggest inadequate reliability of the instrument. The Cronbach's alpha values for Tools II, III, and IV in the current study were 0.89, 0.91, and 0.90, respectively. These values demonstrate high reliability across all tools, indicating their consistency and suitability for accurately measuring the intended variables.

Pilot study:

Eight patients, representing 10% of the overall sample, participated in a pilot trial. It sought to evaluate the method and tools' application, clarity, and viability. Feedback and observations from this phase led to necessary adjustments to improve the tools' effectiveness and ensure they aligned with the study objectives. The main study sample did not include the patients who were involved in the pilot testing.

Ethical consideration:

The Ethical Committee for Scientific Research at the Faculty of Nursing, Helwan University, Egypt, granted ethical approval for the study (Ref. No. 42) on July 14, 2024. Before initiating the study, official permission was secured from the Cardiology Department and the Outpatient Clinic administrator after a detailed explanation of the study's objectives and purpose. Informed consent was obtained from the participating patients, who voluntarily agreed to join the study after receiving clear information about its aim and procedures. Patients were assured of their right to withdraw at any time without repercussions on the

quality of care they received. Additionally, privacy and data confidentiality were strictly maintained through data coding, and the researchers guaranteed that all collected information would be exclusively used for research purposes.

Fieldwork of data collection procedure:

The study process began with an official letter from the Faculty of Nursing at Helwan University, sent to Ain Shams University Hospitals. This letter outlined the goals and title of the study and was directed to the administrative staff of the Cardiology Department and Outpatient Clinic. The head of the cardiology department was informed about the study's purpose, as well as the planned start date and time for data collection.

After conducting a comprehensive literature review, the researchers created Tool I, which includes a demographic and medical data sheet. Tools II (European Heart Failure Self-Care Behavior Scale), III (Minnesota Living Heart Failure Questionnaire), and IV (Heart Failure Self-Efficacy Scale) were translated into Arabic and reviewed for accuracy by bilingual experts. Five experts in cardiology and medical-surgical nursing assessed these tools' content validity, focusing on their relevance, comprehensiveness, clarity, and applicability.

Furthermore, a pilot study was conducted, followed by an assessment of the reliability of Tools II, III, and IV, confirming their internal consistency and overall measurement reliability.

Eligible patients were recruited based on predefined inclusion criteria. Researchers introduced themselves, explained the study's purpose, and obtained informed consent from each participant. Individual interviews were conducted using the study tools to gather the necessary data. For participants who could not read the questionnaires, researchers read the items aloud and accurately recorded their responses.

Data collection took place during morning and afternoon shifts, two days a week, with each interview lasting approximately 30 to 40 minutes. The entire data collection process spanned four months, from early August 2024 to the end of November 2024.

Statistical analysis

Data analysis was performed using Version 26 of the Statistical Package for the Social Sciences (SPSS). The one-sample Kolmogorov-Smirnov test was used to assess the normality of the data distribution. A summary of the data was given by descriptive statistics, which included means and standard deviations for quantitative variables and frequencies and percentages for qualitative variables.

Due to the failure to meet the normal distribution assumption, non-parametric tests were employed. The Mann-Whitney U test was utilized to compare continuous variables between two groups, while the Kruskal-Wallis test was used for comparisons involving more than two groups. The Pearson correlation coefficient (r) was calculated to evaluate the correlations between continuous variables. A significance level of $p < 0.05$ was established for statistical analysis.

Results

Table (1) illustrates that (53.6%) of the studied patients' ages ranged between 50–60 years old, with a mean of 57.26. Additionally, more than half of them were male (56%), married with the percentage of (53.6%). Regarding the level of education, more than two-thirds (67.9%) of the studied patients couldn't read or write. Concerning employment, about two-thirds (60.7%) of the studied patients weren't employed. In addition, regarding residence, the majority of the studied patients (85.7%) lived with others. Finally, in relation to monthly income, nearly two-thirds (61.9%) of them didn't have sufficient monthly income.

Table (2) shows that (40.5%) of the studied patients had been diagnosed with heart failure for > 10 years. Among these patients, (64.3%) reported a history of previous hospitalization > 2 times with a hospital duration of one week (39.3%). Considering the presence of comorbidities, (78.6%) of the studied patients suffered from diseases, especially (78.8%) of the studied patients suffered from hypertension.

Figure (1) illustrates self-efficacy levels. The studied patient has moderate, high, & low self-efficacy with percentages (41.7%, 33.3%, & 25%), respectively.

Figure (2) illustrates self-care behaviors. The studied patient has fair, poor, & good self-care behaviors with percentages (38%, 33%, & 29%), respectively.

Figure (3) shows the total quality of life score; the studied patient has poor, fair, & good quality of life scores with percentages (51.2%, 32.1% & 16.7%), respectively.

Table (3) presents the association between the demographic attributes with self-efficacy, self-care behaviors, and quality of life of the studied patients. The analysis reveals significant differences across various age groups, with younger patients demonstrating higher self-efficacy and quality of life scores, particularly in those aged 50-60. Gender did not show significant variations in self-efficacy or quality of life. Marital status indicated that divorced individuals had higher self-efficacy, while widowed patients reported the best quality of life. Educational level was strongly correlated with all three measures, where those unable to read or write exhibited better outcomes compared to university-educated individuals. Employment status also influenced outcomes, with employed patients showing higher self-efficacy. Notably, individuals whose work required physical effort reported lower self-efficacy and quality of life scores. Finally, while living arrangements did not significantly affect the outcomes, monthly income levels

were associated with self-care behaviors and quality of life, indicating that those with insufficient income had poorer health-related outcomes.

Table (4) reveals a strong and statistically significant positive correlation between self-care behaviors and quality of life in the studied patients ($r = 0.819$, $p < 0.001$), suggesting that improvements in self-care behaviors are linked to better quality of life. Conversely, a significant negative correlation was identified between self-efficacy and self-care behaviors ($r = -0.765$, $p < 0.001$). This inverse relationship aligns with the scoring system of the instruments used, where higher self-efficacy scores and lower self-care behavior scores both indicate favorable outcomes. Additionally, a significant negative correlation was observed between self-efficacy and quality of life ($r = -0.723$, $p < 0.001$), indicating that enhancements in self-efficacy are related to improved quality of life, consistent with the interpretation of the tools' scoring.

Table (1): Patients' distribution according to their demographic attributes(N=84)

Items	N	%
Age		
20 – less than 40	19	22.6
40 – less than 50	20	23.8
50-60	45	53.6
Min. – Max.	34.0 – 60.0	
Mean $\pm$ Standard Deviation.	57.26 $\pm$ 7.52	
Gender		
Male	47	56.0
Female	37	44.0
Marital status		
Single	8	9.5
Married	45	53.6
Divorced	10	11.9
Widow	21	25.0
Educational level		
Can't read or write	57	67.9
Technical/ Secondary	11	13.1
University education	16	19.0
Employment		
Employed	33	39.3
Non employed	51	60.7
If employed (n = 33)		
Require physical exertion	17	51.5
No requiring physical exertion	16	48.5
Residence		
Alone	12	14.3
Living with others	72	85.7
Monthly income		
Sufficient monthly income (Enough)	32	38.1
Insufficient monthly income (Not enough)	52	61.9

Table (2): Patients' distribution according to medical data (N = 84)

Medical data	N	%
Duration of illness		
1-5 years	18	21.4
6-10 years	32	38.1
> 10 years	34	40.5
Previous hospitalization		
1 - 2 times	30	35.7
>2 times	54	64.3
Length of hospital stay		
Less than 1 week	29	34.5
1 week	33	39.3
More than 1 week	22	26.2
Presence of co-morbidities		
No	18	21.4
Yes	66	78.6
If yes, describe these co-morbidities (n=66)		
DM	28	42.4
HTN	52	78.8
IHD	13	19.7
CLD	18	27.3

DM: Diabetes mellitus

IHD: Ischemic Heart Disease

HTN: Hypertension

CLD: Chronic Liver Disease

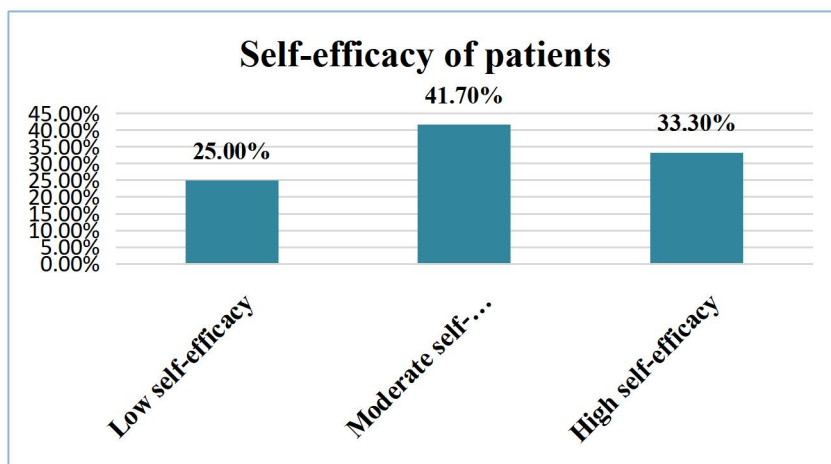


Figure (1): Distribution of the patients' percentages based on self-efficacy (N = 84)



Figure (2): Distribution of the patients' percentages based on self-care behavior (N = 84)

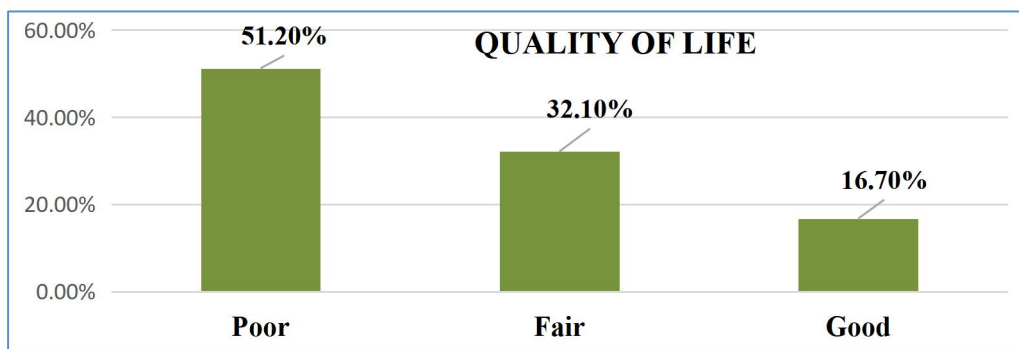


Figure (3): Distribution of the patients' percentages based on quality of life (N = 84)

Table (3): Association between patients' demographic attributes with self-efficacy, self-care behaviors, and quality of life (N = 84):

Items	Self-efficacy	Self-care behaviours	Quality of life
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Age			
20 – less than 40	57.16 $\pm$ 12.32	25.26 $\pm$ 3.87	30.95 $\pm$ 9.44
40 – less than 50	44.69 $\pm$ 11.68	38.20 $\pm$ 8.10	61.33 $\pm$ 19.42
50-60	37.10 $\pm$ 10.73	41.50 $\pm$ 5.72	79.90 $\pm$ 21.09
H(p)	22.70 (<0.001*)	32.763 (<0.001*)	38.841 (<0.001*)
Gender			
Male	45.28 $\pm$ 13.27	36.81 $\pm$ 8.66	57.28 $\pm$ 23.61
Female	46.24 $\pm$ 13.78	35.11 $\pm$ 9.56	60.92 $\pm$ 26.17
U(P)	833.50 (0.745)	778.500 (0.410)	803.000 (0.548)
Marital status			
Single	46.75 $\pm$ 7.46	41.63 $\pm$ 3.85	54.63 $\pm$ 2.50
Married	46.96 $\pm$ 13.86	33.98 $\pm$ 8.34	50.07 $\pm$ 19.72
Divorced	52.60 $\pm$ 16.70	28.50 $\pm$ 11.45	50.01 $\pm$ 34.52
Widow	39.33 $\pm$ 10.43	42.00 $\pm$ 5.90	83.57 $\pm$ 16.57
H(p)	8.843 (0.031*)	19.862 (<0.001*)	27.197 (<0.001*)
Educational level			
Can't read or write	41.16 $\pm$ 11.99	40.54 $\pm$ 31.27	70.81 $\pm$ 20.28
Technical/ Secondary	50.55 $\pm$ 5.37	31.27 $\pm$ 3.90	40.09 $\pm$ 5.92
University education	58.56 $\pm$ 12.95	23.38 $\pm$ 2.50	29.31 $\pm$ 9.01
H(p)	22.807 (<0.001*)	45.520 (<0.001*)	43.736 (<0.001*)
Employment			
Employed	49.15 $\pm$ 12.83	33.66 $\pm$ 9.73	42.58 $\pm$ 16.56
Non employed	43.47 $\pm$ 13.43	37.60 $\pm$ 8.32	69.43 $\pm$ 23.39
U(P)	625.00 (0.047*)	661.00 (0.096)	311.500 (<0.001*)
If employed (n = 33)			
Require physical exertion	40.47 $\pm$ 8.44	40.71 $\pm$ 7.35	54.53 $\pm$ 12.30
No requiring physical exertion	58.38 $\pm$ 9.96	26.19 $\pm$ 5.33	29.87 $\pm$ 9.48
U(P)	24.50 (<0.001*)	18.00 (<0.001*)	24.00 (<0.001*)
Residence			
Alone	46.33 $\pm$ 13.29	35.75 $\pm$ 10.43	55.17 $\pm$ 19.27
Living with others	45.60 $\pm$ 13.53	36.11 $\pm$ 8.88	59.50 $\pm$ 25.54
U(P)	406.00 (0.739)	430.50 (0.985)	413.00 (0.808)
Monthly income			
Sufficient monthly income	48.97 $\pm$ 15.54	31.63 $\pm$ 9.37	49.16 $\pm$ 21.80
Insufficient monthly income	43.70 $\pm$ 11.63	38.79 $\pm$ 4.74	64.87 $\pm$ 24.64
U(P)	629.00 (0.061)	590.00 (0.018*)	523.00 (0.004*)

H: Kruskal-Wallis test

SD: Standard deviation

U: Mann-Whitney test

*Significant at $P \leq 0.05$

Table (4): Correlations between self-efficacy, self-care behaviors, and quality of life of the studied patients (N = 84)

Variables	Self-efficacy	Self-care behaviors	Quality of life
Self-efficacy	-	r= -0.765 P= <0.001**	r= -0.723 P= <0.001**
Self-care behaviors	r= -0.765 P= <0.001**	-	r= 0.819 P= <0.001**
Quality of life	r= -0.723 P= <0.001**	r= 0.819 P= <0.001**	-

**Correlation is significant at the 0.01 level (2-tailed).

r: Pearson coefficient

Discussion

Heart failure is often the advanced stage of cardiovascular disease, characterized by symptoms such as shortness of breath, orthopnea, exertional dyspnea, fatigue, edema, and both cognitive and emotional challenges. Management of these symptoms typically involves medications, lifestyle changes, and self-care practices. Successful management relies heavily on patients' adherence to treatment and self-care routines. A lack of knowledge and skills in self-care can lead to worsened health, increased hospitalizations, and higher healthcare costs, ultimately impacting quality of life. Identifying factors that affect self-care is crucial for improving patient outcomes and reducing complications and mortality (**Abdel Rahman, 2022**).

As a rising global health issue, heart failure outcomes are significantly influenced by a patient's ability to engage in self-care. Effective self-care has been associated with improved quality of life, reduced mortality rates, fewer hospital readmissions, and lower healthcare expenses. Consequently, healthcare providers must recognize and address barriers that prevent patients from participating in self-care, as these barriers can exacerbate health issues and increase the risk of early death (**Vellone et al., 2020**).

Part I: Demographic attributes of the studied patients

In terms of the personal data of the participants included in the current research, the findings revealed that more than half of the studied were between 50 and 60 years old, with a mean age of 57.26. This finding was congruent with **Abdel Rahman (2022)**, who concluded that the mean age of the study subjects was 58 years. Conversely, though the findings contradicted those of **Ramadan et al. (2024)**, who stated that the study's results showed that less than half of the individuals being studied were in the forty-to sixty-year age range. According to the researchers, this suggests a connection between old age and cardiovascular disease.

Regarding gender, the study showed a predominance of males. This outcome was conforming to **Alghafee Aldihan, & Alharbi (2021)**, who point out that women made up less than half of the heart failure patients. However, this finding runs counter to research by **Ramadan et al. (2024)**, which stated that less than two-thirds of the sample were female.

Concerning marital status, the current study found that over half of the studied patients were married. The findings are consistent with **Raffaa et al. (2020)**, who showed that married people made up more than half of those with heart failure. According to the researchers, this might be because the majority of the patients in the study were between the ages of forty and sixty.

In relation to educational level, among the studied patients, more than two-thirds of the studied patients were illiterate. This result was supported by **Namjoo et al. (2021)**, who reported that bachelor's degrees were held by more than 10 percent of the participants in their study. On the contrary, the discovery is in disagreement with **Ramadan et al. (2024)**, who demonstrated that fewer than one-third of the patients had bachelor's degrees, according to the research's findings about the patients' educational levels. This may have to do with the idea that informed patients find using electronic health care to be simple.

According to the study's findings on employment, the current research stated that two-thirds of the studied patients were not working. The aforementioned findings agree with **Ramadan et al. (2024)**, who discovered the same results. However, these findings contradict those of **Al-Saikhhan (2020)**, who demonstrated that over a third of patients were not employed.

Concerning residence and monthly income, the results showed that the majority of the studied patients were living with others. In addition, nearly two-thirds of them had insufficient monthly income. This conclusion is consistent with **Mahmoud et al. (2023)**, who discovered comparable findings. These results also aligned with research conducted in Egypt by **Ghattas et al. (2022)**, which found that all participants had inadequate income and resided with their families. On the opposite side, the findings are inconsistent with those of **Wallström et al. (2020)**, who illustrated that over half of the studied patients live alone.

Part II: Medical data of the studied patients

Regarding disease duration, the current study reported that more than one-third of the studied patients had heart failure for more than ten years. Participants in the study have been ill for more than three years. This finding is consistent with **Namjoo et al. (2021)**, who found that a little over one-third of participants had been ill for more than three years. According to the researchers, this could be linked to the increasing death rate among HF patients, especially those who are elderly, habitual smokers, or have comorbidities.

According to this study, two-thirds of the participants had been admitted to the hospital more than twice. This conclusion is congruent with that reported by **Mahmoud et al. (2023)**. The findings also supported those of **Pobrotyn et al. (2021)**, who discovered that most patients had been hospitalized in the year prior. Additionally, **Kolasa et al. (2021)** found that about two-fifths of patients had been admitted to the hospital at least once in the preceding year.

The study findings found that over three-quarters of participants had comorbid conditions, particularly hypertension. This aligns with findings from **Ramadan et al. (2024)**, **Al-Saikhhan (2020)**, & **Yu et al. (2022)**, who also reported high rates of comorbidities especially non-cardiovascular diseases and hypertension among patients. Similarly, **Mohamed et al. (2019)** observed hypertension in a significant portion of both study and control groups. However, these findings contrast with those of **Dessie et al. (2021)**, who noted fewer comorbidities among their participants. The researchers suggest that the high prevalence of comorbidities may be due to heart failure commonly occurring alongside other chronic conditions.

Part III: Association between the studied patient's self-efficacy, self-care behaviors, quality of life, and demographic attributes

The guidelines of the European Society of Cardiology (ESC) emphasize the significance of self-care in heart failure. According to **McDonagh et al. (2021)**, adherence to treatment recommendations, lifestyle change, monitoring of disease symptoms, and the patient's capacity to respond to HF exacerbations should be the main goals of self-care in heart failure.

The present study found that there are statistically significant differences between self-efficacy, self-care behaviors, and quality of life with age, marital status, educational level, and nature of employment. However, there are no statistically significant differences between self-care behaviors with employment status. This agrees with **Wisnicka et al. (2022)**, who concluded that there was no statistically significant relationship between self-care behaviors and employment. Self-care

behaviors weren't affected by the employment status.

The current study found no statistically significant differences between self-efficacy, self-care behaviors, and quality of life with gender and residence. Moreover, there are no statistically significant differences between self-care behaviors and employment. Additionally, there are no statistically significant differences between self-efficacy and monthly income. These results contradict **Seid et al. (2023)**, who reported that rural heart failure patients had significantly poor HRQOL compared to urban patients. From the researchers' point of view, this might be due to lower literacy levels and limited access to quality healthcare in rural areas, which may hinder adherence to self-care practices and negatively affect HRQOL.

Part IV: Correlation between self-efficacy, self-care behavior, and quality of life of the studied patients

The study concluded that there was a high, statistically significant positive correlation between self-care behaviors and quality of life among the studied patients. Additionally, a statistically significant negative correlation was observed between self-efficacy and self-care behaviors. This inverse relationship reflects the scoring direction of the instruments used, where higher scores in self-efficacy and lower scores in self-care behaviors both indicate better outcomes.

This finding aligns with **Abdel Rahman (2022)**, who also identified a positive correlation between self-care maintenance, confidence, and the quality of life of heart failure patients. Specific self-care practices such as monitoring for ankle swelling, maintaining appointments, following a low-salt diet, staying physically active, and adhering to medication were associated with better patient outcomes. Additionally, the findings are consistent with **Seid et al. (2023)**, who noted the complexity of the relationship between self-care and HRQOL, though generally affirming a positive association. This finding is in contrast to that of **Asadi et al. (2019)**, who explained that there was no relationship between self-care practices and quality of life and linked this to Iranian customs and

viewpoints, such as the value placed on life with children and the significance of their care for older patients.

This study found that there is a significant negative correlation between self-efficacy and quality of life. This inverse correlation aligns with the scoring system of the instruments used, suggesting that improvements in self-efficacy are associated with enhanced quality of life. This finding aligns with **Baradaranfard et al. (2018)**, who clarified that there is a direct relation between quality-of-life score and cardiac self-efficacy ($P < 0.001$). In addition, Pearson correlation coefficients showed a direct and significant correlation between the scores of quality-of-life dimensions and the score of cardiac self-efficacy (in all cases, $P < 0.001$).

Finally, the findings of this study supported the proposed hypothesis, demonstrating a significant correlation between self-efficacy, self-care behaviors, and quality of life among patients with heart failure. Patients with higher levels of self-efficacy were more likely to engage in effective self-care behaviors, which in turn contributed to an enhanced quality of life. These results underscore the importance of empowering patients to strengthen their confidence and ability to manage their condition effectively. It agrees with **Wisnicka et al. (2022)**, who reported that patients with heart failure who were dissatisfied with their health exhibited lower quality of life scores and inadequate self-care practices.

Conclusion

The present study concluded that there was a significant difference in self-efficacy, self-care behaviors, and quality of life based on demographics. Younger, divorced, university-educated individuals with non-physically demanding jobs showed higher levels in all three areas. The study found a strong positive correlation between self-care behaviors and quality of life, meaning better self-care is linked to higher quality of life. It also found significant negative correlations between self-efficacy and both self-care behaviors and quality of life, due to the scoring method, where higher self-efficacy scores and lower self-care scores indicate better outcomes. Collectively, these nursing insights highlight

how self-efficacy and self-care behaviors jointly play a pivotal role in enhancing the overall quality of life among patients receiving heart failure care.

Recommendations

The current study recommended:

- Ongoing educational programs should be developed for heart failure patients, with an emphasis on boosting self-efficacy and encouraging effective self-care behaviors. So, these initiatives could involve workshops, counseling, and customized informational resources.
- Future research should aim for larger and more diverse samples to confirm these findings and examine the long-term effects of self-efficacy on quality of life. Additionally, adopting longitudinal study designs could provide valuable insights into causal relationships and the effectiveness of interventions over time.

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