

Relationship Between Self-Efficacy, Functional Capacity, Fatigue, and Quality of Life Among Patients with Congestive Heart Failure

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ABSTRACT

Introduction : Congestive Heart Failure (CHF) is a chronic medical condition in which the heart is unable to pump blood effectively to meet the metabolic needs of the body's tissues. When the heart's pumping function is impaired, blood can back up (congestion) in the lungs, liver, abdomen, or lower extremities, causing fluid buildup (edema) in these tissues.

Objective: Congestive Heart Failure (CHF) is a chronic medical condition in which the heart is unable to pump blood effectively to meet the metabolic needs of the body's tissues. When the heart's pumping function is impaired, blood can back up (congestion) in the lungs, liver, abdomen, or lower extremities, causing fluid buildup (edema) in these tissues

Method: The type of research used is quantitative with the research design used being descriptive analytical through an approach. Cross Sectional namely conducting a cross tab between the dependent variable and the independent variable. The sample in this study was 92 CHF patients. Data analysis using the test pesonality with a confidence level of 95%.

Result: The results of the study were to find out between the dependent variable, namely the quality of life in CHF patients and the independent variables consisting of self efficacy, six minute walk test And fatigue. The results of the statistical test of the self efficacy variable obtained a p value of 0.019, the variable six minute walk test obtained a p value of 0.009 and the variable fatigue obtained a p value of 0.000

Conclusion: It is recommended that patients with congestive heart failure (CHF) improve compliance with pharmacological and non-pharmacological therapy through ongoing education, healthy lifestyle changes, and active family involvement in the care process to prevent relapse and improve quality of life

Keywords: Fatigue, Self Efficacy, Six Minute Walk Test

Introduction

Congestive heart failure is a complex clinical syndrome that can be caused by myocardial dysfunction (systolic and diastolic function), valvular or pericardial disease, or other factors that can impede blood flow due to fluid retention, often manifesting as pulmonary congestion, peripheral edema, dyspnea, and fatigue (Lusiani & Adnan, 2024).

In 2021, the WHO listed cardiovascular disease as the leading cause of death worldwide. Approximately 17.9 million people died from cardiovascular disease in 2019, making it the leading cause of death worldwide. With an estimated 26 million people worldwide suffering from heart failure, heart failure is a major global health problem. Heart failure affects approximately 1.26–6.7% of the Asian population, with 5.8 million Americans dying from the disease annually (Pratama et al., 2024).

There are no reliable statistics on the frequency of CHF in Indonesia. Statistics from the Indonesian Ministry of Health indicate that the number of cardiovascular disease cases increased last year. In 2018, the prevalence of heart disease diagnosed by a doctor reached 1.5% across all age groups, according to statistics from the Basic Health Research (Riskesdas), including heart failure. Meanwhile, data from the 2023 Indonesian Health Survey (SKI) showed the prevalence of heart disease at 0.85% (Riskesdas, 2018; SKI, 2023).

According to the 2023 SKI, the province with the highest prevalence of heart disease among all ages was Yogyakarta Special Region (DIY) with 1.67%, while the Bangka Belitung Islands province ranked tenth with 0.87%, exceeding the average prevalence across Indonesia (SKI, 2023). Based on data from CHF patients at Sejiran Regional Hospital (RSUD Setason) over the past three years, there were 247 cases in 2022, a decrease of 109 cases in 2023, and an increase of 118 cases in 2024 as of October 2024.

Due to their inability to fully participate in daily life, CHF patients are at higher risk of experiencing mental health problems, such as sadness, worry, stress, and poor emotional regulation. The patient's financial situation, disease prognosis, and recovery time are other considerations. Their standard of living can be drastically affected by all of these factors (Latifardani & Hudiawati, 2023).

A person's quality of life can be described as their sense of their place in life in relation to their aspirations, hopes, concerns, and the cultural and ethical framework in which they live. A person's social relationships, physical and mental health, and environmental conditions are all factors that contribute to their quality of life.

Physical health is only one component of quality of life; other aspects include mental health, social relationships, and the surrounding environment. Heart failure can reduce the quality of life of sufferers. This is due to the fact that heart failure also has many detrimental effects on changes in basic needs, including altered body perception, failure to practice good self-efficacy or change daily habits, persistent fatigue, future-focused worries, and depression. Heart failure symptoms such as shortness of breath, exercise intolerance, and fatigue are examples of patients' inability to adapt to their situation (Haraldstad et al., 2019; Seid et al., 2022).

The quality of life of CHF sufferers can be improved if they can prevent excessive fatigue, have good self-efficacy, and perform the six-minute walk test when there is no shortness of breath, either independently at home or with a medical professional.

Among the previous studies on fatigue in CHF patients that researchers collected is the study by Latifardani and Hudiyawati (2023) entitled "Fatigue is Associated with Quality of Life in Heart Failure Patients," which examined how fatigue affects patients' quality of life. The researchers in this study used a cross-sectional design with descriptive correlational methodology. Respondents were 61.3% men and 39.6% women, with the majority in the 56-65 age group. Furthermore, 70.8% of respondents reported a low quality of life, and 77.4% were classified as experiencing extreme fatigue. A chi-square test was used to analyze the data, resulting in a p-value of 0.001. The findings of this study indicate a strong correlation between fatigue levels in heart failure patients and their quality of life.

Based on previous studies and supported by the results of a preliminary survey conducted by researchers in the cardiac and adult inpatient clinics, through interviews with several patients with CHF, it was found that patients experience symptoms of prolonged fatigue, which reduces their confidence when engaging in physical activity. Furthermore, the 6-MWT test in CHF patients is not yet commonly performed at Sejiran Setason Regional General Hospital. However, according to cardiologists, this test could become the recommended standard for CHF patients. Facing various obstacles, such as cost and patient knowledge, doctors then educate patients about occasionally performing the 6-MWT test at home, measuring their breathlessness and non-breathlessness. Furthermore, regarding costs, there is currently no process for establishing a dedicated cardiac therapy room. Therefore, researchers are interested in examining "The Relationship Between Fatigue, Self-Efficacy, and the Six-Minute Walk Test with Quality of Life in Congestive Heart Failure Patients at Sejiran Setason Regional General Hospital in 2025."

Objective

Congestive Heart Failure (CHF) is a chronic medical condition in which the heart is unable to pump blood effectively to meet the metabolic needs of the body's tissues. When the heart's pumping function is impaired, blood can back up (congestion) in the lungs, liver, abdomen, or lower extremities, causing fluid buildup (edema) in these tissues

Method

This approach emphasizes the measurement or observation period of data from the dependent variable (quality of life of CHF patients) and independent factors (fatigue, self-efficacy, and 6-MWT). At Sejiran Setason Regional General Hospital, West Bangka, the quality of life of CHF patients is the focus of this study, which seeks to examine the relationship between fatigue, self-efficacy, and 6-MWT. The type of research used is quantitative with the research design used being descriptive analytical through an approach. Cross Sectional namely conducting a cross tab between the dependent variable and the independent variable. The sample in this study was 92 CHF patients. Data analysis using the test personality with a confidence level of 95%.

Results

Frequency Distribution of Quality of Life in CHF Patients at Sejiran Setason Regional Hospital in 2025

Quality of Life	Total	Percentage (%)
Worse	15	16,3
Bad	36	39,1
Medium	33	35,9
Good	8	8,7
Total	92	100

Based on Table above, it was found that 36 patients (39.1%) were categorized as having a poor quality of life in CHF patients at Sejiran Setason Regional Hospital. This number is higher than those categorized as very poor, moderate, or good.

Frequency Distribution of Fatigue in CHF Patients at Sejiran Setason Regional Hospital in 2025

<i>Fatigue</i>	Total	Percentage (%)
Normal	21	22,8
Light	38	41,3
Heavy	33	35,9
Total	92	100

Based on Table above, fatigue was found in 38 CHF patients at Sejiran Setason Regional Hospital (RSUD Sejiran Setason) in the mild fatigue category (41.3%). This number is higher than those in the normal and severe fatigue categories.

Frequency Distribution of Self-Efficacy of CHF Patients at Sejiran Setason Regional Hospital in 2025

Self-Efficacy	Total	Percentage (%)
Low	16	17,4
Medium	24	26,1
Tinggi	52	56,5
Total	92	100

Based on Table above, it was found that 52 CHF patients (56.5%) had high self-efficacy. This number is higher than those in the low and moderate self-efficacy categories.

Frequency Distribution of Six-Minute Walk Tests for CHF Patients at Sejiran Setason Regional Hospital in 2025

6-SMWT	Total	Percentage (%)
Bad	7	7,6
Good	59	64,1
Very good	26	28,3
Total	92	100

Based on Table above, it was found that 59 patients (64.1%) performed the six-minute walk test in the good category of CHF at Sejiran Setason Regional Hospital. This number is higher than those in the poor or very good categories.

The Relationship Between Fatigue and Quality of Life in CHF Patients at Sejiran Setason Regional Hospital in 2025

Variable	N	<i>p-value</i>	<i>Pearson correlation</i>	<i>R Tabel</i>	<i>R Square</i>
<i>Fatigue and Quality of Life</i>	92	0,000	0,430	0,205	0,194

Based on Table above, the $p\text{-value} < 0.05$ is obtained, so it can be concluded that there is a relationship between fatigue and the quality of life of CHF patients. The degree of relationship between fatigue and the quality of life of CHF patients is 0.430, which is included in the moderate correlation level with a positive relationship direction. For the $r\text{-square}$ value, if expressed as a percentage, it becomes 19.4%, which means that fatigue only affects 19.4% of the quality of life in CHF patients, the remaining 81.6% is influenced by other factors.

The Relationship Between Self-Efficacy and Quality of Life in CHF Patients at Sejiran Setason Regional Hospital in 2025

Variable	N	<i>p-value</i>	<i>Pearson correlation</i>	<i>R Tabel</i>	<i>R Square</i>
Self-Efficacy and Quality of Life	92	0,019	0,287	0,205	0,059

Based on Table above, the $p\text{-value} < 0.05$ is obtained, so it can be concluded that there is a relationship between self-efficacy and the quality of life of CHF patients. The degree of relationship between self-efficacy and the quality of life of CHF patients is 0.287, which is included in the moderate correlation level with a positive relationship direction. For the $r\text{-square}$ value, if expressed as a percentage, it becomes

5.9%, which means that self-efficacy only influences 5.9% of the quality of life in CHF patients, the remaining 94.1% is influenced by other factors.

The Relationship Between the Six-Minute Walk Test and Quality of Life in CHF Patients at Sejiran Setason Regional Hospital in 2025

Variable	N	<i>p-value</i>	<i>Pearson correlation</i>	<i>R Tabel</i>	<i>R Square</i>
Six-Minute Walk Test and Quality of Life____	92	0,000	0,383	0,205	0,167

Based on table above, the $p\text{-value} < 0.05$ is obtained, so it can be concluded that there is a relationship between the six-minute walk test and the quality of life of CHF patients. The degree of relationship between the six-minute walk test and the quality of life of CHF patients is 0.383 which is included in the moderate correlation level with a positive relationship direction. For the $r\text{-square}$ value if expressed as a percentage, it becomes 16.7%, which means the six-minute walk test only affects 16.7% of the quality of life in CHF patients, the remaining 83.3% is influenced by other factors.

Discussion

The results of this study obtained a $p\text{-value}$ (0.019) with $\alpha < 0.05$, concluding that there is a relationship between self-efficacy support and quality of life in CHF patients. The correlation between self-efficacy and quality of life was 0.244, which is considered a moderate correlation with a positive relationship.

According to the researchers' assumptions, based on the results of the study above, self-efficacy is related to quality of life in CHF patients. Patients with high levels of self-efficacy tend to be able to better manage their health condition, thus experiencing an improved quality of life across physical, psychological, and social aspects. In other words, the greater the patient's confidence in their ability to cope with and manage their disease, the better their perceived quality of life.

The Six-Minute Walk Test (6MWT) is a simple functional test used to measure a person's exercise capacity and functional ability by calculating the maximum distance they can walk in six minutes on a flat surface. This test reflects a patient's ability to perform daily activities and is often used to assess physical status and response to treatment in patients with various cardiopulmonary conditions, including heart failure, chronic obstructive pulmonary disease (COPD), and vascular disease (Sari & Putra, 2023).

In patients with Congestive Heart Failure (CHF), 6MWT results are often used as a physical indicator to assess functional status and predict quality of life. The distance traveled during this test is positively correlated with quality of life, with longer walking distances indicating better physical capacity and a higher quality of life (Pinto & Souza, 2021).

The results of this study obtained a $p\text{-value}$ (0.000) with $\alpha < 0.05$, thus concluding that there is a relationship between the six-minute walk test and quality of life in CHF patients. The degree of correlation between the six-minute walk test and quality of life is 0.383, which is included in the moderate correlation level with a positive relationship direction.

According to the researchers' assumptions, based on the results of the study above, the six-minute walk test is strongly associated with quality of life in CHF patients, as patients who are able to cover a longer distance in the 6-MWT generally report a better quality of life, both physically and psychosocially. Therefore, the 6-MWT can be an effective evaluation tool for assessing functional capacity and predicting quality of life in CHF patients, while also assisting in monitoring therapy response.

Fatigue is a persistent feeling of tiredness or lack of energy that does not improve with rest, which interferes with a person's ability to carry out normal daily activities. Fatigue can be physical, mental, or a combination of both, and is often experienced as a symptom of various chronic medical conditions, including heart disease, cancer, and neurological disorders (Bower, 2022).

Fatigue is also a feeling of excessive tiredness that persists despite rest, often experienced by patients with chronic heart failure. This fatigue affects the patient's physical and mental abilities, negatively impacting daily activities and overall quality of life, particularly in the physical, emotional, and social aspects (Ramadhani & Wulandari, 2021).

According to the researchers' assumptions, based on the research results above, fatigue is related to the quality of life in CHF patients, which refers to how fatigue interferes with the patient's ability to carry out daily activities and their emotional and social aspects. Therefore, fatigue management needs to be a priority in efforts to improve the overall quality of life of CHF patients.

Conclusion

This study demonstrated that self-efficacy, functional capacity as measured by the Six-Minute Walk Test, and fatigue were significantly associated with quality of life among patients with congestive heart failure at Sejiran Setason Regional Hospital in 2025. These findings suggest that interventions aimed at improving self-efficacy, enhancing functional capacity, and reducing fatigue may contribute to better quality of life in patients with congestive heart failure. Therefore, comprehensive management that integrates patient education, lifestyle modification, and continuous clinical support is recommended to optimize patient outcomes.

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