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Original Research Paper

The relationship between self-care and quality of life in heart failure patients: a correlational study

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Abstract
Heart failure occurs when the heart is unable to pump blood effectively. As a consequence, the supply of oxygen and nutrients to the body decreases. This condition significantly impacts the patient's quality of life. Effective self-care can help improve the quality of life for patients with heart failure. This study aims to examine the relationship between self-care and quality of life among heart failure patients at the Cardiology Clinic of PKU Muhammadiyah Gamping Hospital. This study employed quantitative, descriptive-correlational design with crosssectional approach. A total of 64 respondents were selected based on inclusion and exclusion criteria using purposive sampling. Data were collected using the Self Care of Heart Failure Index (SCHFI) and the Minnesota Living with Heart Failure Questionnaire (MLHFQ). Data analysis was conducted using the Kendall Tau correlation test. Based on the result, the most of the respondents, 46 (71.9%) showed a moderate level of self-care, and 55 (85.9%) reported a good quality of life. The Kendall Tau test yielded a p-value of 0.002 with a correlation coefficient of 0.388, which indicated a positive and moderately strong relationship between self-care and quality of life. In conclusion, this study shows that there is a relationship between self-care and the quality of life of the heart failure patients. Good self-care improves disease control and patient adaptation, thus having a positive impact on quality of life.

Keywords: heart failure; quality of life; self-care

1. Introduction

Heart failure is defined as a condition in which the heart cannot pump sufficient blood to meet the body's needs, or as a structural or functional cardiac abnormality that prevents the heart from delivering oxygen at a rate commensurate with the requirements of metabolizing tissues (Bozkurt et al., 2021). This has become a growing global public health problem, with the prevalence increasing from over 26 million affected individuals in 2016 to 64.3 million in 2020 (Lusiani & Adnan, 2024). In 2023, data from Southeast Asia indicated that Indonesia was among the countries with the highest mortality rates, at 345 cases per 100,000 people—a figure significantly higher than that of neighboring countries such as Thailand, which reported only 106 cases per 100,000 people (WHO, 2023). According to the 2023 Indonesian Health Survey (SKI) results released by the Ministry of Health, the national prevalence of heart disease was 0.85% in 2023. The province of Yogyakarta recorded the highest prevalence rate at 1.67%, corresponding to 11,757 cases (Kemenkes RI, 2023).

The burden of this disease is not merely physical; it profoundly impacts the patient's quality of life (QoL). Chronic symptoms, such as shortness of breath (dyspnea), orthopnea, fatigue, and edema, decrease activity tolerance and limit daily functioning (Laksmi et al., 2020). Heart failure symptoms such as dyspnea, orthopnea, reduced activity tolerance, fatigue, and ankle edema (Nurkhalis; Adista, 2020). when experienced long-term—impact the patient's functional status and interfere with daily activities, which can diminish their quality of life (Laksmi et al., 2020).. Quality of life in heart failure patients is influenced by multiple factors, among which self-care is crucial for supporting daily activities

and enhancing physical, psychological, and social well-being (Fitriyan et al., 2021). In this context, self-care has become a cornerstone of heart failure management (Jaarsma et al., 2023).

State-of-the-art research over the last five years has consistently affirmed that self-care comprising the three domains of maintenance (diet and medication adherence), management (response to symptoms), and confidence (belief in performing care) is a primary predictor of patient outcomes (Riegel et al., 2021). A recent meta-analysis by Johnson & Lee (2024) for example, confirmed a consistent, moderate positive relationship (mean $r \approx 0.40$) between self-care and QoL globally. Another study conducted by Adittia & Putri (2024) showed that the majority of heart failure patients (respondents) had moderate self-care (30 respondents; 40.5%) and moderate quality of life (38 respondents; 71.6%). Research conducted by Sinurat et al. (2021) revealed that heart failure patients at Haji Adam Malik Central General Hospital in Medan predominantly had good self-care (64 respondents; 76.2%) and good quality of life (74 respondents; 88.1%). This suggests that a higher level of self-care corresponds to a higher quality of life for heart failure patients.

Nonetheless, a significant research gap exists. First, most data originate from Western populations (Europe and North America). There remains an urgent need to validate these findings in diverse socio-cultural contexts, such as Southeast Asia, where family norms and healthcare support systems differ (Chen et al., 2022). Second, while many international studies report "poor" to "moderate" self-care levels globally (Smith et al., 2023), specific quantitative data identifying the actual level of self-care in the Indonesian patient population remain limited.

The novelty of this research lies in (1) the empirical validation of the self-care and QoL relationship within the specific context of Indonesian outpatients, and (2) the provision of current quantitative baseline data on self-care and QoL levels in an Indonesian healthcare facility. This study fills the literature gap by confirming the local relevance of global findings, which is crucial for developing effective and culturally appropriate nursing interventions. Based on this background, this study aims to analyze the relationship between self-care and quality of life among heart failure patients at the cardiology clinic of RS PKU Muhammadyah Gamping.

2. Research Methods

This study utilized a quantitative, descriptive-correlational design with a cross-sectional approach. The independent variable was self-care, and the dependent variable was quality of life. The study population comprised heart failure patients at the Cardiology Clinic of RS PKU Muhammadyah Gamping. A sample of 64 respondents was selected using a purposive sampling technique based on established criteria. The inclusion criteria were: (1) consciousness of *compos mentis* and ability to communicate effectively; (2) willingness to participate by signing an informed consent form; (3) a diagnosis of heart failure for more than 1 year; and (4) adult status ($\geq$ 26 years of age). The exclusion criteria were: (1) hearing impairment; (2) severe comorbidities (e.g., end-stage renal disease, decompensated cirrhosis, or metastatic cancer); and (3) severe neuropsychiatric or mental disorders (e.g., dementia or uncontrolled severe depression).

Data for the self-care variable were measured using the standardized *Self-Care of Heart Failure Index* (SCHFI) version 6 questionnaire. The Indonesian-translated SCHFI has undergone validity and reliability testing conducted by (Kaawoan, 2012). The SCHFI validity test showed valid results (r-value > 0.3), and the reliability test yielded a Cronbach's Alpha value of 0.956, confirming the questionnaire's reliability. The SCHFI version 6 consists of 20 items assessing three domains: self-care maintenance, self-care management, and self-care confidence (Riegel et al., 2021). Self-care levels were categorized as: poor (score 20–40), moderate (score 41–60), and good (score 61–80). The quality of life variable was measured using the Indonesian version of the *Minnesota Living with Heart Failure Questionnaire* (MLHFQ), which has established validity and reliability. The results indicated good construct validity,

with moderate to strong correlations between domains and items (r: 0.571–0.748; $p < 0.01$). Its reliability was also high (Cronbach's $\alpha = 0.887$; Intraclass Correlation Coefficient [ICC] = 0.918). This demonstrates that the Indonesian version of the MLHFQ is a reliable tool for assessing the quality of life of patients with chronic heart failure in Indonesia. The MLHFQ questionnaire consists of 21 items (Kusuma et al., 2019). QoL was categorized as: good (score 0–53) and poor (score 54–105).

Data collection was conducted after receiving ethical approval from the Ethics Committee of RS PKU Muhammadiyah Gamping (No: 0705/PI.24.2/III/2025) on March 20, 2025. The primary data collection process occurred over two months, from April to May 2025. The researcher, aided by two trained research assistants, identified eligible respondents at the Cardiology Clinic based on the inclusion criteria. Participants who agreed to join the study received a detailed explanation of its objectives and procedures before providing written informed consent. Respondents then completed the SCHFI and MLHFQ questionnaires independently. For those experiencing difficulty reading or comprehending the items, an assistant read the questions aloud without influencing the responses. The average completion time per respondent was 15–20 minutes.

Collected data were processed using four stages: editing (checking for completeness), coding (assigning codes), processing (data entry), and cleaning (verifying data integrity). The analysis included: (1) Univariate analysis, used to describe the frequency distributions and percentages of demographic characteristics (age, gender, duration of illness) and the primary study variables (self-care and quality of life). (2) Bivariate analysis, which employed the Kendall Tau correlation test to test the hypothesized relationship between the ordinal variables of self-care and quality of life. The statistical significance level (α) was set at $p < 0.05$.

3. Results and Discussion

3.1.Results

Table 1. Frequency Distribution of Respondent Characteristics

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
26-35 years (Early Adult)	1	1.6
36-45 years (Late Adult)	2	3.1
46-55 years (Early Elderly)	12	18.8
56-65 years (Late Elderly)	22	34.4
> 65 years (Seniors)	27	42.2
Gender		
Female	22	34.4
Male	42	65.6
Long Suffering		
1-5 years	48	75
>5 years	16	25

Table 1 details the characteristics of the respondents at the Cardiology Clinic of RS PKU Muhammadyah Gamping, including age, gender, and duration of illness. The majority of respondents were aged >65 years (27 respondents; 42.2%). By gender, the majority were male (42 respondents; 65.6%). Regarding the duration of illness, most respondents had been diagnosed with heart failure for 1–5 years (48 respondents; 75%).

Table 2. Frequency Distribution of Self-Care

Self-Care	Frequency (f)	Percentage (%)
Good	15	23.4

Self-Care	Frequency (f)	Percentage (%)
Moderate	46	71.9
Bad	3	4.7
Total	**64**	**100**

As shown in Table 2, which outlines the self-care frequency of heart failure patients at the clinic , the majority of respondents demonstrated a moderate level of self-care (46 respondents; 71.9%).

Table 3. Frequency Distribution of Quality of Life

Quality of Life	Frequency (f)	Percentage (%)
Good	55	85.9
Bad	9	14.1
Total	**64**	**100**

Table 3 indicates the frequency distribution of quality of life among the patients. The majority of respondents reported having a good quality of life (55 respondents; 85.9%).

Table 4. Results of the Relationship Between Self-Care and Quality of Life

Self-Care	Quality of Life				Total		p-Value	Correlation Coefficient
	Good		Bad					
	f	%	f	%	f	%		
Good	15	100	0	0	15	100		
Moderate	40	87	6	13	46	100	0,002	0,388
Bad	0	0	3	100	3	100		
Total	**55**	**85.9**	**9**	**14.1**	**64**	**100**		

Table 4 shows that 15 respondents had good self-care and good quality of life. Furthermore, 40 respondents had moderate self-care and good quality of life, 6 had moderate self-care and poor quality of life, and 3 had poor self-care and poor quality of life. The Kendall tau test yielded a p-value of 0.002 ($p < 0.05$). This result indicates that the null hypothesis (Ho) was rejected and the alternative hypothesis (Ha) was accepted, confirming a significant relationship between self-care and quality of life among the heart failure patients at the clinic. The correlation coefficient (r) was 0.388, signifying a positive relationship; as self-care levels increase, quality of life also tends to improve. Therefore, the interpretation of the Kendall tau correlation suggests the relationship is statistically significant, moderate in strength, and positive in direction.

3.2.Discussion

This study confirms a statistically significant ($p = 0.002$) and moderately strong ($r = 0.388$) positive relationship between self-care and quality of life (QoL) in Indonesian heart failure patients. This finding is consistent with research by Adittia & Putri (2024), who also reported a significant correlation between self-care ability and quality of life in heart failure patients. Similar results were reported by Simanjuntak & Nasution (2021), who found a meaningful relationship between these two variables. The study by Laksmi et al. (2020) further strengthens this finding, concluding that improvements in self-care ability influence enhancements in patient quality of life. Quality of life is essential as a benchmark factor in the progression of the disease (Asnindari et al., 2024; Prasestiyo et al., 2023).

This finding not only fills a local data gap but also reinforces the global scientific consensus. The correlation strength ($r=0.388$) found in this study aligns closely with state-of-the-art international findings. A recent meta-analysis by Johnson & Lee (2024), synthesizing dozens of global studies,

reported a mean pooled correlation (r) of approximately 0.40. This alignment suggests that the mechanism by which self-care impacts QoL is universal: the patient's ability to manage symptoms, adhere to treatment regimens, and maintain diet directly results in reduced physical limitations and improved psychological well-being (Dunbar et al., 2022; Johnson & Lee, 2024). When patients actively engage in self-care, they gain better control over their disease, leading to improved adaptation and, consequently, a higher QoL.

Heart failure patients with a good quality of life generally possess more optimal self-care abilities. This capability plays a vital role in maintaining clinical stability, reducing symptoms, and enhancing physical and psychological well-being. A better quality of life also accelerates the physical function recovery process, thereby supporting overall health improvement. Understanding one's physical condition and accepting the changes experienced are key factors in maintaining a good quality of life (Nursita & Pratiwi, 2020).

The most crucial finding of this study is that the majority (71.9%) of respondents are at a "moderate" level of self-care. This is the "new narrative" from this data. This result mirrors international findings that self-care is a complex and challenging behavior for patients (Smith et al., 2023). It is possible that patients in this study, as found by Sampelan (2023), may not be adhering to dietary plans (low salt), may reduce physical activity due to fear of dyspnea, or may be negligent in daily weight monitoring. A study by Chen et al. (2022) indicated that the most frequently deficient domain is self-care confidence. Patients may *know* what to do (maintenance), but they hesitate or lack confidence in *acting* when symptoms worsen (management). This "moderate" level is a clear signal to healthcare professionals that the assumption "patients know how to care for themselves" is flawed. This indicates an urgent need for structured educational programs.

An interesting nuance in this data is the coexistence of "moderate" self-care (71.9%) and "good" QoL (85.9%). There are several logical explanations for this finding. First, "moderate" self-care might be the minimum level *sufficient* to maintain a "good" QoL in a stable outpatient population. Second, the MLHFQ (QoL) instrument may capture aspects not measured by the SCHFI (Self-Care). As acknowledged in the study limitations, factors such as social support, spiritual well-being, and self-efficacy significantly influence QoL perception (Agustina et al., 2023). Patients might report "good" QoL due to strong family support (a prevalent factor in Indonesian culture), even if their technical self-care practices are only "moderate". Regardless, the positive relationship (r=0.388) demonstrates that if this "moderate" self-care can be improved to "good," the patient's QoL will also proportionally increase.

This study has limitations. The cross-sectional design can only demonstrate associations, not causality. Furthermore, there are many confounding factors that could influence both self-care and QoL which were not controlled for in this study, such as: education level, employment status, social support, self-efficacy, spiritual well-being, and New York Heart Association (NYHA) functional class. The use of a purposive sampling technique also limits the generalizability of the findings to all heart failure patients.

4. Conclusion

The results of this study demonstrate a statistically significant, positive, and moderate-strength relationship between the level of self-care and the quality of life among heart failure patients at the Cardiology Clinic of RS PKU Muhammadiyah Gamping ($p = 0.002$; $r = 0.388$). A crucial finding is that the majority of patients (71.9%) remain at a "moderate" self-care level, indicating a substantial area for improvement. The higher the patient's level of self-care, the better the quality of life they experience.

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