

## Self-Efficacy and Quality of Life Among Coronary Heart Disease Patients: A Cross-Sectional Study

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### Abstract

Coronary heart disease has a significant impact on functional status and quality of life. Self-efficacy plays a crucial role in self-care management for patients with coronary heart disease. The primary objective of this study was to examine the relationship between self-efficacy and quality of life in patients with coronary heart disease. A cross-sectional design was employed, and a sample of 100 patients with coronary heart disease was recruited through consecutive sampling from the Cardiology Department of the Regional General Hospital in Jambi Province. The instruments used in this study included the 6-item Self-Efficacy for Managing Chronic Diseases scale (SEMCD-6) and the World Health Organization Quality of Life Brief Version (WHOQOL-Bref). Data analysis was performed using Spearman correlation. The results demonstrated a positive correlation between self-efficacy and the four domains of quality of life, namely physical, psychological, social relations, and environmental domains ( $p$ -value < 0.05). These findings indicate that higher levels of self-efficacy are associated with better quality of life in patients with coronary heart disease. It is recommended that nurses enhance patient self-efficacy through motivation and education, both for the patients themselves and their families, as this can contribute to improvements in their quality of life.

**Keywords:** Self-efficacy; quality of life; coronary heart disease

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### Introduction

According to the World Health Organization (WHO, 2021), cardiovascular disease is the leading cause of death worldwide. Among cardiovascular diseases, coronary heart disease (CHD) and stroke contribute significantly to mortality rates (WHO, 2021). In Indonesia, data from the 2018 Basic Health Research indicated a 1.5% prevalence of cardiovascular disease (Kemenkes RI, 2018). Additionally, the 2016 Sampling Registration System reported that CHD is the second leading cause of death in Indonesia after stroke, accounting for 13.3% of cases (Usman et al., 2019).

CHD is a chronic disease that negatively impacts the functional status and quality of life (QoL) of patients (Goyal et al., 2005; Lukkarinen & Hentinen, 2006). Symptoms such as pain, limited activities, stress, fatigue, dyspnea, and other physical symptoms contribute to a decrease in health status and affect QoL (De Smedt et al., 2015; Mayou & Bryant, 1993; Treasure, 1999; Wenger et al., 1984).

Assessing QoL is crucial for evaluating improvements in physical function, pain reduction, the effectiveness of therapy, and as a predictor of mortality (Feola et al., 2012; Iqbal et al., 2010; Morys et al., 2016; Rumsfeld et al., 2013; Spertus, 2008). Poor QoL has been associated with increased hospitalization and higher mortality rates (Konstam et al., 1996). Moreover, a decreased QoL is indicative of a poor prognosis (Kelkar et al., 2016).

Previous studies have consistently demonstrated a low QoL among patients with cardiovascular disease, particularly in terms of physical and mental aspects (Karakurt et al., 2018). Additionally, research has shown that patients with impaired cardiovascular function experience a lower QoL (Juenger et al., 2002).

Several studies have demonstrated the relationship between self-efficacy and quality of life in patients with coronary heart disease (RoshanGhias et al., 2018; Sarkar et al., 2007; Shrestha et al., 2020). Self-efficacy plays a crucial role in enhancing patients' quality of life (Brink et al., 2012; Shrestha et al., 2020). It represents an individual's belief in their ability to independently undertake tasks and achieve goals, influencing self-care capabilities, medication adherence, and promoting both physical and mental well-being (Bandura, 1997). Increased self-efficacy is associated with positive changes in behavior and health status (Curtin et al., 2008). Tsay & Healstead (2002) reported that patients with high self-efficacy experienced lower rates of depression and better quality of life. Furthermore, Sarkar et al. (2007) demonstrated that low self-efficacy is linked to poor health status, depressive symptoms, and reduced quality of life. Barham et al. (2019) also identified low self-efficacy as a predictor of diminished quality of life in patients with CHD. These findings imply that improving self-efficacy can lead to enhancements in patients' quality of life.

The management of CHD extends beyond medication and includes modifications in health behaviors. Patients require good self-efficacy to effectively implement health behaviors and modify risk factors such as hypertension, hypercholesterolemia, smoking, diabetes, and other unhealthy lifestyles. These changes help prevent complications and enhance the patient's quality of life (Hajar, 2017; Rippe, 2018; Shrestha et al., 2020; Srivastava et al., 2017).

Research on self-efficacy and quality of life in patients with coronary heart disease holds significance. It provides insights into disease progression and treatment based on self-efficacy and quality of life indicators. Since self-efficacy can be modified, this study serves as a foundation for healthcare professionals, such as nurses and psychologists, to develop appropriate interventions aimed at increasing self-efficacy among CHD patients. Self-efficacy is closely linked to self-care management and the behaviors of CHD patients, including medication adherence and adopting a healthy lifestyle. These factors significantly impact the patient's quality of life. Furthermore, there is a limited number of studies investigating the relationship between self-efficacy and quality of life specifically in coronary heart disease patients in Indonesia.

## **Method**

### *Study design, location, and time period*

The present cross-sectional study was conducted at the Cardiac Polyclinic of the General Hospital in Jambi Province, spanning from September 2021 to November 2021.

### *Respondents*

For this study, the Raosoft sample size calculator was utilized to determine the sample size, resulting in a recruitment of 100 respondents diagnosed with coronary heart disease (CHD) through consecutive sampling. The inclusion criteria consisted of CHD patients (including UAP, STEMI, and NSTEMI) who were undergoing post-outpatient treatment at the Cardiology Clinic and expressed their willingness to participate as respondents. Patients who had experienced a decline in their health condition or had difficulty reading or writing were excluded from the study.

### *Measurements*

The participants in this study underwent interviews using a questionnaire that gathered data on various demographics, including age, gender, and education. Additionally, the questionnaire assessed self-efficacy and quality of life. Self-efficacy was measured using the self-efficacy managing chronic disease tool (SEMCD-6) developed by Lorig et al. (2001). Participants were asked to rate their self-efficacy on a scale of 1 to 10, where 1 indicated uncertainty and 10 indicated high certainty. The total score on the SEMCD-6 ranged from 6 to 60, with higher scores indicating greater self-efficacy. The validity and reliability of the Indonesian version of this questionnaire were previously established, with validity values ranging from 0.67 to 0.96 and a Cronbach's alpha value of 0.957 (Oktarina & Sulistiawan, 2022).

In addition, quality of life (QoL) was assessed using the World Health Organization Quality of Life-Bref (WHOQOL-Bref) questionnaire, which has been translated into Indonesian. The questionnaire, based on the WHOQOL-100, consists of 36 five-point Likert-type items. The score range for the WHOQOL-Bref is 0 to 100, with higher scores indicating a better quality of life (WHO, 2004).

### *Data Analysis*

The collected data were analyzed descriptively using the Statistical Package for Social Sciences (SPSS) software version 22. Univariate analysis was conducted, and the results were presented in terms of mean and standard deviation. Spearman correlation analysis was employed to examine the association between self-efficacy and quality of life.

### *Ethical considerations*

Research ethic were taken into account in this study. Approval was obtained from the Research Ethics Committee of General Hospital Jambi Province, and all participants provided their informed consent by signing the consent form.

## Results

Table 1 showed that the majority of respondents were aged between 40-54 years ( $n=49$ ), and male ( $n=56$ ), with high school education ( $n=46$ ). Respondents with an age range of 40-54 years have the highest self-efficacy  $40.18 \pm 5.28$ , while women have higher self-efficacy than men  $39.95 \pm 5.03$ . Also, respondents with a higher education level have the highest self-efficacy compared to others  $43.57 \pm 5.06$ .

Table 1

*Social demographic characteristics of the sample and self-efficacy (N=100)*

Variable	f	Self-Efficacy
		Mean ( $\pm$ SD)
Age		
40-54	49	40.18( $\pm$ 5.28)
55-69	44	39.61( $\pm$ 5.19)
70-84	7	36.85( $\pm$ 5.27)
Gender		
Man	56	39.5( $\pm$ 5.46)
Woman	44	39.95( $\pm$ 5.03)
Level of education		
No school	2	40
Elementary School	12	38( $\pm$ 4.28)
Junior High School	19	36.10( $\pm$ 4.73)
Senior High School	46	39.84( $\pm$ 4.76)
College	21	43.57( $\pm$ 5.06)

Based on table 2, the results showed that the score of SEMCD-6 was  $39,70 \pm 5,25$  and the range score was 27-53. The total score of physical, psychological, social, and enviromental domains were  $55,11 \pm 9,38$ ,  $51,69 \pm 9,05$ ,  $60,28 \pm 11,16$ ,  $60,66 \pm 8,85$ , respectively.

Table 2  
Levels of Self Efficacy and quality of life among patient in coronary heart disease

	Mean (SD)	Min-Max
Self-efficacy for management of chronic diseased	39,70 (±5,25)	(27-53)
Quality of Life		
Physical domain	55,11 (±9,38)	(31-75)
Psychological domain	51,69 (±9,05)	(38-75)
Social domain	60,28 (±11,16)	(31-94)
Environmental domain	60,66 (±8,85)	(38-88)

According to the findings presented in Table 3, the age group of 40-54 years exhibited the highest quality of life across all domains. Additionally, women demonstrated a higher quality of life in all domains, except for the social domain. Furthermore, respondents with a higher level of education (university) displayed the highest quality of life in all domains compared to those with lower levels of education.

Table 3  
Social demographic characteristics of the sample and quality of life (N=100)

Variables	Quality of Life			
	Domain Physique	Psychological Domain	Social Domain	Domain Environment
	Mean(±SD)	Mean(±SD)	Mean(±SD)	Mean(±SD)
Age				
40-54	55.63(±9.28)	52,81 (±10,06)	61,38(±12,31)	62.12(±9.05)
55-69	55.02(±9.28)	50,43(±8,23)	59,95(±9,72)	59.70(±8.66)
70-84	51.85(±11.42)	51,71(±5,70)	64,57(±10,67)	56.42(±7.36)
Gender				
Man	54.25(±9.76)	50,58(±9,20)	60,51(±10,48)	59.73(±8.17)
Woman	56.20(±8.85)	53,09(±8,75)	59,97(±12,08)	61.84(±9.60)
Level of education				
No school				
Elementary School	47(±4.24)	44	59,5(±21,92)	53(±4.24)
Junior High School	53.75(±8.20)	49,66(±8,16)	57,25(±11,52)	56.33(±10.61)
Senior High School	53.57(±8,20)	48,73(±5,12)	52,63(±6,69)	56.68(±5.52)
College				
	55.32(±9.98)	52,84(±9,33)	60,50(±9,46)	61.02(±7.87)
	57.57(±9.43)	53,71(±11,18)	68,52(±12,03)	66.66(±9.35)

Table 4 illustrates a positive correlation between self-efficacy and the quality of life (QoL) of patients across the physical, psychological, social, and environmental domains.

**Table 4**  
*Correlation between self-efficacy and quality of life*

Quality of Life	Self-Efficacy	
	R	<i>p-value</i>
Physical domain	0.209	0.037
Psychological domain	0.234	0.019
Social domain	0.477	0.000
Environmental domain	0.293	0.003

## **Discussion**

This study aims to explore the relationship between self-efficacy and quality of life in patients with coronary heart disease. The hypothesis testing revealed a positive correlation between self-efficacy and quality of life across the four domains: physical, psychological, social relations, and environmental.

The results of the univariate analysis indicated that respondents in the younger age group demonstrated higher levels of self-efficacy and quality of life. This finding aligns with previous studies that have reported a decrease in self-efficacy with increasing age, likely due to age-related declines in physical abilities (Salari et al., 2016). Aging is often accompanied by a decline in physical capabilities, an increased risk of comorbidities, and mortality (Barham et al., 2019).

Moreover, the average self-efficacy and quality of life scores in the physical, psychological, and environmental domains were found to be higher among women compared to men. These results differ from a study conducted by Garay et al. (2020), where women had lower quality of life than men. It should be noted that the current study had a higher number of male respondents than females. Bajaj et al. (2016) reported that men are more susceptible to risk factors for coronary heart disease, such as smoking, dyslipidemia, and a higher body mass index, compared to women.

Respondents with a higher level of education tend to exhibit higher levels of self-efficacy and experience better quality of life. This suggests that increased education levels are associated with greater knowledge and understanding. Consequently, individuals with higher education levels often

have improved personal and social relationships, as well as better access to health services and information.

A positive correlation was observed between self-efficacy and quality of life across all domains. These findings are consistent with previous studies that have established a relationship between self-efficacy and quality of life in patients with cardiovascular disease (Baradaranfard et al., 2018; Barham et al., 2019; RoshanGhias et al., 2018; Suresh et al., 2018; Wantiyah et al., 2020). Previous reports have indicated that low self-efficacy is associated with a higher symptom burden, physical limitations, and deteriorating health (Sarkar et al., 2007). Furthermore, self-efficacy is believed to be effective in modifying health behaviors among cardiovascular patients, such as adhering to dietary and physical activity guidelines (Holloway & Watson, 2002; Sol et al., 2011).

Kang & Yang (2013) identified various predictors of self-efficacy in patients with CHD, including occupation, body mass index, diagnosis, experience in receiving relevant education, and awareness of risk factors. Previous studies have also reported that self-efficacy serves as a predictor of health status in CHD patients undergoing angiography (Sullivan et al., 1998).

In the physical domain, patients with high self-efficacy are able to engage in their daily activities regardless of any symptoms they may experience (Lapier et al., 2009). This is because they have a sense of control over their lives, knowing that their well-being is not solely dependent on treatment. On the other hand, CHD patients with low self-efficacy in the psychological domain tend to experience feelings of anxiety, depression, and hopelessness about their condition (Sarkar et al., 2007). In contrast, patients with high self-efficacy are better able to minimize these negative emotions and have a more positive self-image and self-esteem (Yang et al., 2019). Regarding social relations, CHD patients with adequate self-efficacy tend to have positive personal and social relationships with their family and friends (Sarkar et al., 2007). Finally, in the environmental domain, patients with low self-efficacy may feel dissatisfied with the provided health services, lack access to sufficient information and transportation, and perceive a lack of time for recreational activities (Barham et al., 2019; Oktarina & Sulistiawan, 2020).



According to Bandura (1997), good self-efficacy leads to adaptive and positive health behaviors, particularly in preventing health problems. These health behavior efforts include adopting a healthy lifestyle, such as controlling blood pressure, managing stress, and engaging in physical activities (Brouwer-Goossensen et al., 2018). High self-efficacy boosts self-confidence and empowers CHD patients to exhibit positive health behaviors, ultimately improving their quality of life. Conversely, low self-efficacy negatively impacts health behaviors and leads to a lower quality of life. Individuals with low self-efficacy are less likely to actively participate in their treatment, adopt a passive attitude, and easily give up when faced with challenges (Souza e Silva et al., 2016). Saveh et al. (2013) demonstrated that self-efficacy is related to self-care in heart failure patients. Self-efficacy plays a crucial role in shaping health behaviors, thereby influencing quality of life (Cummings et al., 1982; Holloway & Watson, 2002; Oktarina & Sulistiawan, 2022; Tsay & Healstead, 2002).

Increasing patients' self-efficacy through non-pharmacological interventions administered by nurses has been shown to enhance their quality of life (Amaral et al., 2017; Rogers & Bush, 2015). Various efforts can be implemented to enhance self-efficacy in CHD patients, including educational interventions, providing deep breathing exercises, offering information on diet and exercise, pain management, medication guidance, delivering support and motivation, and fostering effective communication (Kennedy et al., 2007). Moreover, structured education programs have demonstrated the ability to increase self-efficacy in cardiovascular patients (Baljani et al., 2011; Zhou et al., 2018).

## **Conclusion,**

this study has established a correlation between self-efficacy and quality of life in each domain. Consequently, it is crucial for nurses to design specific interventions aimed at promoting the self-efficacy of CHD patients to enhance their quality of life. Providing education and motivation to increase self-efficacy in CHD patients are key strategies to improve their quality of life.

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