



Self-Care and Family Support Improves the Quality of Life of Coronary Heart Disease Patients

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Abstract

Coronary heart disease (CHD) can reduce the patient's quality of life. An important aspect in influencing the quality of life for CHD patients is self-care and family support for CHD patients, but this is often overlooked. This study aimed to determine the relationship between self-care and family support and the quality of life of patients with CHD at the Cardiac Clinic of RSUP Dr. M. Djamil Padang. A cross-sectional approach was used in this study. Totaly 303 participants were recruited in this study using purposive sampling technique. Instrument used were the MacNew Heart Disease Health-related Quality of Life Questionnaire, Self-Care of Coronary Heart Disease Inventory and family support questionnaires. The data analysis used was the Spearman rank test. The results showed that mean score of self-care was 64.95 (SD± 5.993), mean score of family support was 38.73 (SD± 2.827) and mean score of quality of life of was 143.96 (SD± 11.25). There was a relationship between self-care and quality of life ($r=0.500$; $p=0.001$) and there was a relationship between family support and the quality of life of CHD patients ($r=0.416$; $p=0.001$). Self-care and family support were positively related to quality of life at moderate level. Patients need to improve their ability to perform self-care while family members need to provide supports to patients in order to increase patients' quality of life. Health education about self-care needs to be provided to patients and their families to improve self-care skills and the quality of life of patients with coronary heart disease.

Keywords: Coronary Heart Disease, Family Support, Quality of Life, Self-Care.

INTRODUCTION

Every year, cardiovascular disease tops the list of leading causes of death globally (Global burden of cardiovascular disease, 2023). Stroke and coronary heart disease (CHD) account for 85% of deaths from cases due to cardiovascular disease. In 2017, CHD in Indonesia was ranked second cause of death after stroke with a mortality rate of 12.9% (Blasius et al., 2023). Based on data from Basic Health Research (2018) showed that based on medical diagnoses, the prevalence of heart disease in Indonesia was 1.5%, and in West Sumatra was 1.6% (Ministry of Health, 2018).

The development of atherosclerotic plaques in the lumen of blood vessels is a cause of CHD. As a result, there is a disruption of blood flow and oxygen delivery to the myocardium (Votta, 2023). In addition to causing psychological and physical problems, chronic diseases such as CHD also reduce the quality of life of patients (Work et al., 2021).



The quality of life of people with CHD also affected productivity at work and their well-being (Komalasari *et al.*, 2019). Therefore, it will be very important to know how the quality of life of CHD patients and the factors affecting it (Amurullah & Rosyid, 2021). Quality of life is also important in medical decision-making because quality of life is a predictor of treatment success and is prognostic (Haraldstad *et al.*, 2019).

One important aspect in influencing the quality of life in coronary heart patients to be better was self-care. But this was often overlooked and most of them felt less confident in doing self-care (Work *et al.*, 2021). Most articles showed that self-care practices in heart disease patients were inadequate and self-care had a positive correlation with the quality of life of heart disease patients (Seid *et al.*, 2023; Sidaria *et al.*, 2023).

Family support is needed by people with heart disease because support from family is very important and helps patients control their diet. Family motivates patients to do regular health checks every month. With support from family, patients will be stronger in facing the disease and receiving it so that the quality of life of sufferers is always good (Blasius *et al.*, 2023; Pela, 2018; Widiyanti & Rahmandani, 2020).

Previous research has shown the quality of life of CHD patients at low to sufficient levels (Amarullah & Rosyid, 2021; Rahmat *et al.*, 2020; Srivastava *et al.*, 2017). Previous research had also shown differences in quality of life in the mental domain compared to the physical domain (Jumayanti *et al.*, 2020).

CHD patients' self-care was in the moderate level and self-care was related to quality of life (Sidaria *et al.*, 2023). Researchers did not find any studies that reported self-care on every dimension that includes maintenance, management and confidence and the relationship of each dimension to the quality-of-life domains.

Family support was also related to the quality of life of patients with heart disease (Blasius *et al.*, 2023; Rokhmah *et al.*, 2020; Wahyuningsih, 2021). So far, no studies have identified the relationship between each dimension of family support and the quality-of-life domains. The dimensions of self-care and family support that were statistically proven to be related to quality of life were important to know so that specific actions can be planned to improve the quality of life of CHD patients.

It is necessary to explore the domain of quality of life that has the potential to be improved. Likewise, the dimensions of self-care and family support that have not been implemented optimally and their relationship with quality of life. The aim of this study was to identify the relationship of self-care and family support with the quality of life of CHD patients.

METHODS

This was a quantitative analytical study using a cross-sectional approach. This research was conducted at Dr. M. Djamil Padang Hospital. The population in this study was all patients suffering from CHD who underwent treatment and outpatient treatment at the Cardiac Clinic of Dr. M. Djamil Padang Hospital. Samples recruitment using Non-Probability Sampling technique, which was a purposive sampling technique with a total sample of 303 participants. The inclusion criteria in this study were CHD patients who are willing to be participants and CHD patients who are able to communicate verbally well. The exclusion criteria in this study were patients newly diagnosed with CHD < 1month, hospitalized patients in the last 1 month, and CHD patients with stroke, kidney failure who did haemodialysis, cancer, and COPD.

The research instrument consisted of demographic data, quality of life questionnaire using The MacNew Heart Disease Health-related Quality of Life (MacNew HDHQoL) Questionnaire (Wulandari *et al.*, 2019), Questionnaire Self-Care of Coronary Heart Disease Inventory (SC-CHDI) (Dickson *et al.*,



2017) and family support questionnaires adopted from previous research questionnaires (Ariadi, 2018). The MacNew HDHQoL questionnaire contains 27 items focusing on emotional (14-item), physical (13-item) and social (13-item) domains that participants filled out based on their limitations in the past 2 weeks. Scores for all domains ranged from a score of 1 to 7, where higher scores meant better health. The internal consistency of the questionnaire was good (0.816-0.900) with Cronbach reliability α 0.900 (Wulandari et al., 2019). The SC-CHDI questionnaire consisted of 22 items related to self-care maintenance (10 items), self-care management (6 items), and self-care confidence (6 items). Participants rate how often they engage in the behavior on a Likert scale ranging from 1 to 4. Each scale is scored separately and standardized to a score of 22-88, with higher scores indicating self-care or better self-care independence (Dickson et al., 2017). The family support questionnaire contains aspects of family support, including instrumental, informational, emotional and expectant support consisting of 12 questions. Participants rate how often they engage in the behavior on a Likert scale ranging from 1 to 4. The results of measuring this family support questionnaire are with a score of 12-48 where the higher the score obtained, the better the family support (Ariadi, 2018).

Data collection was done when patients came to the clinic for routine checkups. Questionnaires were given to them directly. The inclusion and exclusion criteria were used to choose the participants. The objectives of the study and the procedure were explained to eligible participants. It was entirely voluntary to participate. Ten to twenty minutes were needed to complete all of the questions, which were then sent back to the researchers.

Univariate analysis was done with frequency and mean distribution tables, and standard deviation while bivariate analysis used the Spearman rank test. This research was conducted by emphasizing the principles in research ethics including informed consent, anonymity and confidentiality. Participants who have been willing and expressed approval to become participants are then asked to fill out a questionnaire. In this study, an ethical test has been carried out by the Health Research Ethics Committee of Dr. M. Djamil Padang Hospital with the number DP.04.03/D.XVI.XI/106/2024.

RESULTS

Table 1 presents the demographic characteristics of participants. Based on table 1, it is known that the most participants were at the age of 60-69 years (44.2%), more than half participants were male (69.3%), less than half participants were senior high school education (44.2%), majority of participants were married (83.8%), most of them were suffering from diseases 1-3 years (36.6%), and less than half participants with no comorbidities (49.2%).

Table 1. Characteristics of participants (n=303)

Characteristics	f	%
Age		
<40 years	6	2
40-49 years	27	8,9
50-59 years	94	31
60-69 years	134	44,2
70-79 years	42	13,9
Gender		
Male	210	69,3
Female	93	30,7
Education level		
Primary school	32	10,6
Junior high school	71	23,4
Senior high school	134	44.2
Academic/bachelor	66	21.8
Marital status		
Marry	254	83,8
Life/death divorce	49	16,2

Disease duration		
<1 year	56	18,5
1-3 years	111	36,6
4-5 years	88	29
>5 years	48	15,8
Comorbidity		
None	149	49,2
Hypertensive	61	20,1
Diabetes mellitus	49	16,2
HT and DM	44	14,5

Based on table 2, self-care in CHD patients at Dr. M. Djamil Padang Hospital was highest in the self-maintenance dimension with mean values and standard deviations of 29.51 and 3,139. The mean and standard deviation values of participants' total self-care were 64.95 and 5.993, respectively. Furthermore, family support in CHD patients at RSUP Dr. M. Djamil Padang was highest in the domain of emotional support and hope (mean = 13.30 and SD = 1,139). The mean and standard deviations of participants' total family support were 38.73 and 2.827, respectively. Finally, the quality of life in CHD patients at RSUP Dr. M. Djamil Padang was the highest in the physical domain with mean values and standard deviations of 74.17 and 5,675. The mean and standard deviation values of the participants' total quality of life were 143.96 and 11,250, respectively.

Table 2. Self-Care, Family Support and Quality of Life (n=303)

Variables and sub variables	Mean	SD	Min-max
Self-Care	64.95	5.993	42-72
Self-Maintenance	29.51	3.139	18-35
Self-Management	18.05	1.802	11-22
Confidence	17.38	1.741	11-21
Family Support	38.73	2.827	28-46
Instrumental	12.75	1.227	9-15
Informational	12.68	1.453	8-16
Emotional and Hope	13.30	1.139	9-16
Quality of Life	143.96	11.250	115-168
Physical Dimensions	74.17	5.675	57-86
Emotional Dimensions	69.28	5.972	52-86
Social Dimensions	64.64	5.339	50-76

Based on table 3 it can be seen that self-care was related to the quality of life of CHD patients with a P value of 0.001. The correlation coefficient $r = 0.500$ means that the correlation strength is sufficient with the direction of positive correlation, which means that the higher the self-care, the better the quality of life of CHD patients. The value of the coefficient of determination $R^2 = 0.25$, this means that self-care contributes 25% to the quality of life of CHD patients. Family Support was associated with quality of life for CHD patients with a P value of 0.001. The correlation coefficient $r = 0.416$ means that the correlation strength is sufficient with the direction of positive correlation, which means that the higher the family support, the better the quality of life of CHD patients. The value of the coefficient of determination $R^2 = 0.173$, this means that family support contributes 17.3% to the quality of life of CHD patients.

Table 3. The relationship of self-care and family support with quality of life (n=303)

Variables and sub variables	Quality of life								R ²
	Physical dimensions		Emotional dimensions		Social dimensions		Total		
	r	p	r	p	r	p	r	p	
Self-Care	0.521	0.001	0.454	0.001	0.490	0.001	0.500	0.001	0.25
Self-Maintenance	0.462	0.001	0.385	0.001	0.418	0.001	0.434	0.001	
Self-Management	0.442	0.001	0.415	0.001	0.445	0.001	0.441	0.001	
Confidence	0.463	0.001	0.452	0.001	0.440	0.001	0.459	0.001	
Family Support	0.413	0.001	0.430	0.001	0.402	0.001	0.416	0.001	0.173

Instrumental	0.329	0.001	0.379	0.001	0.315	0.001	0.355	0.001
Informational	0.322	0.001	0.321	0.001	0.325	0.001	0.326	0.001
Emotional and Hope	0.319	0.001	0.325	0.001	0.308	0.001	0.314	0.001

DISCUSSION

Quality of Life of CHD Patients

The quality of life among CHD patients at Dr. M. Djamil Padang Hospital was considerably moderate to high. Previous research conducted by Susilo & Zuryati (2022) showed that the quality of life of post PCI patients at Jakarta Heart Hospital were high (81.2%). Post-PCI CHD patients at the Cardiac Clinic of RSUD Raden Mattaher Jambi also had a good (75.93%) and very good (24.07%) quality of life (Salsabila et al., 2023).

In this study, the physical dimension had a better score compared to other dimensions. Participants reported not feeling ostracized by others because of their heart problems and did not feel heart disease was limiting or interfering with sexual intercourse. However, some participants reported feeling tired or lacking energy, often dizzy. Participants reported being physically confined as a result of heart problems and feeling more dependent on others than before having heart problems. According to study by Diah P et al. (2021), the heavier the physical activity that a person does, the higher the risk of chronic CHD, because basically people who have experienced CHD cannot do excessive activity because it can aggravate heart performance so that patients with CHD are more dependent on doing activities than before having heart problems.

On the emotional dimension, higher scores were obtained on question items about feelings of worth, while lower scores on question items about feelings of anxiety and difficulty calming and feelings of worry or fear. Emotional disorders such as stress, anxiety, and depression are very influential on cardiovascular disease and can worsen heart disease (Zvolensky et al., 2017). For effective rehabilitation to heart disease patients, they must have a fairly good psychological status. Health workers play a role in detecting emotional problems such as anxiety and depression. Many studies highlighted the fact that this aspect of psychiatry is underdiagnosed in patients with cardiovascular disease, even though the problem is very important (Chauvet-Gelinier & Bonin, 2017).

In general, chronic diseases such as CHD develop slowly, have a long duration and require medical treatment. Over the past few years there has been an increase in the incidence of chronic diseases. This is the impact of poor patient lifestyle so that it can adversely affect the quality of life of patients (Megari, 2013). Based on the description above, CHD patients had a good quality of life, but there were still aspects of quality of life that need to be improved and evaluated by health workers such as detection of emotional problems, fatigue and dependence on others.

Self-Care of CHD Patients

Self-care in CHD patients at RSUP Dr. M. Djamil Padang showed a considerably high average score when compared to the theoretical score range of 22-88. The results of this study are better than the results of previous studies by Sidaria et al. (2023). Moreover, this study is similar to study conducted by Susilo & Zuryati (2022) that the majority of heart disease patients at Jakarta Heart Hospital have good self-care. According to Sukarna et al. (2022) that there are still many people with CHD who have not carried out self-care properly because it is caused by 3 factors, namely ignorance of the patient, unwillingness to do, and inability to do self-care. This of course can pose a serious risk to sufferers because it can worsen existing conditions.

Patients with chronic conditions such as CHD, especially after a heart attack, are required to do self-care so that their condition does not get worse (Sukarna et al., 2022). Patients with heart disease, should prioritize self-care. This is because self-care skills can prevent the onset of negative symptoms



of the disease, prevent rehospitalization, and improve the quality of life of heart disease patients. Patients should focus primarily on developing their self-care abilities because neglecting self-care is often associated with increased heart failure (Julius, 2019).

To improve self-care for CHD patients, it is necessary to self-awareness of the patients themselves by helping patients form optimal self-care behaviors by maintaining signs and symptoms, improving health care by motivating patients and building casein confidence in self-care. Therefore, participants' understanding of the value of self-care needs to be fostered through education and health promotion activities carried out regularly and periodically by health workers, such as delivering various materials and distributing leaflets.

Family Support for CHD Patients

Family support for CHD patients was considerably moderate to high level when compared with the theoretical score range of 12-48. The results of this study are in line with several previous research results which stated that CHD patients mostly get good family support (Rohman et al., 2024; Salsabila et al., 2023; Sianipar et al., 2021; Sodik, 2018). Family support provided by the family plays an important role in accompanying the patient's life, especially the closest people who live in the same house so that the patient feels more secure, instrumental support, emotional and good appreciation so that the patient feels that someone is ready to make time for him, feels loved and remains enthusiastic about undergoing treatment (Saleh et al., 2021).

In the area of instrumental support, participants reported that families were trying to find a lack of necessary care facilities and equipment. In the domain of informational support, families have been reminded to take regular medication, control regularly, and adopt a healthy lifestyle. Furthermore, in the domain of emotional support and hope, the family comes to visit while in care.

Family support is essential for each family member to successfully adopt and maintain new health habits, such as reducing smoking or making nutritional improvements. People with the help of individuals who do not have family support to change their health behaviors are less likely to adopt and maintain new health behaviors than families who are strong enough to do so.

The Relationship of Self-Care with Quality of Life of CHD Patients

The results showed a significant correlation between self-care and quality of life in CHD patients with sufficient correlation strength and positive correlation direction. This means that the higher the self-care, the better the quality of life of CHD patients. The results of this study are in line with Research conducted by Susilo & Zuryati (2022) where there is a relationship between self-care and the quality of life of post-PCI patients at Jakarta Heart Hospital in 2022(Susilo & Zuryati, 2022).

CHD patients can exercise adequate self-care and maintain their health to improve their quality of life. Even if people with CHD do not experience any symptoms, they should always practice proper self-care because this disease can lead to new and worse health problems (Sukarna et al., 2022).

In addition, people with CHD are more confident in their ability to perform healthy self-care behaviors so that they can improve their quality of life by effectively managing cardiovascular risk factors. Self-care can improve the health status of people with chronic diseases through healthy self-care behaviors and modification of risk factors (Sukarna et al., 2022). Based on the description above, there is a relationship between self-care of CHD patients with the quality of life of CHD patients.

Family Support Relationship with Quality of Life of CHD Patients

Based on the results of statistical tests, a meaningful correlation was obtained between two family supports and quality of life in CHD patients with sufficient correlation strength and positive

correlation direction. This means that the higher the family support, the better the quality of life of CHD patients. This research is in line with research conducted by Salsabila et al., (2023) where there is a relationship between family support and the quality of life of post-PCI patients in the heart clinic room of RSUD Raden Mattaher Jambi and the results of the study Yoyoh et al., (2021) where there is a significant relationship between family support and the patient's quality of life *congestive heart failure* at Mayapada Hospital Tangerang.

The results of the study found that CHD patients who had received good family support there were still 9 participants (3.4%) had a sufficient quality of life, this was based on the results of questionnaire analysis of the characteristics of participants with comorbidity, 5 out of 9 participants who received good family support had a poor quality of life with comorbidity of hypertension and diabetes mellitus, 3 participants with diabetes mellitus and 1 of them with hypertension.

It is expected that patients with chronic diseases, especially CHD patients who experience a poor quality of life, can be given good family support can somewhat improve their quality of life. Strong family support in supporting the treatment process of CHD patients will have a positive impact on efforts to improve the quality of life of patients (Wahyuningsih, 2021).

Family support is essential to overcome obstacles and to manage illnesses faced by family members. Individuals with CHD need information support and motivation, namely with family attention, reminding when to take medication, preparing medications that need to be taken, and giving appreciation and *Support* consistently so as to improve medication adherence to minimize recurrent and severe recurrences, which is important to achieve optimal health as well as a better quality of life for patients (Putranto et al., 2022).

To improve the quality of life of patients with CHD, family support is needed to help keep patients in a stable condition and also this must be supported by family members who have good health knowledge. Support from family members is very important in the treatment plan of people with CHD, this can certainly help patients recover and improve their quality of life (Wahyuningsih, 2021).

Based on the description above, there is a relationship between the family support received by CHD patients with the quality of life of CHD patients so that it is expected that families can provide optimal family support ranging from instrumental support, information support, emotional support and hope to improve the quality of life of CHD patients.

CONCLUSION

Self-care and family support have a correlation with the quality of life of CHD patients. Improved self-care and increased family support will improve patients' quality of life. Patients need to improve their ability to perform self-care while family members need to provide supports to patients in order to increase patients' quality of life. Health education about self-care needs to be provided to patients and their families to improve self-care skills and the quality of life of patients with coronary heart disease.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest in this research.



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