



**IMPROVING SELF-EFFICACY THROUGH FAMILY CENTER  
EMPOWERMENT MODEL: A QUASI-EXPERIMENT STUDY**

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### **ABSTRACT**

*Health problems in patients with coronary heart disease will have an impact on the patient's functional and psychological status. It will affect the quality of life of coronary heart disease patients. Self-efficacy is known to have a role in improving patient quality of life. Therefore, it is essential to increase self-efficacy in coronary heart disease patients. This research aims to determine the effect of the family-center empowerment model on the self-efficacy of coronary heart disease patients. This research uses a quasi-experimental design. The sample in this study was 50 patients with coronary heart disease in the cardiac polyclinic at Raden Mattaher Regional Hospital who were divided into two groups, namely 25 intervention groups and 25 control groups. The sampling technique used was consecutive sampling. The instruments used were questionnaires on respondent characteristics and cardiac self-efficacy. The family center empowerment model intervention consists of four sessions over four weeks. Data analysis used a paired t-test. And independent t-test. Before the FCEM intervention, the results showed no difference in mean self-efficacy in the two groups ( $p=0.56$ ). However, after the FCEM intervention in the experimental group, self-efficacy increased significantly ( $p < 0.01$ ). Also, there is a difference in mean self-efficacy in the two groups ( $p = 0.003$ ). This study shows an increase in self-efficacy after the FCEM intervention. It is hoped that nurses can apply FCEM interventions in the field of nursing clinical practice.*

Keywords: Self- Efficacy, Family Center Empowerment Model, Coronary Heart Disease

### **ABSTRAK**

*Permasalahan kesehatan pada pasien dengan penyakit jantung koroner akan berdampak pada status fungsional dan psikologis pasien. Hal ini tentu akan mempengaruhi kualitas hidup pasien penyakit jantung koroner. Self-efficacy diketahui memiliki peran dalam meningkatkan kualitas hidup pasien. Oleh karena itu, penting untuk meningkatkan self-efficacy pada pasien penyakit jantung koroner. Tujuan penelitian ini yaitu untuk mengetahui pengaruh family center empowerment model terhadap self-efficacy pasien penyakit jantung koroner. Penelitian ini dengan desain quasy experimental. Sampel dalam penelitian ini yaitu pasien penyakit jantung koroner di poliklinik jantung RSUD Raden Mattaher yang berjumlah 50 orang yang terbagi menjadi dua kelompok, yaitu 25 kelompok intervensi dan 25 orang kelompok kontrol. Teknik sampling yang digunakan yaitu consecutive sampling. Instrumen yang digunakan berupa kuesioner karakteristik responden dan cardiac self-efficacy. Intervensi family center empowerment model terdiri dari empat sesi yang dilaksnakan selama empat minggu Analisis data yang digunakan menggunakan uji t-test berpasang. an dan uji t-test independen. Sebelum intervensi FCEM diberikan didapatkan hasil tidak terdapat perbedaan rerata self-efficacy pada kedua kelompok ( $p=0,56$ ). Namun, setelah intervensi FCEM pada kelompok eksperimen, self-efficacy meningkat secara signifikan ( $p < 0,01$ ). Serta, terdapat perbedaan rerata self-efficacy pada kedua kelompok ( $p = 0,003$ ). Studi ini menunjukkan terdapat peningkatan self-efficacy setelah*

*intervensi FCEM. Diharapkan perawat dapat mengaplikasikan intervensi FCEM di bidang praktik klinik keperawatan.*

Kata Kunci: Self-efficacy, Family Center Empowerment Model, Penyakit Jantung Koroner

## INTRODUCTION

Coronary heart disease is the most common cardiovascular disease found in the world. Two hundred million people are estimated to have coronary heart disease. In 2019, CHD was known to be the leading cause of death in the world, where 9 million people died from CHD (Health Intelligence Team, 2024).

Data from Basic Health Research (Riskesdas) in 2018 shows that the prevalence of coronary heart disease in Indonesia reached 1.5%. The death rate due to CHD in 2019 reached 245,343 deaths (Kementerian Kesehatan RI, 2018).

Coronary heart disease (CHD) is a condition in which the blood vessels narrow due to blockages or plaque (atherosclerosis). This blockage causes chest pain, fatigue, and dyspnea (Li et al., 2018).

Several symptoms that arise due to CHD, such as chest pain, feeling tired quickly, limitations in carrying out activities, as well as feelings of stress due to the disease suffered, as well as worries about death, can affect the patient's quality of life (Mayou & Bryant, 1993; Oktarina & Nurhusna, 2023; Treasure, 1999; Wenger et al., 1984). Self-efficacy is known to have a vital role in improving patient quality of life (Shrestha et al., 2020). The study results show a relationship between quality of life (Oktarina & Sulistiawan, 2022). According to Bandura, self-efficacy is a form of self-confidence to do something based on one's abilities to influence self-care, compliance with treatment, and increasing physical and psychological abilities (Bandura, 1997). Increased self-efficacy is associated with positive changes in behavior and health status (Curtin et al., 2008). Tsay & Healstead (2002) suggests that patients with high self-efficacy have lower levels of depression and a better quality of life.

Self-efficacy is a part of the family center empowerment model (FCEM). Empowering families and patients can increase knowledge, self-efficacy, and self-care abilities and maximize the patient's health and welfare potential so that it can improve the patient's quality of life. In addition, with the family empowerment approach intervention, it is hoped that the family's ability will increase to help manage health and support patient independence (Borimnejad PhD et al., 2018; Sigurdardottir & Jonsdottir, 2008; taimori et al., 2011)

Nursing intervention to increase patient self-efficacy based on family empowerment, namely *the* Family Center Empowerment Model (FCEM). FCEM aims to increase the provision of information, knowledge, and self-efficacy to patients and families (Shirvani et al., 2017). FCEM is a family-based nursing intervention consisting of four sessions: problem identification, *problem-solving*, education, and evaluation. These four sessions are carried out not only for patients but also for families (Borhani et al., 2011)

Previous studies conducted by researchers in 2021 showed that self-efficacy scores for patients were  $39.70 \pm 5.25$ , with a value range of 27-53 (min-max). It shows that self-efficacy is still not optimal. Apart from that, no intervention has been carried out to increase self-efficacy in the cardiac clinic at Raden Mattaher Regional Hospital, and the results of studies regarding the application of FCEM intervention to increase self-efficacy in CHD patients are still limited. This research aimed to determine the effect of FCEM on self-efficacy in CHD patients.

## METHOD

The research was quantitative and quasi-experimental. It was carried out from April to September 2022 in the Cardiac Polyclinic and Cardiac Inpatient Room at Raden Mattaher Regional Hospital.

This study's population was CHD patients who received treatment at the Heart Polytechnic of Raden Mattaher Regional Hospital. The sample size was 50 patients, who were divided into two groups: 25 people in the intervention group and 25 people in the control group. The sampling technique used was consecutive sampling. The intervention group received *the family intervention center empowerment model*, while the control group did not receive any intervention.

The inclusion criteria in this study are:

- 1) Aged > 18 years
- 2) Diagnosed with coronary heart disease
- 3) Can read and write
- 4) Have family members involved in patient care

The exclusion criteria in this study were health conditions that experienced a decline when the research was conducted.

The provision of FCEM intervention is divided into four sessions carried out over four weeks, where one session lasts 30-45 minutes, aimed at patients and the patient's family. In Session 1 (Identification of patient problems), the researcher explained the definition, signs and symptoms, risk factors, management, prevention, and complications to the patient using *a booklet*. In session 2 (Problem Solving), researchers demonstrated several relaxation techniques (Benson relaxation, PMR) to reduce pain and anxiety in patients. After the researcher demonstrated, the researcher asked the patient to practice again. Session 3 (Increasing self-efficacy): The patient is asked to provide the information learned in sessions 1 and 2 to one of the family members who is actively involved in the patient's care. Researchers gave patients *booklets* to help patients convey information to their families Session 4 (Evaluation of intervention success): Final evaluation carried out through a post-test, which aims to assess patient self-efficacy.

The research instruments used in this study were a demographic questionnaire in the form of patient identity, duration of illness, comorbidities, and a *Cardiac questionnaire, Self Efficacy*, which consists of 13 questions in English which will then be translated into Indonesian and then translated back into English by a linguist to test the validity of the content. Reliability tests carried out on 10 people suffering from CHD resulted in  $r=0.71$ . The questionnaire has a rating range of 0 – 4, where the score is 0: not sure, 1: not sure, 2: sure, 3: very sure, and 4: entirely sure.

Univariate analysis uses the mean /median value to determine the self-efficacy score. Meanwhile, the bivariate analysis used the dependent t-test and the independent t-test to determine the difference in mean *self-efficacy* after giving intervention to the control and intervention groups.

## RESULTS

Based on the results of research conducted on 50 people with coronary heart disease, the results were:

**Table 1**  
**Characteristics of Respondents**

Characteristics	Intervention	Control
	f(%)	f(%)
Age		
31-40	1(4)	1(4)
41-50	7(28)	8(32)

51-60	9(36)	6(24)
61-70	6(24)	7(28)
71-80	2(8)	2(8)
Gender		
Man	14(56)	13(52)
Woman	11(44)	12(48)
Education		
No school	1(4)	0(0)
Elementary School	8(32)	8(32)
Middle School	4(16)	7(28)
Senior High School	6(24)	4(16)
College	6(24)	6(24)
Duration of Illness		
< 6 months	12(48)	7(28)
≥ 6 months	13(52)	18(72)

Based on the table above, it was found that in the intervention group, the age of the respondents was mainly in the range of 51-60 years, male gender was 14 people (56%), high school and college education was 6 people each (24%), and duration of illness. ≥ 6 months, totaling 13 people (52%). Meanwhile, in the control group, the age of most respondents was in the range of 41-50 years (32%), the gender was 13 people (52%), the highest level of education was junior high school, 7 people (28%), and the duration of illness was ≥ 6 months. 18 people (72%).

**Table 2**  
**Effect of FCEM on Self-efficacy in CHD Patients**

Self-efficacy	Experimental (n=25)		Controls (n=25)	
	Mean±SD	p	Mean±SD	p
Pre	31±5.72	<0.01	30.2±3.03	0.06
Post	34.08±5.99		29.76 ± 3.23	

**Table 3**  
**Differences in Mean Self-efficacy Before and After Intervention**

Self-efficacy	Experimental (n=25)	Controls (n=25)	Mean Difference	p
	Mean±SD )	Mean±SD		
Pre	31±5.72	30.2±3.03	0.80	0.56
Post	34.08±5.99	29.76 ± 3.23	4.32	0.003

Based on table 2, the mean self-efficacy in the control group after 4 weeks decreased. Meanwhile, in the intervention group, there was an increase in the mean value of self-efficacy. The t-test results showed a significant difference in self-efficacy in the experimental group ( $p < 0.01$ ).

Table 3 shows that the control group's mean self-efficacy was the same before and after the FCEM intervention ( $p = 0.56$ ). However, there were differences in mean self-efficacy after the intervention ( $p = 0.03$ ).

The research results show differences in mean self-efficacy in the control and intervention groups after receiving the FCEM intervention. The results of this study are in line with studies conducted by (Borimnejad PhD et al., 2018) regarding the effect of FCEM intervention on adolescents with

thalassemia, showing that there is an effect of FCEM intervention on self-efficacy in patients with a p-value <0.001. In line with the results of this research, a study (Shoghi et al., 2019) shows that FCEM intervention can reduce the burden felt by families and also increase self-efficacy in children diagnosed with cancer. Other studies show that FCEM can improve self-esteem efficacy in stroke patients (Fouad et al., 2022). However, Heidari's research showed no difference in the mean self-score efficacy in patients with COVID-19 (Heidari et al., 2023). Differences in the results of this study could be due to the course of the disease, the treatment being undertaken, and the involvement of the family (Heidari et al., 2023). Another study regarding FCEM intervention on self-efficacy in patients with obsessive disorder compulsive disorder (OCD) showed an increase in self-efficacy scores after administering the FCEM intervention (Zazerani et al., 2021).

Self-efficacy is very much needed by patients in carrying out a healthy lifestyle and controlling health behavior from various CHD risk factors such as hypertension, hypercholesterolemia, smoking habits, diabetes, obesity, as well as unhealthy lifestyles such as lack of physical activity or alcohol consumption in preventing complications and improve the patient's quality of life (Hajar, 2017; Nuraeni et al., 2023; Shrestha et al., 2020). Tsay and Healstead (2002) suggest that patients with high self-efficacy have lower levels of depression and a better quality of life. In this study, it was seen that after giving the FCEM intervention, there was an increase in the mean self-efficacy in the intervention group. Meanwhile, the control group experienced a decrease in the average self-score efficacy after four weeks of carrying out the pre-test. Applying FCEM to patients can improve clinical cooperation within the family, increase knowledge, self-efficacy, and self-esteem, and reduce morbidity and mortality due to disease (Javadi et al., 2023). FCEM does not only have a positive impact on patients but also families. Several studies show that FCEM is also known to improve problem-solving abilities, self-efficacy, self-esteem, and satisfaction with family members who act as caregivers (Abedini et al., 2020; Masoodi et al., 2013; Vahedian-Azimi et al., 2016).

The family-centered empowerment model influences self-improvement efficacy in patients. By involving the family, it is believed that the patient's self-confidence will increase in dealing with their illness. Therefore, the family program empowerment model can be applied to patients and families.

### **LIMITATION OF THE STUDY**

The limitation of this research is that the intervention was implemented only for a month. Preferably, it can be carried out for 4-6 months. In addition, respondents only came from one hospital. Thus, the results of this study cannot be generalized.

### **CONCLUSION AND SUGGESTION**

The research results show that FCEM intervention can increase self-efficacy in CHD patients. Nurses are expected to be able to apply the family intervention center empowerment model in clinical practice areas to improve their efficacy in CHD patients. Recommendations for further research include that research subjects come from various clinical settings. It is also hoped that the implementation of the intervention will last longer, up to 4-6 months.

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### **Ethical Consideration**

This research has received approval from the Research Ethics Commission of Raden Matta Her Hospital Jambi, with the number S.54/SPE/VII/2022.

### **Conflict of Interest Statement**

The author declares that there is no potential conflict of interest.

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