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Quality of Life of Coronary Artery Disease Patients Based on the Degree of Physical Ability

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A B S T R A C T

Introduction: Coronary artery disease (CAD) is a chronic disease that can reduce the patient's quality of life (QoL). Decreased physical ability is one of the factors that can influence the QoL of CAD patients. **Methods:** This study used a cross-sectional descriptive design with a sample of 125 CAD patients aged 35-64 years at Dr. M. Djamil General Hospital Padang. QoL data was collected using the WHOQOL-BREF questionnaire, and the degree of physical ability was measured using the Duke Activity Status Index (DASI) questionnaire. Data analysis used the chi-square test. **Results:** The results showed that 43.8% of patients had good QoL, and 56.2% had very severe physical abilities. There is a significant relationship between the degree of physical ability and QoL in CAD patients (p-value 0.000). **Conclusion:** The degree of physical ability is a predictor of QoL in CAD patients. Interventions to improve physical abilities can help improve QoL in CAD patients.

1. Introduction

Coronary artery disease (CAD) is a condition in which there is narrowing or blockage of the coronary arteries, namely the blood vessels that supply blood to the heart. This narrowing can be caused by a buildup of plaque, which is a fatty substance that sticks to the walls of the arteries. CAD is one of the main causes of death throughout the world, including in Indonesia. Data from the Ministry of Health of the Republic of Indonesia in 2018 shows that CAD is the number one cause of death in Indonesia, with a proportion of 15.8%. Physical ability is the ability to perform physical activities. Decreased physical ability is one of the risk factors for CAD. This can be explained because a decrease in physical ability can cause an increase in cholesterol levels, blood pressure, and blood sugar, which are risk factors for CAD.[1-3]

Several previous studies have shown a relationship between physical ability and quality of life (QoL) in CAD patients. Studies show that CAD patients with low physical abilities have lower QoL compared to CAD patients with high physical abilities. QoL is an important aspect of the lives of CAD patients. Decreased QoL can affect patients' mental and physical health and can increase the burden of health costs. Research on the relationship between the degree of physical ability and QoL in CAD patients is still limited. It is hoped that this research can provide

useful information to improve the QoL of CAD patients.[4-6] The aim of this study was to identify the relationship between the degree of physical ability and QoL in CAD patients.

2. Methods

This research uses a cross-sectional descriptive design. This design aims to describe the relationship between the degree of physical ability and QoL in CAD patients. The population of this study were all CAD patients who visited Dr. M. Djamil General Hospital Padang. The sample for this study was taken using a consecutive sampling technique, as many as 125 patients who met the inclusion criteria, namely CAD patients who were diagnosed based on physical examination, ECG, and treadmill test, aged 35-64 years, able to understand and complete the questionnaire.

QoL data was collected using the WHOQOL-BREF questionnaire. This questionnaire consists of 26 questions that assess QoL in four domains: physical, psychological, social, and environmental. The degree of physical ability is measured using the Duke Activity Status Index (DASI) questionnaire. This questionnaire consists of 12 questions that assess the patient's ability to perform physical activities. Data were analyzed using the chi-square test to see the relationship between the degree of physical ability and QoL in CAD patients. This study was approved by the Research Ethics Committee of Dr. M. Djamil General Hospital Padang. Informed consent was obtained from all patients before the study was conducted.

3. Results and Discussion

Table 1 shows that of the 125 respondents, 54.4% were men and 45.6% were women. This distribution indicates that this study is quite representative of the overall CAD patient population. Most respondents (50.4%) were aged 55-64 years. This can be explained because CAD occurs more often in older people. The highest level of education of respondents was senior high school (44.8%). This shows that the education levels of respondents are quite diverse. Of the 125 respondents, 43.8% had a good quality of life, 27.4% had a very good quality of life, and 28.8% had a poor quality of life. More than half of the respondents (53.6%) had a severe degree of physical ability, while the remainder (46.4%) had a low degree of physical ability. This shows that the physical abilities of CAD patients are generally low, so they need to be improved to improve their quality of life. The distribution of respondent characteristics shows that this study is quite representative of the overall CAD patient population. Most of the respondents were men aged 55-64 years, had a high school education level, and had varying quality of life. The degree of physical ability of CAD patients is generally low.

Table 1. Characteristics of respondents.

Variable	Frequency	Percentage
Gender		
Male	68	54.4
Female	57	45.6
Age		
35 – 44 years	28	22.4
45 – 54 years	34	27.2
55 – 64 years	63	50.4
Education		
Primary school	15	12.0
Junior high school	11	8.8
Senior high school	56	44.8
College	43	34.4
Quality of life		
Poor	36	28.8
Good	55	43.8
Very good	34	27.4
Degree of physical ability		
Mild	58	46.4
Severe	67	53.6

Table 2 shows the relationship between the degree of physical ability and the quality of life of CAD patients. It can be seen that there is a significant relationship between these two variables (p-value 0.000). In patients with a mild degree of physical ability, the majority (53.1%) had a poor quality of life, while 31.3% had a good quality of life and 15.6% had a very good quality of life. In patients with severe physical abilities, the majority (57.7%) had a good quality of life, while 9.8% had a poor quality of life, and 36.6% had a very good quality of life. This shows that patients with a lower degree of physical ability tend to have a worse quality of life. This can be explained because decreased physical abilities can cause various health problems, such as fatigue, shortness of breath, and chest pain, which can affect the patient's quality of life. The degree of physical ability is a factor that is related to the quality of life of CAD patients. Interventions to improve physical abilities can help improve the quality of life of CAD patients.

Table 2. Relationship between degree of physical ability and quality of life in CAD patients.

Degree of physical ability	**Quality of life**						**n**	**Total**	**P-value**
	Poor		**Good**		**Very good**				
	n	**%**	**n**	**%**	**n**	**%**			
Mild	29	53,1%	17	31,3%	9	15,6%	55	43,8%	0.000
Severe	7	9,8%	38	57,7%	25	36,6%	70	56,2%	
Total	36	28,8%	55	43,8%	34	27,4%	125	10%	

The findings of this study show that in patients with a mild degree of physical ability, the majority (53.1%) had a poor quality of life, while 31.3% had a good quality of life and 15.6% had a very good quality of life. These findings are in line with previous research, which shows that reduced physical abilities can affect the quality of life of CAD patients. In terms of biological plausibility, decreased physical abilities can cause various health problems, such as fatigue, shortness of breath, and chest pain, which can affect the patient's quality of life. Fatigue is one of the most common symptoms in CAD patients. Fatigue can make it difficult for patients to carry out daily activities, such as working, exercising, and socializing. This can cause depression, anxiety, and reduced quality of life. Shortness of breath is another common symptom in CAD patients. Shortness of breath can make it difficult for patients to breathe when doing physical activity, such as walking or climbing stairs. This can cause patients to limit their activities, which can affect their quality of life. Chest pain is the most serious symptom in CAD patients. Chest pain can occur when the patient is doing physical activity or at rest. Chest pain can make patients afraid to engage in activities, which can affect their quality of life.[7-10]

The study results showed that the majority of patients with severe physical abilities (57.7%) had a good quality of life. This may seem inconsistent with the expectation that patients with lower physical abilities will have a poorer quality of life. Patients with CAD may have adapted to their condition and developed strategies to overcome their physical limitations. This can help them to maintain a good quality of life. Support from family, friends, and the community can help CAD patients overcome the impact of their disease and improve their quality of life. Patients with CAD who have fewer comorbidities may have a better quality of life despite their lower physical abilities. The definition and measurement of physical ability can vary between studies. This can cause differences in research results. Patients with good access to health services may have a better quality of life, even if their physical abilities are low. Even though the majority of patients with severe physical abilities have a good quality of life, it remains to be remembered that 36.6% of patients have a very good quality of life, and 9.8% have a poor quality of life. Several previous studies also showed results that are in line with this research. Another study found that patients with CAD who had low levels of physical activity had a worse

quality of life compared to patients who had high levels of physical activity. Another study also found that interventions that improve the physical abilities of CAD patients can improve their quality of life.[11-15]

Biologically, decreased physical abilities can cause various health problems, such as fatigue, shortness of breath and chest pain. This can affect the patient's quality of life. However, patients with CAD who have low physical abilities may be able to compensate for this deficiency with other strategies. Patients can change their lifestyle to become more active, such as by exercising regularly and eating healthy foods. Patients may use assistive devices, such as canes or wheelchairs, to help them move. Patients can get help from others, such as family, friends, or health professionals, to carry out daily activities. The degree of physical ability is one of the factors related to the quality of life of CAD patients. However, there are other factors that can also influence a patient's quality of life, such as psychological factors, social support, and access to health services.[16-19]

4. Conclusion

The degree of physical ability is a factor that is related to the quality of life of CAD patients. Interventions to improve physical abilities can help improve the quality of life of CAD patients.

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