

# SELF-CARE BEHAVIOR EXPERIENCE FOR HEART ATTACK PREVENTION IN ACUTE CORONARY SYNDROME PATIENT

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**Abstract.** The rate of heart attack recurrence in patients with acute coronary syndrome is still high. Appropriate self-care behavior must be implemented so that patients avoid recurrence and prevent complications. This study aimed to explore the experience of self-care behavior carried out by acute coronary syndrome patients to prevent heart attacks. The research was conducted using a qualitative design with a phenomenological approach. A total of ten patients with the acute coronary syndrome who were taken by purposive sampling technique were used as research samples. Semi-structured interviews were conducted for the process of collecting data. Data analysis was carried out by compiling a transcript of the interview results. The results showed that there were four themes of self-care behavior carried out by patients with acute coronary syndromes in preventing heart attacks, namely doing light physical activity, limiting consumption of high-salt and fatty foods and increasing vegetable consumption, stress management by motivating yourself and increasing prayer, routinely control and take medication. Appropriate self-care behaviors, including physical activity, diet management, stress management, checking health services, and taking regular medication, are significant for patients with acute coronary syndromes to prevent heart attacks.

**Keywords:** acute coronary syndrome, heart attack prevention, self-care

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## INTRODUCTION

Acute coronary syndrome (ACS) is one of the leading causes of death in the world. ACS is included in cardiovascular diseases as a part of coronary heart diseases (CHD). In recent decades, CHD mortality rates have decreased in western countries (Ralapanawa and Sivakanesan, 2021). However, CHD is the cause of death in one-third of the population over 35 years in developing countries (Sanchis-Gomar *et al*, 2016). In the case of ACS, the recurrence rate is still very high. The results of a study showed that 30% of ACS patients, after undergoing treatment at home within >29 days experienced a relapse and had to be hospitalized again (Svendson *et al*, 2021). Another study also showed that 32.9% of ACS patients showed a low level of medication adherence (Wong *et al*, 2013). This low level of adherence was significantly associated with an increase in major adverse cardiovascular events (MACE) in ACS patients. Therefore, preventive behavior is a critical component carried out by patients to prevent a recurrence

Self-care behavior is one of the important components for preventing recurrence in someone with heart disease. Self-care behavior promotes optimal health status (Martínez *et al*, 2021). Self-care behavior can also improve the patient's quality of life. Patients with good self-care behavior show a better quality of life by managing more effectively the risk factors that cause symptoms (Ahn *et al*, 2016). Prevention of recurrent heart attacks in ACS patients is included in the secondary prevention

category. In recent decades, the prevention of recurrent heart attacks has emphasized maintaining healthy lifestyle behaviors such as diet, regular exercise, smoking cessation, weight management, depression screening, and cardiac rehabilitation (Aggarwal *et al*, 2021).

Several studies describe that patients with low self-care show low job control, job stress, and work-life imbalance that interfere with routine self-care. Individuals with poor self-care management reported “feeling stressed out” and “extreme fatigue” attributed to their job (Dickson *et al*, 2021). Social support is one of the factors that influence self-care compliance (Shin *et al*, 2013). Culture also affects self-care, especially on adherence to diet, medication, use of alternative medicine as well as how patients interpret and respond to symptoms that arise (Osokpo and Riegel, 2021). This study aimed to explore the experience of self-care behavior for heart attack prevention in ACS patients.

## MATERIALS AND METHODS

### **Study design and setting**

A qualitative design with a phenomenological approach which aims to explore the experience of self-care behavior of ACS patients in preventing heart attacks. The research was conducted in March 2022 at PKU Muhammadiyah Hospital Yogyakarta.

### **Participants**

The informant were 10 ACS patients who visited the heart polyclinic at Gamping Hospital Yogyakarta, which was taken using the purposive sampling technique. The criteria for the participants used were patients

aged more than 40 years, had undergone treatment at home for at least two weeks since the last ACS treatment at the hospital, and were willing to be respondents. The characteristics of the participants are listed in Table 1

## Data collection

The variable measured in this research were self-care behavior. Semi-structured interviews were used to collect data on the participants. The researcher used audio recordings to document the participants' answers to the questions posed to the researcher. Furthermore, the researchers conducted a transcript of the interview results for further grouping the research themes.

Table 1  
Participants' characteristics

Participant number	Gender	Age (Years)	Level of education	Occupation
1.	Male	47	High School	Trader
2.	Male	45	High School	Laborer
3.	Male	66	Middle School	Laborer
4.	Male	63	Elementary School	Farmer
5.	Female	68	High School	Housewife
6.	Male	62	High School	Private employee
7.	Male	65	High School	Pensionary
8.	Male	52	High School	Private employee
9.	Male	63	High School	Pensionary
10.	Male	47	Master degree	Civil servant

## **Data analysis**

After collecting data, the next step is data reduction. According to Ralapanawa and Sivakanesan (2021), data reduction is a selection process, focusing attention on simplifying, abstracting, and transforming raw data that emerges from field data. After being reduced, the researcher must categorize the data according to the needs. For example, data are grouped by date, informant characteristics, or research location. The appearance of this research data was carried out in a narrative form.

## **Trustworthiness/Rigor**

This research was carried out in real terms, to ACS patients who came for control at the heart polyclinic at PKU Muhammadiyah Gamping Hospital. Permission was given by the Director of the hospital through the PKU Muhammadiyah Gamping Hospital education and training department

## **Ethical consideration**

This research has several ethical principles, namely: 1) the principle of justice, 2) the principle of autonomy, 3) the principle of benefits, 4) the principle of respecting the rights of subjects, 5) the principle of maintaining confidentiality. Ethical certificates from Faculty of Nursing UNAIR number 2737-KEPK and from PKU Gamping Hospital number. 007/KEP-PKU/I/2023 were issued to this research study.

## **RESULTS**

There are four themes of experiences of ACS patients in doing self-care as an effort to prevent heart attacks, including doing light physical

activity, limiting consumption of foods high in salt and fat and increasing consumption of vegetables, stress management by motivating yourself and increasing prayer, routine control and taking medication.

### **Theme 1: Do light physical activity**

Doing light physical activity is the type of physical activity that is done by most of the participants. Some types of light physical activity include walking and cycling.

The followings are the informants' statements:

*"So far, physical activity is not restricted, and is like normal physical activity in general. Every morning, I often ride my bicycle, Ma'am, sometimes for a morning walk around the neighborhood."* (Participant 1)

*"After the ring was installed, light activities were carried out, namely walking and cycling a distance of about 1-3 kilos, if during the cycle there was a recurrence I took pain medicine, then after that I took a short rest after that I could continue cycling. So far, activities have not been reduced."* (Participant 6)

*"After the ring was installed, there were no complaints. At home, the activities in the morning were for a morning walk. So far, the activities have remained as usual, nothing has been limited."* (Participant 8)

### **Theme 2: Limit the consumption of high-salt and fatty foods and increase the consumption of vegetables.**

All participants were given the diet patterns set up by doctors and nurses when they visit the heart clinic. Not consuming foods with excess salt and fat content, and increasing consumption of vegetables are some of the participant behaviors in diet settings. Below is the information

from the participants:

*“Food is reduced from salt, oil, and meat, madam, sometimes it’s not too spicy, I prefer to eat the vegetables.”* (Participant 5)

*“For diet food, currently, we have started to reduce the consumption of salt, meat, oil, rice a little but a lot of vegetables.”* (Participant 8)

However, one informant stated that there were obstacles in regulating eating patterns because they felt nauseous. The participant’s statement is as follows:

*“There has not been a reduction in eating a low-salt diet, in fact I came out of the hospital eating always feeling sick, Ms. Even when I was in the hospital, my meals went smoothly, sis.”* (Participant 7)

### **Theme 3: Stress management by motivating yourself and increasing prayer.**

Most of the participants stated that they had not experienced stress so far. However, several participants said that if they experience problems/stress, several actions are taken, such as praying and dhikr, praying, being calm, or motivating themselves. Information obtained from participants includes:

*“I feel a little stressed because my family has a history of heart disease, so I thought about it, ma’am, but I minimized it by praying and dhikr.”* (Participant 3)

*“Not having mental problems that cause stress, because I always instill a positive mindset in my life, that’s one of the main keys. In fact, I was stressed when I was on an old date, sis, hahaha...”* (Participant 10)

*“There is no stress problem, I always motivate myself to get well soon.”* (Participant 7)

#### **Theme 4: Routine control and taking medicine**

All participants tried their best to prevent a recurrence by regularly taking medication and conducting regular check-ups. Information obtained from participants includes:

*“For treatment, I always have regular control and take medication, Ms.”*  
(Participant 2)

*“For treatment, I always take medicine twice a day and always have regular check-ups, I just happened to have this control once after the ring was installed.”* (Participant 6)

*“Medication adherence is always regular. What is sent by the doctor is always obedient, Ms.”* (Participant 10)

### DISCUSSION

Self-care behavior is one of the actions that ACS patients must take to prevent heart attacks. The study results illustrate that most participants have carried out self-care behavior by doing light physical activity, adjusting diet patterns, stress management, taking medication, and conducting health checks. ACS patients carry out light physical activities such as cycling and walking in the morning to maintain their health. Regular physical activity has been shown to increase exercise capacity and quality of life, reduce symptoms and reduce the risk of developing new coronary artery disorders (Scrutinio *et al*, 2005). Physical activity is one of the independent factors that can reduce mortality in cases of CHD (Varghese *et al*, 2016). Physical activity is one of the independent factors that can reduce mortality in cases of CHD (Sur *et al*, 2022). It has been shown that good intentions and social support will be able to improve a

person's health behavior (Fikriana *et al*, 2021a). Health behavior can also be improved by providing nursing interventions, one of which is through nurse-led programs. Nurse-led programs are proven to be effective in improving the health behavior, quality of life and clinical outcomes of patients. Nurses can use this program to maximize ACS patient care (Afik *et al*, 2022). However, this is different from other studies, which show that intention does not affect physical activity (Fikriana *et al*, 2020).

Efforts to increase physical activity behavior should be carried out by ACS patients, especially one year after undergoing treatment for ACS attacks. A home-based cardiac rehabilitation program led by a clinical nurse specialist is one program that has proven to be effective in increasing physical activity behavior. This program contributes to improving the management of risk factors after a heart attack because improve patients' understanding of their disease and medications, and ultimately overall health outcomes (Elbashir *et al*, 2023). An interdisciplinary and collaborative approach with patients and families is also essential to increase the physical activity of ACS patients (Houle *et al*, 2011).

Setting a diet pattern is one of the preventive behaviors carried out by ACS patients to avoid heart attacks. Some dietary habits include limiting the consumption of foods high in fat and salt and increasing the consumption of vegetables. Limitation of fat consumption is necessary to maintain cholesterol levels in the blood. Controlling the level of cholesterol in the blood is one strategy for managing risk factors for recurrence in ACS patients (Aditya *et al*, 2018). Restriction of salt consumption is also necessary to control blood pressure. Reducing salt consumption not only lowers blood pressure but can also reduce morbidity and mortality in cardiovascular diseases (Grillo *et al*, 2019).

Increasing consumption of fruits and vegetables is part of a balanced diet. The increase in consumption is used as a source of vitamins, fiber, minerals, and several other nutrients (Alissa and Ferns, 2017). Studies show that the regulation of food consumption patterns is influenced by the patient's age and social support from health workers (Fikriana *et al*, 2019). Social support from health workers can be done by providing dietary counseling. The results another study show that increasing age can directly impact raising blood glucose, blood cholesterol, and blood pressure (Fikriana and Devy, 2018). In women, someone with an excess body mass index can also increase blood pressure (Fikriana and Devy, 2018).

Stress management is also one of the efforts made by ACS sufferers to avoid heart attacks. Trying to motivate yourself and multiply prayers to God are choices made by patients when experiencing stress. The results of the study show that peer support is one of the factors that influence one's stress management (Fikriana *et al*, 2019). The existence of stress that afflicts a person will impact his health status, such as an increase in blood pressure. Using coping strategies such as active coping, planning, suppressing opposing activities, restraint, and the use of social support can reduce anxiety in patients (Fikriana *et al*, 2022).

Compliance with taking medication and conducting regular check-ups with health services is one of the self-care behaviors performed by ACS patients. This is a form of health behavior needed by ACS patients in carrying out self-care so that a heart attack does not occur. Another study illustrates that the availability of good social support from families and health workers, as well as the affordability of healthcare services, can affect the patient's self-care behavior (Afik and Fikriana, 2021). Health belief is also a factor that influences a person's health behavior (Fikriana *et al*, 2021b). In someone who suffers from a disease, health beliefs will

affect the emotional response to the illness he is suffering from (Fikriana *et al*, 2020). In addition, health belief will be able to form a person's self-regulation where this will affect the ability to self-care (Nursalam *et al*, 2020). Self-regulation in medication adherence is influenced by age, gender, family history of illness, family support, and availability of health insurance. Meanwhile, health checks to health services are influenced by the age of the patient (Fikriana *et al*, 2019).

In conclusion, self-care behavior, as an effort to prevent heart attacks in ACS patients, comprises four themes, namely doing light physical activity, limiting the consumption of fatty and high-salt foods and increasing vegetable consumption, managing stress by motivating yourself more and praying to God, and taking medication as recommended and conduct health checks in health services. The practical implication of the results of this study is that health workers, especially nurses, can provide optimal nursing interventions to ACS patients by providing innovative programs to improve self-care behavior in the hope that there will be a decrease in heart attack recurrence so that the patient's health status and quality of life will be even better.

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## CONFLICT OF INTEREST DISCLOSURE

The authors declare no conflict of interest.

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