

# Paper 1

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# Trigger Stressor among Patients Coronary Heart Disease (CHD)

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## Abstract

**Introduction:** Chronic stress can trigger various diseases, one of those is a heart attack that can cause death. Conversely, patients who are diagnosed with coronary heart disease and had experienced a heart attack or arrhythmia will also experience stress due to the illness. **Method:** This study aims to determine the trigger stressor of Coronary Heart Disease. The research method is descriptive, with a cross-sectional research design. The population of this study was all patients with Coronary Heart Disease (CHD) who carried out the examination at the Cardiac Polyclinic, Dr. Soetomo Hospital, Surabaya. The study sample was 118 CHD patients. **Result:** The results showed that the majority of CHD patients had more than one year of illness, had experienced chest pain, and had hypertension, diabetes mellitus, or hypercholesterolemia. The main stressor in CHD patients was stress due to the last attack, but the fear of death and cautiousness to the subsequent attack is low. This condition was worsened by the low recognition of the basic signs and actions of the cardiac emergency. **Conclusion:** The doctor or nurse must pay attention to the psychological response of CHD patients by providing information or health education about the signs of the cardiac emergency and basic treatment when an attack occurs. Good information about signs and methods of handling cardiac emergencies will make patients feel calmer so that they can avoid worse and more sustained stress.

**Keywords:** Stressor, patient, coronary heart disease

## Introduction

Cardiovascular disease is a disease related to heart and blood vessel disorders. There are many types of cardiovascular disease, but the most common and most well-known is Coronary Heart Disease (CHD). The prevalence of coronary heart disease in Indonesia in 2013 was 0.5% or an estimated 883,447 people and is predicted to continue to increase in the coming year if no prevention is done<sup>(1)</sup>. Clinically Coronary Heart Disease is characterized by chest pain or discomfort in the chest, or chest feels severely stressed while doing strenuous activities or long distance walking. Cardiovascular disease is responsible for about 17 million deaths

every year in the world, about 25% of that is due to the cardiac emergency or sudden cardiac death<sup>(2)</sup>. Most sudden death occurs before the patient is hospitalized<sup>(3)</sup>. Individual who are detected with CHD must always be alert because anytime they can experience cardiac emergency due to blockage of the coronary arteries, which results blood supply to the heart is reduced. Damage to coronary arteries can occur due to high blood pressure or hypertension, hypercholesterolemia, smoking, diabetes, obesity, lack of exercise, high stress, and genetic.

Chronic stress can trigger various diseases, one of which is a heart attack that can cause death. Chronic stress has been proven to be associated with the development of cardiovascular disease<sup>(4)</sup>. Otherwise, patients which diagnosed with coronary heart disease, especially those who have had a heart attack or arrhythmia will also experience stress due to the illness they suffered. The results of previous studies have been related to stress, anxiety, and depression in people with heart disease<sup>(5)</sup>. Coronary Heart Disease (CHD) often becomes a

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comorbid mental disorder, especially Mood swing<sup>(6)</sup>.

This study aims to determine the trigger of stressor of patient Coronary Heart Disease. The results of this study are expected to provide information on stress factors in CHD patients. This research is important to be carried out as a basis for the continued care of CHD patients in order to minimize stress and avoid conditions that are worse due to the illness.

### Method

This research uses the descriptive method, with the aim to describe the trigger stressor of patient coronary heart disease. The design of this study uses cross-sectional, where all variables are measured at the same

time. The population of this study was all patients with coronary heart disease (CHD) who carried out the examination at the Cardiac Polyclinic, Dr. Soetomo Hospital, Surabaya. The study samples were 118 CHD patients with consecutive sampling technique. Data collection using a closed questionnaire, then data analysis was carried out descriptively

### Findings

This study describes personal factors and assessments of stressors for coronary heart disease patients. Personal factors in this study were measured through 5 (five) indicators, namely illness duration, chest pain attack, the presence of co-morbid disease, genetic disease, and lifestyle. The complete data can be seen in table 1.

**Table 1. Frequency Distribution of Personal Factors for Patients with Coronary Heart Disease in the Cardiovascular Polyclinic Dr. Soetomo Hospital, Surabaya (n = 118)**

No.	Indicator	Frequency	Percentage
1	Illness duration		
	< 1 year	15	12.7
	>1-5 years	46	38.9
	> 5 years	57	48.3
2	Chest pain attack		
	Happen	94	79.7
	Not Happen	24	20.3
3	Co-morbid disease		
	There are comorbidities (Hypertension, Diabetes Mellitus, Hyper cholesterol)	101	85.6
	There are no comorbidities	17	14.4
4	Genetic disease		
	There are genetic disease (CHD)	82	69.5
	There are no genetic disease	36	30.5
5	Lifestyle		
	Unhealthy	35	29.7
	Healthy	82	69.9

The results of the study can be seen in table 1. The majority of CHD patients suffer from disease more than 1 (one) year, and almost half (48%) suffer from disease more than 5 years, have co-morbidities of hypertension, diabetes mellitus, or hypercholesterolemia (85.6% ), had experienced chest pain (79.7%), had genetic heart disease (69.5%), and had a healthy lifestyle (69.9%).

The stressor factor is constructed by four indicators, i.e. stress due to previous attacks, fear of death, cautious to repeated attacks, and recognizing basic signs and actions of cardiac emergency, the complete data can be seen in the following table.

**Table 2. Frequency Distribution from Evaluation of Stressors of Patients with Coronary Heart Disease in Cardiovascular Polyclinic, Dr. Soetomo Hospital, Surabaya**

No	Indicator	Category				Total	
		High		Low			
		n	%	n	%	n	%
1.	Stress due to previous attacks	86	72.9	32	27.1	118	100
2.	Fear of death	50	42.4	68	57.6	118	100
3.	Cautious to repeated attacks	40	33.9	78	66.1	118	100
4.	Recognizing basic signs and actions of cardiac emergency	25	21.2	93	78.8	118	100

Table 2. Explaining that from 4 (four) indicators of stressor assessment factors, the indicators of stress due to previous attack were mostly (72.9%) high, and indicators of recognizing signs and basic actions of cardiac emergency were mostly (78.8%) low. While cautiousness against repeated attacks (66.1%) is low, so too is the fear of death (57.6%) low.

### Discussion

The results showed that the majority of CHD patients suffered from the disease for more than one year, and nearly half of CHD patients suffered from the disease more than 5 years. Pain is an unpleasant condition for someone. Especially if you have to suffer from a disease for a long time. Each individual has a different response in the face of an illness, this is related to how individuals perceive their illness, weight or lightness of an illness, family support, and past experience. The duration of suffering from illness and acutely experiencing a cardiac emergency that can occur at any time or a re-attack is a stressor of its own. The results of the study showed that the majority of CHD patients experienced stress due to past attacks (72.9%). The major depression worsens the cardiovascular-

lar prognosis, particularly for coronary artery disease, by significantly increasing the risk of recurrent coronary artery disease<sup>(7)</sup>. Chronic stress affects the development of CHD disease, the results of previous studies of patients who experienced Myocardia Acute Infection (MAI) had high stress after experiencing a heart

attack<sup>(4)</sup>. The majority of CHD patients have experienced chest pain (79.7%), the imbalance between myocardial oxygen demand and the availability of oxygen will cause the heart muscle to lack oxygen so that it will cause damage to the heart muscle or myocardial necrosis. Chest pain results from ischemia and nonischemic. This condition is very uncomfortable and can cause anxiety or trauma for individuals who experience it. Chest pain in patients with CHD are varies, patients often suggest a feeling of heavy or squeezed pressure, or pain that cannot be identified because the pain feels infinite and not specific. The impact of cardiovascular stress will affect psychological conditions, this is in accordance with Hans Selye's opinion, stress is life, the brain and body must always adapt to deal with various stimuli<sup>(5)</sup>. Chronic stress will cause pathophysiological effects that can cause metabolic disorders (glucose and lipid dysregulation). This is consistent with the results of the study the majority of CHD patients have co-morbidities of hypertension, diabetes mellitus, or hyper cholesterol (85.6%). High and persistent blood pressure will cause direct trauma to the coronary arteries. Psychosomatic fields can explain the impact of the balance of psychodynamic and biological aspects of physical health. A normal adaptive response to stress can sometimes be very intense or too long and trigger physiological modifications that are harmful to the body<sup>(7)</sup>. Severe stress or depression will worsen cardiovascular conditions, especially coronary artery disease, which is at risk of recurrent cardiac emergency. The doctor or nurse must be able to detect whether the patient is in a state of stress or

depression by understanding the patient from somatic and psychic aspects<sup>(7)</sup>.

Stressor study of fear of death have result that more than half of the respondents stated that they were not afraid of death (57.6%), this was supported by a low re-alert alert stressor (66.1%). Many factors can influence a person's perception of death, religion strongly influences that death is a matter of God, so they accept their fate and have a strong belief that it is the right of God. Besides the perception that coronary heart disease is deadly that is not a high stressor, makes CHD patients understand if they suffer from serious illness and close to death. The perception of not being afraid to die leads to the low of caution against repeated attacks in CHD patients. The results of previous studies stated that all risk groups underestimated their risk<sup>(8)</sup>. As evidenced by the results of the study, the majority of coronary heart disease patients were not familiar with heart attack signs, and did not know the basic actions to be taken when experiencing cardiac emergency, whereas the majority of CHD patients suffered from long illnesses and had experienced repeated attacks. This condition is very dangerous for CHD patients. Knowing the signs of cardiac emergency needs to be considered in CHD patients in order to take appropriate action before the worse conditions occur.

### Conclusion

Patients with coronary heart disease are have a high risk of experiencing stress due to past attacks. The doctor or nurse have to pay attention to the psychological response of CHD patients by providing information or health education about the signs of cardiac emergency and basic treatment when an attack occurs. Good information about signs and methods of handling cardiac emergencies will make patients feel calm so that they can avoid worse and more sustained stress.

**Conflict of Interest:** No

**Ethical Clearance:** Yes

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