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## **Social Education Regarding Healthy Living and First Aid When a Heart Attack Occurs**

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### **Abstract**

Heart attacks can attack anyone, not only old people but also young people. Sudden death is most often caused by a heart attack. Sudden cardiac arrest is an unexpected cause of death without previous trauma, which occurs within a short time, usually less than 1 hour from the onset of symptoms. As many as 75% of the causes of sudden heart attacks. However, until now the local community has not known about preventing first aid when a heart attack occurs properly and correctly, and an unhealthy lifestyle greatly affects our heart health. Therefore, the aim of this community service is to see what factors are behind unhealthy lifestyles in society which can cause heart attacks to occur in today's society and provide education to the public regarding first aid methods for preventing heart attacks in the community. In obtaining the data used were observation and literature study. This service activity is an effort to educate healthy lifestyle behaviors to prevent heart attacks in Air Pacah Village, Koto Tangah District, Padang City, West Sumatra. This effort is motivated by a lack of knowledge about healthy lifestyles. As a form of the author's thinking, several efforts and breakthroughs are offered, namely: 1.) The public is given knowledge on how to adopt a healthy lifestyle as an effort to prevent heart attacks, 2.) The public is given education on how to provide first aid when a sudden heart attack occurs, 3.) Community prevention efforts are made by building groups that care about healthy lifestyle and prevention of heart attacks from village or sub-district level to district or city and provincial levels so that it is hoped and provides knowledge and prevents deaths due to heart attacks.

**Keywords :** *Healthy Lifestyle, Heart, Heart Attack*

### **INTRODUCTION**

In recent times, information reporting about sudden death without prior diagnosis has begun to emerge. One of the causes of sudden death is a heart attack. This heart attack can occur anywhere and at any time. People are often late in carrying out initial treatment, seeking information and help (Elgiaridi, 2022). Heart and blood vessel disease or cardiovascular disease is currently still the highest cause of death in the world. WHO states that every year deaths due to cardiovascular disease reach more than 17.8 million. Meanwhile, data from the Indonesian Ministry of Health in 2023 in Indonesia the death rate due to this disease will reach 650,000 people per year (Prasetya, 2023).

According to the World Health Organization (WHO) (2021), heart attacks are the main cause of death globally. An estimated 17.9 million people died from cardiovascular disease in 2019, representing 32% of all global deaths. Cardiovascular disorders are health disorders that show an increasing trend, heart attacks are responsible for less than 10% of deaths worldwide. Now heart attacks account for close to 40% of deaths in developed countries and around 28% in poor and developing countries (Berutu, *et al.*, 2023).

Heart Attack (Myocardial Infarction) is a condition that occurs due to lack of blood flow to the heart muscle due to blockage or narrowing of the blood vessels. This condition is quite dangerous and is a life-threatening emergency, so it needs treatment as soon as possible. Myocardium or heart muscle is a vital organ in the body whose function is to pump blood containing oxygen and nutrients throughout the body, including the brain. If blood flow is obstructed for a long time, the heart muscle will experience damage which can lead to death (Lalenoh, 2024).

The onset of a heart attack and taking action quickly and appropriately can have a significant impact on morbidity and mortality. Among patients who suffer a heart attack, longer delays before hospital admission for emergency treatment may negatively impact the patient's prognosis. Every year, thousands of people die or suffer permanently because no appropriate action is taken to treat the symptoms of a heart attack (Putra, *et al.*, 2023).

According to Ahmed, *et al.* (2020) states that heart attacks usually appear as chest pain or discomfort that can spread to the arms, neck, jaw and back and are accompanied by difficulty breathing and sweating. In addition, in some diabetic or elderly patients, heart attacks can sometimes occur silently and with atypical symptoms, such as abdominal pain. This delay can occur due to lack of awareness of the symptoms of a heart attack, which then increases the death rate. In other patients the delay may be due to denial of the condition, fear and unwarranted beliefs, and some patients may be afraid of being embarrassed if they go to the hospital for treatment without a definite need.

Heart attacks can basically strike suddenly and can be life threatening. So this needs to be watched out for early. Increasingly, scientists are developing early warning methods. For example, with the development of technology, researchers created a tool for detecting repeated attacks (Rahayu, *et al.*, 2020).

According to Erlina (2018), things and situations that occur in society today are not realizing that the cause is symptoms of a heart attack. So people don't know if they are having a heart attack, receive treatment late, and even die before arriving at the hospital. This condition is caused by people still having a negative perception and assuming that heart attacks are caused by "sitting winds". In fact, what happened was a serious thing related to a vital organ, namely the heart. The research results explained that some people stated that they did not believe they had experienced a heart attack (Kurniawan, *et al.*, 2015). The American Heart Association (AHA) (2019) states that when a heart attack occurs, the pain is like being crushed by concrete. In theory, the symptoms of a heart attack are discomfort or pain in the chest, shortness of breath, dizziness, nausea, vomiting, cold sweat.

Apart from the symptoms of a heart attack, people also need to know the factors that cause heart attacks. So by knowing the causal factors, people can minimize the risk factors for heart attacks. The causative factors are that as you get older you are more at risk of having a heart attack, hypertension, smoking, cholesterol, obesity, diabetes, lack of physical activity, air pollution, stress, and so on are also at high risk of having a heart attack (Ministry of Health, 2022).

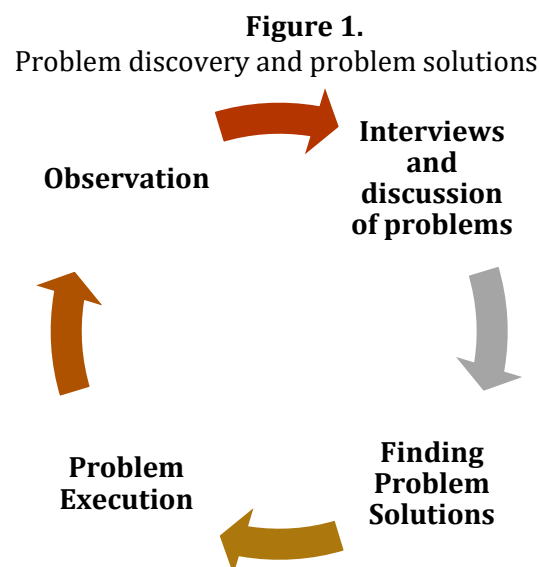
There are factors that cause heart attacks that can be minimized, symptoms are recognized early, and assistance is received early and appropriately; then the death rate due to heart attacks can be reduced (Lalenoh, 2024). Data from the World Health Organization (2017) states that heart disease, one of which is heart attack, is still the number one killer in the world. Four out of five deaths are caused by heart attacks and strokes (World Health Organization, 2019). Therefore, there needs to be concern from health workers, the academic community, and the community, especially families, to get involved in health promotion and preventive actions.

A healthy lifestyle is needed to prevent heart attacks because having a healthy heart is one of the keys to a long life. To get it, it turns out you don't need a complicated method, it could even be said to be easy and simple, namely by actively moving, eating healthy food, monitoring cholesterol levels, stopping smoking, and maintaining an ideal body weight. Apart from adopting a healthy lifestyle, it is also important to manage stress well. The reason is, feeling pressured to the point of stress is one of the risk factors for having a heart attack (Fadli, 2022).

When the author carried out his service in Air Pacah Village, Koto Tangah District, Padang City, West Sumatra, the author encountered problems experienced by the people of Air Pacah Village, namely a lack of information and socialization that healthy lifestyle behavior is a form of preventing heart attacks. A healthy lifestyle can also be one of the keys to extending life.

Therefore, the author believes that holding social education about healthy living and first aid when a heart attack occurs in Air Pacah Village, Koto Tangah District, Padang City, West Sumatra, which can be useful for providing education about healthy lifestyle behaviors that can reduce the risk of heart attacks in local community.

## METHODS



When discussing with sub-district officials, village heads, heads of health centers in Air Pacah District and the community in Air Pacah Village, Koto Tangah District, Padang City, West Sumatra, the activity method used was theory and direction to the community as participants who took part in the socialization as well as introducing and giving direction to the participants. what is the impact of healthy lifestyle behavior so that it can have a positive impact on society and how to prevent it if a sudden heart attack occurs so that it can be treated quickly. From the observations made, it can be concluded that the public and participants do not fully understand that a healthy lifestyle has an impact on reducing sudden heart attacks and how to treat them. The problems presented in this method are such as:

1. What is a Healthy Lifestyle
2. Negative impacts of unhealthy lifestyle behavior
3. Solutions on how to prevent and provide first aid if a sudden heart attack occurs

## RESULT AND DISCUSSION

The result of this community service is providing important benefits in a healthy lifestyle in preventing heart attacks and providing first aid in the event of a sudden heart attack for the socialization participants. If previously the socialization participants did not know, they would know how to prevent it properly and correctly.

**Table 1.** Number of Training Participants

| No. | Participant                                   | Number of participants |
|-----|-----------------------------------------------|------------------------|
| 1   | Village Devices                               | 5                      |
| 2   | Community Health Center Equipment Participant | 5                      |
| 3   |                                               | 25                     |
|     | Total                                         | 35                     |

**Table 2.** Composition of Community Service Activities and knowledge in Air Pacah Village, West Sumatra Province

| No. | Material Contents                                                          | Presentation of Knowledge Information presented |       |
|-----|----------------------------------------------------------------------------|-------------------------------------------------|-------|
|     |                                                                            | Before                                          | After |
| 1   | Explanation of Heart Attacks                                               | 45%                                             | 95%   |
| 2   | Factors that cause Heart Attacks                                           | 25%                                             | 85%   |
| 3   | Signs and Symptoms of a Heart Attack                                       | 20%                                             | 85%   |
| 4   | How to Prevent Heart Attacks                                               | 15%                                             | 80%   |
| 5   | How to Do First Aid if a Sudden Heart Attack Occurs                        | 10%                                             | 87%   |
| 6   | What is a Healthy Lifestyle                                                | 40%                                             | 90%   |
| 7   | How to adopt a healthy lifestyle to prevent heart attacks                  | 35%                                             | 98%   |
| 8   | What foods are good to consume and not to consume to prevent heart attacks | 35%                                             | 92%   |

This Community Service Activity carries the theme "Socialization of healthy lifestyles to prevent heart attacks and providing assistance for heart attacks in Air Pacah Village, Padang City". The activity began with a quiz on 35 participants in the socialization of the Air Pacah sub-district, West Sumatra, and the result was that >45% of the participants had never received information about how to live a healthy lifestyle and how to provide first aid in the event of a sudden heart attack. This was followed by a presentation of material about what a healthy lifestyle is, the positive impact of healthy lifestyle behavior, efforts to prevent it and how to treat and provide first aid to people who experience a sudden heart attack. This was followed by a 30 minute question and answer session. Before ending the activity, another quiz was held. Based on the quiz conducted at the end of the session on socialization participants, the results showed that there was an increase in knowledge about healthy lifestyles to prevent heart attacks and first aid in the event of a sudden heart attack after the education was carried out. Socialization participants can answer questions asked by the presenter facilitator correctly.

The results of this community service, namely the implementation of the Healthy Lifestyle Socialization program and prevention simulations on First Aid on how to deal with a sudden heart attack in the meeting hall, Air Pacah Village, Koto Tengah District, Padang City, West Sumatra Province, are increasing participants' understanding and skills in handling emergency situations, especially in treating victims with a history of heart attack. Through an interactive communication-based approach, participants are provided with knowledge about the signs and appropriate first aid steps in these situations. During the outreach activities, participants were given an in-depth understanding of the signs of a heart attack and appropriate first aid steps to help victims. They were also given information about procedures for carrying out Cardiopulmonary Resuscitation (CPR) on victims with a history of heart attack.

Through a combination of socialization and simulation approaches, this program is able to achieve its main goal of increasing participants' readiness and responsiveness in emergency situations, especially in treating victims with a history of asthma and heart attacks. Thus, this program is an important step in preparing communities to respond to emergencies more effectively and potentially save lives (Ukkasah, *et al.*, 2024). According to Berutu et al. (2023) stated that first aid in emergency situations is very important, especially for those who have a history of heart attacks. Both of these conditions require fast and appropriate treatment to avoid serious complications and even death.

A heart attack, also known as myocardial infarction, occurs due to obstruction of blood flow to the heart muscle. The main cause of this condition is coronary heart disease. Coronary heart disease occurs when the coronary blood vessels that supply blood to the heart become blocked. This blockage occurs due to cholesterol deposits which form plaque on the walls of blood vessels (Pittara, 2022).

Heart attack or myocardial infarction occurs due to narrowing or blockage of the coronary arteries. This narrowing is usually caused by atherosclerosis, namely the buildup of plaque from saturated fat, trans fat, LDL cholesterol and other substances on the inner lining of the coronary artery walls. Atherosclerotic plaque can prevent blood rich in oxygen and nutrients from reaching the heart muscle. When blood does not reach the heart muscle, blood flow to the heart becomes less than optimal, decreases or even stops suddenly. As a result, the heart does not get the oxygen supply it needs to carry out its functions. When this condition persists for a long time, muscles can experience permanent damage and lead to death (Lalenoh, 2024).

According to Maulana (2024) Heart attacks are divided into two types based on their severity, namely:

1. ST-segment-elevation myocardial infarction (STEMI) for severe attacks. The arteries are completely blocked due to blood clots so that the heart muscle begins to die because it does not receive a blood supply.
2. Non-ST-segment-elevation myocardial infarction (NSTEMI) if only part of the artery is blocked so that the heart muscle can still get blood flow, even though it is less.

Even though it is deadly, heart attack patients can still be saved if they are taken to hospital as soon as possible. People who have recovered from a heart attack can improve their health condition to normal, even healthier, by undergoing appropriate medical therapy.

According to the Ministry of Health (2024), the symptoms of a heart attack that you should watch out for are :

1. Heart palpitations or known as palpitations. This heart symptom feels like the chest is being squeezed
2. There is nausea and vomiting
3. Shortness of breath, which is usually accompanied by cold sweat, weakness, palpitations, and even fainting
4. Cold sweats and feeling tired easily
5. Left chest pain
6. Sufferers usually feel pain such as being hit by a heavy burden, pain and a feeling of being squeezed or burning in the chest

According to Ukkasah *et al.* (2024) The importance of first aid in emergency situations for sufferers with a history of heart attack by emphasizing the importance of knowledge, skills and quick and appropriate action to save lives and prevent more severe complications. The basic knowledge about heart attacks is::

1. Before providing first aid, it is important for everyone to understand the symptoms and signs of heart attack and asthma
2. A heart attack is usually characterized by chest pain that feels like pressure or burning, shortness of breath, nausea, vomiting, and discomfort in the upper part of the body.
3. Meanwhile, asthma symptoms include difficulty breathing, coughing up phlegm, chest tightness, and rapid heartbeat. Basic knowledge about heart attacks and asthma is the importance of understanding the symptoms and signs of each condition to provide appropriate and fast first aid.

According to Alhas (2023) First aid given to people experiencing a heart attack is as follows:

1. Calling Medical Help: The most important first step is to call the local medical emergency number (eg 119 in Indonesia) to get immediate professional help.
2. Give Nitroglycerin (If Available): If the victim has nitroglycerin which is usually used to treat heart attacks, help the victim to consume it.

3. Performing CPR (Cardiopulmonary Resuscitation): If the victim stops breathing or has no heartbeat, immediately perform CPR until medical help arrives.
4. Controlling Pain: Help the victim sit comfortably or in a position that is most comfortable for them. Don't let the victim move too much.
5. Monitor Vital Signs: Continuously observe the victim's breathing, heart rate, and consciousness.

Verawati (2020) stated that considering the high rate of heart disease in Indonesia, it is necessary to make efforts to prevent heart disease, namely with a healthy lifestyle. Here are some tips for maintaining heart health, namely:

1. Do not smoke

The substances contained in cigarettes can increase the growth of plaque in blood vessels, thereby risking heart disease.

2. Healthy eating patterns

A healthy diet for heart health such as eating lots of fruit and vegetables, eating a diet rich in whole grains, a diet low in salt, eating low-fat foods, avoiding junk food and fried foods.

3. Maintain ideal body weight

Excess weight forces the heart to work harder, losing a few pounds can reduce the risk of heart disease.

4. Active lifestyle

Exercise can keep body weight stable, regular exercise can reduce LHL levels so that the possibility of cholesterol deposition can be avoided. Choose light exercise such as walking around the house regularly in the morning.

5. Avoid alcoholic drinks

Consuming excessive alcohol can increase the risk of hypertension which can ultimately lead to heart disease. Apart from that, consuming excessive alcohol can also cause damage to liver function.

6. Avoid stress

When a person experiences stress, blood pressure increases, blood flow is not smooth and can cause problems with heart function. There are several ways to manage stress to avoid heart disease, such as exercising, doing activities you like, getting enough sleep, or if necessary, consulting a psychologist.

7. Check yourself with a doctor

Many people are afraid to go to a health facility to check themselves. When you are sick, immediately go to a health facility so you can detect various diseases at an early stage. So don't hesitate to see a doctor when you are sick so that serious illness can be avoided.

## CONCLUSION

Based on the explanation above, it can be concluded that this service activity has broadened the insight of participants such as village and sub-district officials, community health centers and the community who took part in this training in realizing that the positive impact of healthy lifestyle behavior can have a good impact on people's lives and can prevent sudden heart attacks. The promotion of healthy lifestyles and ways to prevent sudden heart attacks currently still has many obstacles, such as:

1. Lack of knowledge of government apparatus in sub-districts, sub-districts, health centers and the community in particular so that prevention of sudden heart attacks is not optimal
2. The government plays an important role in facilitating and providing education on how to provide first aid in the event of a sudden heart attack

## EXPRESSING OF THANKING

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