

## THE INFLUENCE OF VIDEO-BASED EDUCATION AND LEAFLETS ON IMPROVING FAMILY KNOWLEDGE AND ATTITUDES IN THE PREVENTION OF CORONARY HEART DISEASE

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### Abstract

*The prevalence of coronary heart disease in Indonesia continues to rise. Efforts to prevent coronary heart disease thru increasing family knowledge are very much needed. One of the efforts that can be made to increase family knowledge is thru health education using video media and leaflets. Research discussing the influence of educational media such as videos and leaflets on family knowledge in the prevention of heart disease is still limited. In addition, based on interviews with several family members in Tanah Datar Village, they stated that they have never received information about PJK prevention thru videos and leaflets. The number of people with hypertension and diabetes mellitus, which are risk factors for cardiovascular disease, is also quite high. The purpose of this study is to determine the effect of video- and leaflet-based education on improving families' knowledge and attitudes regarding the prevention of CHD. This research is an experimental study with a One group pre-test-post-test design approach. The sample size is 105 participants. Data analysis was performed using SPSS with a Paired Sample T-Test. A p-value of < 0.05 was considered statistically significant. The average knowledge score before the intervention was 53.41, and after the intervention, it was 84.49, with a p-value of 0.000. The average attitude score before the intervention was 22.70, and after the intervention, it was 33.90, with a p-value of 0.000. The intervention of health education videos and leaflets significantly improved the family's knowledge about CHD prevention and their attitudes towards preventive actions.*

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### INTRODUCTION

According to the World Health Organization, cardiovascular diseases cause around 17.9 million deaths, with the majority due to coronary heart disease. Global statistics state that 45% of the 9.4 million deaths are caused by coronary heart disease. It is also estimated that this death toll will increase to 23.3 million by 2030(1). In Indonesia, deaths from cardiovascular diseases reach 651,481 annually, consisting of 245,343 deaths from coronary heart disease, 331,349 deaths from stroke, and 50,620 deaths from hypertensive heart

disease (2). Data from Riskesdas shows that the prevalence of cardiovascular diseases in Indonesia, such as hypertension, increased from 25.8% (Riskesdas 2013) to 34.1% (Riskesdas 2018), and coronary heart disease increased from 0.5% to 1.5% (2). In Riau Province, 18,000 people are suffering from coronary heart disease, with 7,500 deaths annually (3). Coronary heart disease is a preventable condition through a healthy lifestyle. Studies have shown that adopting a healthy lifestyle can reduce the risk of coronary heart disease by 82%. Modifiable risk factors for coronary heart disease include smoking, hypertension, high

cholesterol, diabetes mellitus, obesity, lack of exercise, alcohol consumption, and stress (4). Hypertensive respondents are 2.667 times more likely to suffer from coronary heart disease than those who are not hypertensive. Similarly, diabetes mellitus increases the risk of coronary heart disease by 2.127 times (5). The duration of smoking is associated with coronary heart disease occurrence (6). The risk factors for coronary heart disease at the Pekan Heran Health Center have been increasing, with hypertension rising from 642 in 2022 to 746 in 2023. Likewise, diabetes mellitus increased from 257 to 260 cases, and coronary heart disease increased by 15 cases (3).

Tanah Datar Village is a designated area under the guidance of the Pekanheran Health Center and a mentoring village for the Poltekkes Kemenkes Riau PSDKU campus. The number of hypertension patients is 126, and the total number of diabetes patients is 17. There are 3 cases of coronary heart disease (7). The increasing incidence of coronary heart disease is due to the lack of preventive efforts and insufficient knowledge related to risk factors for coronary heart disease (8). The increase in Coronary Heart Disease is caused by the lack of public knowledge about the risk factors of coronary heart disease, leading to insufficient efforts by the community in preventing the disease (9). Research states that there is an influence of multimedia education on the improvement of family knowledge in the early detection of CVD risk factors and family attitudes in the early detection of CVD risk factors (10).

Family support is essential in preventing coronary heart disease because family members are those who interact daily with each other. Therefore, the knowledge and attitudes of the family must be improved. One way to enhance knowledge and attitudes is through education using videos and leaflets. Information media vary widely, but among them, television or videos are the most effective in delivering and receiving messages. Messages conveyed through videos can be quickly and easily remembered and can be repeated. In addition to videos, leaflets were also provided, which are made with

various images, colors, and attractive designs to ensure that respondents can refer to them if they wish to obtain clearer information. This study aims to improve family knowledge and attitudes in the prevention of coronary heart disease, considering the increasing cases and other risk factors that may lead to coronary heart disease.

## METHODS

This research is a pre-experimental study with a One Group Pre-Test Post-Test Design, which involves measuring the knowledge and attitudes of families in a single group without a comparison group. Before the health education intervention on coronary heart disease prevention through video and leaflets, a pre-test measuring the knowledge and attitudes of respondents regarding coronary heart disease prevention was conducted. After the intervention, a post-test was conducted to measure the family's knowledge and attitudes again. The sampling technique used was purposive sampling. The sample size, based on Slovin's formula, was 105 respondents out of the total population of 143 families of hypertension and diabetes mellitus patients. The selected samples were families with members who suffer from hypertension and diabetes mellitus.

The research was conducted in several stages. The first stage involved a pre-test to assess the families' knowledge and attitudes regarding coronary heart disease prevention, followed by the intervention of a video screening (conducted face-to-face). After the video screening, each respondent was given a leaflet containing information on coronary heart disease prevention. In the next stage, the researcher sent the coronary heart disease prevention video via a WhatsApp group for respondents to study independently and watch repeatedly for one week. Following that, the respondents were gathered again to conduct a post-test on their knowledge and attitudes regarding coronary heart disease prevention. The research was conducted at the multi-purpose building of the Tanah Datar Village office. If any families were absent, home visits were

made to the respondents. Data collection was done using a questionnaire on knowledge of coronary heart disease prevention. Family attitudes toward efforts in preventing coronary heart disease were measured using 10 attitude statements. The knowledge questionnaire on coronary heart disease prevention consisted of 18 questions. The validity test of the research instrument uses the Pearson Product-Moment correlation; if the calculated *r* value is greater than the table *r* value, it is declared valid. The reliability test uses Cronbach's Alpha; it is considered reliable if the Cronbach's Alpha value is greater than 0.6. Data analysis was performed using SPSS with a Paired Sample T-Test. A *p*-value of < 0.05 was considered statistically significant.

**RESULTS AND DISCUSSION**

The intervention was provided in the form of a 10-minute educational video containing material on the definition, risk factors, signs and symptoms, and prevention of coronary heart disease. The video was presented audiovisually with narration. After the intervention, the video was sent to the respondents to be studied and understood independently for 1 week. In addition, respondents were also provided with a leaflet containing similar information, including definitions, risk factors, signs and symptoms, and prevention of coronary heart disease. The leaflet was written in simple language and included images to facilitate understanding. The research results can be seen in the table below.

**Table 1. Frequency Distribution Based on Respondent Characteristics**

Characteristics	Frequency	Percentage(%)
Age:		
a.21-39 Years	70	66.7
b.40-60 Years	33	31.4
c.>60 Years	2	1.9
Total	105	100
Education Level		
a.Low (≤High School)	90	85.7
b.High (>High School)	15	14.3
Total	105	100

Based on Table 1, it can be seen that most respondents are in the 21-39 age range, which is categorized as early adulthood. The majority of respondents have a low education level (≤ High School), with 90 respondents (85.7%) having this education level, while 15 respondents (14.3%) have higher education (> High School). Education level is related to a person's knowledge. The higher a person's education, the broader their knowledge and perspectives, which allows them to absorb and accept information more easily.

**Table 2. Frequency Distribution of Knowledge Improvement of Respondents Pretest and Posttest After Intervention**

Variable	Mean	Std Deviation	p-value
Pre-test Value	53.41	9.72	
Post-test Value	84.49	12.85	0.000

Based on Table 2, it can be seen that the average score before the health education intervention through video and leaflet about coronary heart disease was 53.41 with a standard deviation of 9.72, and the average score after the health education intervention was 84.49 with a standard deviation of 12.85. The statistical test result showed a *p*-value of 0.000, which is less than the alpha value (0.05), indicating that there was a significant effect on the respondents' knowledge after receiving health education through video and leaflet about coronary heart disease in Tanah Datar Village, which is under the working area of the Pekan Heran Health Center, Rengat Barat District.

The increase in the respondents' knowledge, or the knowledge of families of hypertension and Diabetes Mellitus (DM) patients regarding coronary heart disease prevention, is due to the fact that the families of patients received health education through videos and information from the leaflets provided after the intervention. Family knowledge about coronary heart disease prevention is crucial because families are the closest people to hypertension and DM patients and provide daily care. Therefore, families must have

accurate knowledge and attitudes regarding coronary heart disease prevention, and they need to understand the risk factors of coronary heart disease.

This study is in line with the research by Diyono and Nisma in 2017, which stated that the increase in coronary heart disease is due to the lack of public knowledge about the risk factors for coronary heart disease, leading to insufficient efforts in preventing the disease. Other research also states that the increase in coronary heart disease cases is due to the lack of preventive measures and insufficient knowledge regarding the risk factors for coronary heart disease (8). Another similar study also states that there is an influence of multimedia education on the increase in family knowledge in the early detection of coronary heart disease risk factors and family attitudes in the early detection of coronary heart disease risk factors (10). This is also in line with Mindiharto's opinion, which states that audiovisual methods can enhance individual knowledge, because audiovisual methods can attract and direct attention to concentrate on the material related to the media used, stimulate emotions and individual attitudes, and facilitate and simplify understanding and remembering the information or message contained..

**Table 3. Frequency Distribution of Respondents' Attitude Improvement in Pretest and Posttest Intervention**

No	Variable	Mean	Std Deviation	p-value
1	Pre-test Value	22.70	1.47	0.000
2	Post tes Valuet	33.90	1.00	

Table 3 shows that the statistical test results indicated that the average pretest score of respondents' attitudes before the intervention with the video education on coronary heart disease prevention was 22.70 with a standard deviation of 1.47. After the intervention with the video education and the provision of leaflets, the average score increased to 33.90 with a standard deviation of 1.00. The statistical test yielded a p-value of 0.000, which is less than the alpha value (0.05). This

means there was a significant effect on respondents' attitudes before and after the intervention. The improvement in respondents' attitudes is due to the fact that they received education through videos and leaflets about coronary heart disease prevention.

A person's attitude involves several aspects of knowledge. An important aspect of attitude is feelings or emotions. A person's tendency to act is closely related to the knowledge they possess. To improve knowledge and attitudes in order to change behavior, health education is necessary (11). Multimedia education (video and leaflet) for health information will be more easily retained because it can stimulate various senses such as hearing, touch, and sight (10). This study shows that providing health education through videos and leaflets affects a person's attitude. Therefore, it can be concluded that attitudes will form when someone knows and understands an object, and then it is interpreted in the form of action. The improvement of family attitudes toward coronary heart disease prevention is expected to influence family behavior in preventing coronary heart disease in everyday life.

**CONCLUSION**

There was an increase in the knowledge and attitudes of respondents after receiving the intervention of educational videos and leaflets about coronary heart disease prevention. Considering that coronary heart disease must be prevented early, it is recommended that future research focus on adolescents as the target respondents. The results of this research can serve as the basis for developing an educational media program in the form of animated videos for teenagers.

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