



Implementation of Audiovisual Media in Cardiopulmonary Resuscitation Education to Improve Basic Life Support Knowledge among Patients with Cardiovascular Disorders: A Case Study

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ABSTRACT

Introduction: Cardiovascular disease is the main cause of global mortality in the world, especially in cases of heart failure. Heart failure is a condition when the heart suddenly stops working, whether in people who are already known to have heart disease or in people who have not yet been diagnosed.

Objective: Knowing the level of basic life support knowledge before and after being given the implementation of cardiopulmonary resuscitation education using audiovisual media.

Method: The design applied in this writing is a case study, in carrying out a descriptive exploration of the main idea of the discussion, namely the Implementation of Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders.

Result: Before implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support in Patients with a History of Cardiovascular System Disorders for 3 days, the level of knowledge of the respondent, Mrs. R 25% (less) and Mrs. E 35% (less) and after implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support in Patients with a History of Cardiovascular System Disorders for 3 days, the respondent's level of knowledge increased, Mrs. R increased 75% (enough) and Mrs. E increased 75% (enough).

Conclusion: Implementation of Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support for Patients with a History of Cardiovascular System Disorders can increase a person's knowledge.

Keywords: Education, cardiopulmonary resuscitation, audiovisual media, knowledge

Introduction

Cardiovascular disease is the main cause of global mortality in the world, especially cases of cardiac arrest (Ambarita, 2024). Cardiac arrest is a condition when the heart suddenly stops working, both in people who are known to have heart disease and those who have not yet been diagnosed (Asiva Noor Rachmayani, 2021). Most cases of cardiac arrest occur in the community, but the success of help from the general public is greatly influenced by their attitude, knowledge and confidence in handling the situation (Cahyo, 2024). Heart failure is an abnormality in the structure or function of the heart that causes the heart to fail to distribute oxygen throughout the body, resulting in disruption of the cardiovascular system (Yogi, 2020).

Therefore, in cases of cardiac arrest in an emergency situation, the person who first finds the victim must act quickly with first aid. However, if you do not have a good understanding of Basic Life Support (BHD) procedures, these efforts risk having fatal impacts (Sumadewi et al., 2023). There are various kinds of cardiovascular diseases, but the most common one experienced by the global community is heart disease which can cause sudden death (Damayantie & Rusmimpon). Cardiopulmonary resuscitation (CPR), or basic cardiac life support, is the first aid for cardiac arrest. This basic life support is generally designed for cardiac arrests outside of a hospital before medical assistance is received (Irfani, 2019).

In cases of cardiac arrest, it can cause death, where in 2019, cardiovascular disease was the cause of death for around 17.9 million people in the world, which is equivalent to 32 percent of all global deaths (World Health Organization, 2019). In the United States, cases of cardiac arrest each year reach 250,000 and it is estimated that 95% die before reaching a medical facility. (Ari Muji Astutik, 2021). According to the American Heart Association (2021), every year more than 420,000 cases of cardiac arrest occur outside hospitals in the United States, apart from that, Indonesian data regarding the incidence of cardiac arrest outside hospitals has not yet been obtained (Fitri et al., 2024).

According to the South-East Asia Region (SEAR) in 2020, in Indonesia, in 2018, this country was ranked 13th globally with the number of cases at 26.4%. (Nurannisya, 2022). Based on the results of basic health research published by the Ministry of Health, the prevalence of heart disease in Indonesia diagnosed by Medical Center was recorded at 1.5%. The highest province is North Kalimantan at 2.2%, followed by the Special Region of Yogyakarta and Gorontalo at 2% each (Kementerian Kesehatan RI, 2021). Emergency cases such as heart attacks often occur outside of hospitals, such as in schools, workplaces, and other settings. Therefore, immediate treatment from trained medical personnel or first aid personnel is essential to prevent death (Elfira & Rahmaddian, 2024). Cardiopulmonary resuscitation (CPR) is a lifesaving procedure administered to someone experiencing cardiac and respiratory arrest. This condition can occur due to heart attacks, drowning, electric shock, poisoning, accidents, and various other causes (Muhamad Ghifari et al., 2022).

Cardiopulmonary resuscitation is a basic first aid technique that aims to supply oxygen to the brain and heart until conditions are stable, and is the primary action in cases of cardiac and respiratory arrest, which plays a role in increasing the chances of survival (Wahyunadi et al., 2021). There are three target groups for health education: the first is the primary target, which is the immediate goal of the community for all health education or promotion efforts (Kanda, 2022). The second is the secondary target, which is the goal of indigenous communities, who are expected to provide health education to the surrounding

community. The third is the tertiary target, which is the goal of health policymakers (Beno et al., 2022).

Health education plays an important role in increasing knowledge using educational media such as audiovisuals, which are considered more effective in conveying educational material (Aziz & Zakir, 2022).

Objective

Knowing the level of basic life support knowledge before and after being given the implementation of cardiopulmonary resuscitation education using audiovisual media.

Method

This study employed a case study approach to provide a descriptive overview of the application of cardiopulmonary resuscitation (CPR) education using audiovisual media to increase knowledge about basic life support. The research was conducted in the working area of the Maccini Sawah Community Health Center over three days, from December 16 to December 18, 2024. The participants were two housewives aged 40–45 years who had cardiovascular system disorders. The inclusion criteria consisted of being willing to participate as respondents, having a high school or equivalent education, being an adult, having a family history of cardiovascular disease, and being able to understand Indonesian. The exclusion criteria included being uncooperative, deaf, or blind. The intervention consisted of simple education delivered through lectures, demonstrations, and videos. Lectures were given directly to each respondent, and the demonstration included examples of CPR implementation along with a video showing first aid for patients outside the hospital. On December 16, a pre-test was conducted using a questionnaire of 20 items with an allocated time of 20 minutes. On December 17, the education session on CPR using audiovisual media to enhance knowledge of basic life support was conducted for 45 minutes. Finally, on December 18, a post-test questionnaire consisting of 20 items was administered, with 20 minutes given for completion.

Result

Table 1. Knowledge Before and After CPR Education with Audiovisual Media

Participant	Time		Improvement
	<i>Pre test</i>	<i>Post test</i>	
Ny. R	25%	75%	50%
Ny. E	35%	75%	40%

Based on the results of a case study conducted by the author on 2 subjects regarding the Implementation of Cardiopulmonary Resuscitation (CPR) Education Using Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders, which was carried out in the working area of the Maccini Sawah Community Health Center for 3 days starting from 16 December - 18 December 2024.

On the first day of the visit, on subject I Mrs. "R" the author obtained the results of a pre-test before implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders, on Monday, December 16, 2024, at 1:00 PM with the pre-

test results obtained on Mrs. "R" were 25% (less). On the second subject on Monday, December 16, 2024, at 1:30 PM with the results of Mrs. "E" the first day before implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders. with the pre-test results obtained on Mrs. "E" were 35% (less). Because it had not been implemented on the first day.

On the second day of the visit, Tuesday, December 17, 2024, at 2:30 PM, the author obtained results from the implementation of Cardiopulmonary Resuscitation (CPR) education using audiovisual media to improve knowledge of Basic Life Support in patients with a history of cardiovascular disorders for 30 minutes. On the second day, December 17, 2024, at 3:30 PM, the implementation of Cardiopulmonary Resuscitation (CPR) education using audiovisual media to improve knowledge of Basic Life Support in patients with a history of cardiovascular disorders was carried out for 30 minutes.

On the third day of the visit, on December 18, 2024, at 15:00, the results of subject I, Mrs. "R", were obtained. The results of the author conducting a post-test after implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders with the post-test results obtained on Mrs. "R" were 75% (sufficient) carried out for 30 minutes. On the second subject on December 18, 2024, at 14:00, the results of the third day were obtained on Mrs. "E", the results of the author conducting a post-test after implementing Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders. with the post-test results obtained on Mrs. "E" were 75% (sufficient). Knowledge is sufficient because the implementation has been carried out for 30 minutes.

After implementing Cardiopulmonary Resuscitation (CPR) education using audiovisual media on basic life support knowledge in patients with a history of cardiovascular disorders for 3 days, respondents' knowledge levels increased. This is in line with research (Masruri, 2021) which states that there is an effect of providing education on Cardiopulmonary Resuscitation on increasing knowledge. The education provided is very effective in increasing respondents' knowledge about basic life support.

Meanwhile, other research (Frisilia, M. 2024). also states that knowledge about basic life support, especially in cases of cardiac arrest, is very important and must be known by all levels of the general public, considering the role of the general public as first aiders, especially those who are close to the location of victims experiencing cardiac arrest.

Discussion

The results of this case study indicate that the implementation of cardiopulmonary resuscitation (CPR) education using audiovisual media effectively increased the knowledge of basic life support among patients with a history of cardiovascular system disorders. Before the intervention, the pre-test scores of the two subjects were relatively low, with Mrs. "R" scoring 25% and Mrs. "E" scoring 35%, indicating insufficient knowledge. After the intervention, which included lectures, demonstrations, and videos conducted over 30 minutes, the post-test scores for both subjects increased significantly to 75%, classified as sufficient.

These findings are consistent with previous research indicating that CPR education can significantly improve knowledge (Masruri, 2021). The observed improvement suggests that

audiovisual-based education is an effective method for enhancing understanding of basic life support, particularly among patients at risk of cardiovascular emergencies.

Furthermore, the results highlight the importance of basic life support knowledge for the general public, particularly in cases of cardiac arrest. Knowledge of basic life support is crucial for first responders, especially those close to the victims, in providing timely and effective first aid (Suleman, 2023). Therefore, structured educational interventions using audiovisual media can be a valuable strategy to equip both at-risk individuals and the broader community with essential life-saving skills.

Conclusion

Based on the results of a case study conducted by the author regarding "Implementation of Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders", it can be concluded that after providing the Implementation of Cardiopulmonary Resuscitation (CPR) Education with Audiovisual Media on Basic Life Support Knowledge in Patients with a History of Cardiovascular System Disorders, a person's knowledge can be increased.

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Authors' contribution

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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