THE ROLE OF APPLICATION-BASED BASIC LIFE SUPPORT FOR NON-HEALTHCARE PROVIDERS DURING COVID-19 PANDEMIC

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ABSTRACT

The Coronavirus Disease (COVID-19) pandemic has forced us to make significant changes in teaching and learning activities, including restrictions on face-to-face meetings. However, the process of science transfer can continue with the support of innovation and technological advances. Cardiac arrest can occur anytime and anywhere, including at home, in public facilities, and the workplace. The incidence of cardiac arrest at work increases over time. Through this community, service activity developed the innovation application of Basic Life Support to educate non-health workers. This application contains seven types of educational videos: What is Cardiac Arrest?, Why Basic Life Support Is Important?, Basic Life Support Steps, External Cardiac Massage, Recognize Automated External Defibrillator, and Steps of using Automated External Defibrillator, and Recovery Position.

Keywords: Covid-19, Basic Life Support, Non-health care providers

INTRODUCTION

Cardiac arrest can occur anytime and anywhere, including at home, public facilities, and at work. Research shows cardiac arrest at work increases over time from 0.3% to 4.3% of the total out-of-hospital events.[1] Every worker, even if he does not have a medical background, is expected to be able to carry out first aid efforts. Knowledge and skills about first aid in patients with cardiac arrest outside the hospital are essential to increase survival rates. In order for the goal to be achieved, the first aid must be done correctly.

The American Heart Association notes that less than 40% of patients with cardiac arrest receive basic life support (BLS) from bystanders who do not have a health education background. It is caused by a lack of public knowledge about cardiopulmonary resuscitation (CPR).[2,3] Research shows that the introduction of BLS to increase community knowledge and skills in performing hands-only CPR for bystanders has proven to be effective.[6]

The Coronavirus Disease 2019 (COVID-19) pandemic has forced us to make significant teaching and learning activities changes, including limiting face-to-face meetings. Nevertheless, the process of knowledge transfer can continue with the support of innovation and technological progress. A technology used is an application that can be downloaded and opened anytime and

anywhere. Bobrow has carried out the use of technology to educate people about BLS in 2010. Bobrow used a short video about BLS for a common person. This technique has been proven to increase the knowledge and skills of the people who watch the video.[4]

In 2010 and 2018, other studies were conducted by providing BLS training to health workers through an android-based application. These studies also found an increase in the ability of health workers to conduct BLS in emergency simulations. We can conclude that the application learning method affected a person's ability. However, the studies were conducted on the health sector population, not the general public.[5,6]

Therefore, considering the existing pandemic conditions, it is necessary to use educational technology in the form of bystanders' basic life support application to increase general knowledge about BLS for patients with cardiac arrest outside the hospital.

METHODS

An innovative application for Basic Life Support has been developed to educate non-health workers. This application contains seven types of educational videos, including What is Cardiac Arrest?, Why is Basic Life Support Important?, Basic Life Support Steps, External Cardiac Compression, Get to Know the Automatic Cardiac Shock Device, Steps to Use an Automatic Cardiac Shock Device, and Recovery Position.

DISCUSSION

Heart disease is the number one cause of death globally and responsible for 17.9 million deaths annually. Data from the World Health Organization (WHO) in 2015 stated that 45% of the total deaths from non-communicable diseases were caused by heart and blood vessel disease.[7] One of the biggest causes of death from heart disease is sudden cardiac arrest. In the United States, the AHA annually assesses more than 350,000 cases of out-of-hospital cardiac arrest or Out-Of Hospital Cardiac Arrest (OHCA) and 90% of deaths.[8] Based on the 2018 Riset Kesehatan Dasar (RISKERDAS), the prevalence of heart disease in Indonesia diagnosed by doctors is 1.5%.[9] Cardiac arrest can occur anytime and anywhere. The AHA reports that 70% of OHCA events occur at home, and the rest occur in the workplace and public facilities. Research conducted in 2015 noted an increase in cases of cardiac arrest at work (0.3% to 4.3% of the total incidence of OHCA).[1,8]

Basic Life Support (BLS) is a systematic emergency oxygenation resuscitation. BLS is performed on patients who experience sudden cardiac and respiratory arrest caused by various conditions, such as drowning, electric shocks, burns victims, heart attacks, and other emergencies.[10] In patients with cardiac arrest who do not receive treatment in the initial 5 minutes, brain damage can occur. For this reason, patients with cardiac arrest should get BLS as soon as possible. Basic cardiac life support is best performed within the first 5 minutes when the patient is unconscious. Usually, emergency medical services take more than 5 minutes to arrive at the scene after a call for help is made, so to maintain a high success rate, basic cardiac life support measures are essential to be carried out by the people around the patient.[11]

Based on the 2020 basic life support guidelines, the AHA recommends the importance of early initiation of cardiopulmonary resuscitation by bystanders. A common person can use one method when finding an adult cardiac arrest victim: Hands-Only CPR. This method only needs the bystanders to perform chest compressions using two hands. The AHA published this method in 2009. Hands-Only CPR consists of two steps: contacting emergency services and performing compressions on the patient's mid-chest area without providing breaths rescue.[8] Chest compressions focus on High-quality CPR and are carried out until paramedics arrive.

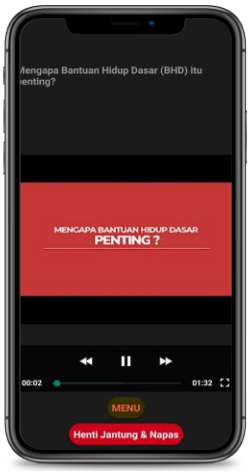
Two simple ways can make it easier for a common person to remember and understand in doing help to cardiac arrest patients, especially outside the hospital. A study on chest compressions alone has been conducted by Kitamura, who reported that survivors with good neurological outcomes after OHCA and receiving conventional CPR were as effective as patients receiving chest compressions alone compared to patients who did not receive CPR at all.[12] In Sweden, Research on CPR in OHCA patients also found that patients with ventricular fibrillation or ventricular tachycardia, apnea, and patients who received CPR only 4 minutes after unconsciousness, have a high survival rate.[13]

Health education is an activity to increase knowledge and abilities to change healthy lives in individuals, groups, and communities by providing learning or instruction. Counseling can be done with two-way communication where the communicant is allowed to provide feedback to the communicator (educator) on the material provided. The success of educators if we find similarity understanding what is conveyed by the communicator and accepted by the communicant. The material presented must emphasize that the material is essential for both parties (communicators and communicants) so that there is a match between interests and motivations in triggering changes in behavior, especially knowledge and attitudes.[14]

Several studies state that media or teaching aids play an essential role in conveying the message. In this case, the media used is an android-based application. The use of the media during counseling increases the interest of the target of counseling, reaches a broader target, reduces barriers to language use, accelerates the acceptance of information by the target, and increases the target's interest in implementing the content of the message conveyed. [14.15]

The use of application media in BLS counseling called iResus has been carried out previously with 31 young doctors in 2010 and can improve the performance of young doctors in handling advanced basic life support. In Indonesia, in 2018, a similar study was conducted on public health center nurses, and there was an increase in respondents' knowledge and skills in conducting BLS.[5]

In this study, an android-based application called "Basic Life Assistance for Common Person" was used, which contained learning videos about BLS, packaged in an attractive, concise and adapted with people language to be attractive and easily understood by the common person in learning BLS. [6]



CONCLUSION

Related to the Covid-19 pandemic that limits direct learning, the use of technology in the form of applications can be an option in transferring knowledge that can be accessed anywhere and anytime, especially in the field of health, which is specifically in Basic Life Support.

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