

Original Research

The Effect of Basic Life Support Health Education to Improve Adolescent Knowledge Level

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ABSTRACT

Background: Cardiac arrest is the sudden loss of the heart's pumping function. According to American Heart Association (AHA) guidelines, approximately 350,000 adults in the United States experience a heart attack. The aim of this research is to determine the effect of basic health education on the level of knowledge of adolescents using video applications and simulation methods.

Methods: This research is a quantitative research with a quasi-experimental research design before and after tests without control. The research sample was taken using a general sampling technique, namely. 40 respondents. The Wilcoxon test was used to analyze data to determine the effect of basic health education with video applications and simulation methods on the level of knowledge.

Result: The pre-test results of providing basic health education through video applications and simulation methods were mostly in the poor category, namely not good. 24 respondents (60%). The increase in post test data points after initial training with video applications and simulation methods was good for 40 respondents (100%). The results of the Wilcoxon test analysis show a P value of (0.000)..

Conclusion: It can be concluded that there is an influence of basic life support health education with video applications and simulation methods on adolescent knowledge level

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INTRODUCTION

According to the World Health Organization (WHO, 2020), prevalence results show that more than 17.9 million people died worldwide, with an increase in the incidence of heart attacks by 200,000 between 2015 and 2020, according to WHO. According to the American Heart Association (AHA) guidelines, approximately 350,000 adults in the United States experience out-of-hospital non-traumatic cardiac arrest (OHCA) and are treated by emergency medical personnel (EMS). Despite recent progress, less than 40% of adults receive CPR initiated by lay workers (AHA, 2020).

The prevalence of heart disease in Indonesia in 2018 was 1.5%, grouped by characteristics, 1.6% in urban areas, and 1.3% in rural areas. In the state of Central Java, the prevalence of heart disease was 1.56% in men, 1.27% by sex, and 1.83% in women (Risksedas, 2018). Based on preliminary research conducted in Gondang Village on December 13, 2021, when interviewed by the local RW Head, 10 cases of heart attacks were found in the last 5 months, namely 10 cases of heart attacks. August-December. Cardiac arrest can happen anywhere and anytime. The golden time for heart patients is less than 10 minutes, meaning that in less than 10 minutes the victim of cardiac arrest should have received BHD (Ghifari et al., 2019).

High-quality resuscitation measures are the foundation of early treatment of heart attacks before defibrillation and advanced life support, which if applied correctly will improve patient survival (Pettersen et al., 2019). First aid is not only intended for health workers, first aid must be understood by all groups or everyone, one of which is the general public, especially teenagers. The general public, especially teenagers in the surrounding environment, are more likely to experience and enter crisis situations, so they are expected to provide BHD in the form of CPR, providing information on how to perform first aid correctly and quickly (Sentana, 2019). The high curiosity of teenagers makes it easy for teenagers to understand BHD in the form of CPR. Teenagers who are equipped with this knowledge and skills are expected to be able to help BHD in community life (Purba, 2019). CPR knowledge is considered an important factor in the survival of heart attack victims (Sentana, 2019).

Based on research (Febriana, 2019), most students' CPR knowledge was sufficient before training, even 16 respondents (66.7%), 6 respondents (25%) had insufficient knowledge, while only 2 (8.3%) students had knowledge. Based on the results of the study (Fatmawati et al., 2019) which showed that the average knowledge of respondents before training was 4.87 ± 2.129 and after training the average increased to 7.33 ± 2.090 , it can be concluded that BHD training is audiovisual. media. affects the level of knowledge.

Based on a preliminary survey conducted on December 13, 2021 in Gondang Village which was interviewed by 9 teenagers, asking a series of questions about the meaning of a heart attack, signs of a heart attack and what to do if a heart attack occurs. . The results of the interview obtained 2 teenagers, 4 people stated that they knew the concept of CPR from the Young Red Cross (PMR) organization at their school, 2 teenagers stated that they only knew a little about heart attacks through television shows, and 5 other teenagers said.. they do not know the concept of a heart attack or CPR. Efforts to increase BHD knowledge in the form of CPR to the general public, especially teenagers, through a health education approach using video applications and simulation methods. Video applications are a means to deepen the level of knowledge, which can be used repeatedly in learning, and simulation methods can be used to

describe the actual state of an event or a simplification of a phenomenon in the real world.

The purpose of this study was to determine the effect of Basic Life Support (BLS) Health Education with video applications and simulation methods on the level of knowledge of adolescents in Gondang village.

MATERIALS AND METHOD

This research was carried out at the Posyandu in Gondang village RW 01 on June 28-July 2 2022. The research design used by researchers was a Quasi Experiment with Pre and Post Test Without Control. The research sample was 40 respondents and no one dropped out. Basic life support Health Education with video applications and simulation methods is the independent variable and skills are the dependent variable.

Researchers used a skills questionnaire sheet, the assessment categories were categorized into 3, namely skilled (score 90-100), sufficient (score 61-89), and poor (score <60). Total sampling as a data collection technique for this research, is accompanied by inclusion criteria, namely respondents aged 10-19 years, physically and mentally healthy, not experiencing physical disabilities and exclusion criteria namely age less than 10 years or more than 19 years, respondents who are sick. A questionnaire sheet in the form of a checklist tool for BHD actions according to AHA 2020 recommendations (Hands Only CPR) was used during assessment and data collection. The observation sheet has been tested for validity with the results of r table > r calculation: 0.489-0.661. and reliability with Chronbach's alpha value > r : 0.635.

Researchers used the Wilcoxon test to analyze the effect of health education with video applications and simulation methods on adolescent skills. This research was conducted at the Posyandu of Gondang Village RW 01 on June 28-July 2, 2022. The research design used by the researcher was a Quasi Experiment with Pre and Post Test Without Control. The research sample was 40 respondents and none of them dropped out. Basic life support health education with video applications and simulation methods is the independent variable and the level of knowledge is the dependent variable.

The researcher used a knowledge level questionnaire sheet, the assessment categories were categorized into 3, namely good (value > 70%), sufficient (value 60-70%), and less (r count value: 0.403-0.939. and reliability with Chronbach's alpha value > r : 0.946

The researcher used the Wilcoxon test to analyze the effect of health education with video applications and simulation methods on the level of knowledge of adolescents.

RESULTS

The results obtained from this research are:

Table 1. Characteristics of Respondents Based on Gender

Gender	Frequency	Percentage
Male	27	67,5%
Female	13	32,5%
Total	40	100%

Based on Table 1, the results show that the majority of respondents were male, 27 respondents (67.5%).

Table 2. Characteristics of Respondents Based on Education

Education	Frequency (f)	Percentage (%)
SD/MI	20	50 %
SMP/MTs	17	42.5 %
SMA/k	3	7.5 %
Total	40	100 %

Based on table 2, the research results show that the majority of respondents' education is elementary school/MI with 20 respondents (50%).

Table 3. Characteristics of Respondents Based on Information Source

Information Source	Frequency (f)	Percentage (%)
Internet	5	12.5
Relatives/ family/ friends	2	5
Print media	2	5
Electronic media	5	12.5
Health workers	6	15
Never	20	50
Total	40	100

Based on table 3, it shows that the research results showed that most of the respondents' sources of information about BHD had never received information about BHD, 20 respondents (50%).

Table 4. Respondents' Level of Knowledge Before Health Education Using Video Applications and Simulation Methods

Knowledge Level	Frequency (f)	Percentage (%)
Good	0	0%
Enough	16	40%
Less	24	60%
Total	40	100%

Based on table 4, the results of the study showed that the level of knowledge of respondents before being given health education with video applications and simulation methods was sufficient for 16 respondents (40%) and lacking for 24 respondents (60%).

Table 5. Respondents' Level of Knowledge After Health Education Using Video Applications and Simulation Methods

Knowledge Level	Frequency (f)	Percentage (%)
Good	40	100%
Enough	0	0%
Less	0	0%
Total	40	100%

Based on table 5 the result of the study showed that after being given health education with video applications and simulation methods was good as many as 40 respondents (100%).

Table 6. Analysis of the Effect of Health Education Using Video Applications and Simulation Methods on Adolescent Level of Knowledge in Gondang Village

	Median(minimum-maksimum)	P-value
<i>Pre test</i>	3 (2-3)	0,000
<i>Post test</i>	1 (1)	

Based on table 6, the results of the Wilcoxon test show that the P value is 0.000. This means that the p value <0.05 so that Ho is rejected, which means that there is an

effect of health education with video applications and simulation methods on the level of knowledge of adolescents in Gondang village.

DISCUSSION

Based on Table 1, the results show that the majority of respondents were male, 27 respondents (67.5%). In line with research (Febriana, 2019) that the majority of respondents were male, 18 respondents (75%). Supported by research (Purwana & Erdian, 2019) which states that the largest number of respondents was male, 13 respondents (62%). Another research conducted by (Rifai & Ilyas, 2019) stated that the majority of respondents were men, 30 respondents (60%).

Every man and woman has the same level of knowledge because access to receive knowledge or education is not only a priority for men but has the same priority for both women and men, so if the information and knowledge obtained are good, the level of knowledge will be relatively the same (Pitriani et al., 2020). According to the researcher's assumption, men and women can have the same level of knowledge because access to receive knowledge or education is not only a priority for men but has the same priority for both women and men, so it can be concluded that there is no influence of gender on the level of knowledge.

Based on table 2, the research results show that the majority of respondents' education is elementary school/MI with 20 respondents (50%). This is in line with research (Salsabila et al., 2021) showing that the majority of those involved in the research had primary school/MI education as many as 16 respondents (69.6%) supported by research (Asih et al., 2021) stating that the majority 120 respondents (58.3%) of the respondents in the study had primary school education. Another research by (Hidayati, 2020) stated that the majority of respondents' education was elementary school with 135 respondents (54%).

According to the assumption of researchers, a person's education greatly influences the level of knowledge. The higher it will affect the mindset, behavior and knowledge so that with higher education one can adapt to improve one's health or the surrounding environment with the knowledge possessed.

Based on table 3, it shows that the research results showed that most of the respondents' sources of information about BHD had never received information about BHD, 20 respondents (50%). In line with research (Salsabila et al., 2021), 23 respondents (100%) stated that research respondents had not received basic life support information. Supported by research, it is stated that research respondents had never received basic life support information, namely 24 respondents (100%). Another study stated that 77 respondents (96.2%) had not received information.

Sources of information are factors that influence the level of knowledge. A person who has more sources of information will have broader knowledge (Notoatmodjo, 2018). Sources of information are everything that a person uses to find out about new things and have characteristics that can be seen, read, studied, reviewed, analyzed, utilized, and developed in educational activities, research, and transformed to others (Santikasari & Laksmi, 2019). According to the researcher's assumption, sources of information about basic life support are factors that are the reason someone gets good knowledge in carrying out basic life support. The sources of information provided in this study are in the form of video applications containing theories and stages in carrying out BLS and also simulation methods that can describe the actual

situation so that respondents can receive new sources of information that can increase knowledge.

Based on table 4, the results of the study showed that the level of knowledge of respondents before being given health education with video applications and simulation methods was sufficient for 16 respondents (40%) and lacking for 24 respondents (60%). The results of this study are in line with research (Pertiwi et al., 2021) showing that the level of knowledge before being given a smartphone application was lacking for 55 respondents (69.6%) and sufficient for 13 people (30.4%) supported by research (Nurjanah & Suparti, 2022) stating that knowledge before education was lacking for 21 respondents (66.7%) and sufficient for 10 respondents (33.3%). Another study by (Salsabila et al., 2021) stated that knowledge before education was lacking for 20 respondents (86.9%) and sufficient for 3 respondents (13.1%).

According to the researcher's assumption, the lack of knowledge is influenced by the source of information and the respondent's experience in providing basic life support for cardiac arrest victims so that respondents do not yet have knowledge when faced with problems and do not know the steps in providing basic life support. Sources of information are an important point for people to gain experience.

Based on table 5 the result of the study showed that after being given health education with video applications and simulation methods was good as many as 40 respondents (100%) this is in line with research (Darwati & Setianingsih, 2020) showing that the level of knowledge after being given a video application was good as many as 179 respondents (86.5%) supported by research (Djamaludin et al., 2021) showing that the level of knowledge after being given a simulation was good as many as 15 respondents (100%). Another study by (Mongkau, 2019) on the effect of basic life support training for the general public on the level of knowledge and skills stated that the level of knowledge after being given training was good 25 respondents (83%). Knowledge is a result of curiosity through sensory processes, especially in the eyes and ears towards certain objects. Knowledge is also the most important domain in the formation of behavior (Donsu, 2019). A person's knowledge is influenced by several factors, including education level, occupation, age, environmental factors and socio-cultural factors (Notoatmodjo, 2019)

According to the researcher's assumption in the research results after health education was carried out with video applications and simulation methods, the level of knowledge increased influenced by the Health Education method provided by presenting video applications and descriptions of actual conditions such as real phenomena, so this increases knowledge because respondents can learn and play roles in the health education.

Based on table 6, the results of the Wilcoxon test show that the P value is 0.000. This means that the p value <0.05 so that H_0 is rejected, which means that there is an effect of health education with video applications and simulation methods on the level of knowledge of adolescents in Gondang village. in line with the results of the study (Sukoco et al., 2020) which explains that there is a difference between the value of knowledge about BHD before and after using the AndroLifes application supported by research (Badrah & Handiyani, 2020) stating that the use of simulation methods in learning has proven effective in nursing education.

Health education is an effort to translate what is known about health into the desired behavior of individuals or society through the education process (Widyawati, 2020). The video application is a means to deepen the level of knowledge where in

learning it can be used repeatedly (Ilsa et al., 2020). The simulation method can describe the actual state of an event or a simplification of a phenomenon in the real world (Purwana & Erdian, 2019).

Knowledge is a result of curiosity through sensory processes, especially in the eyes and ears towards certain objects. Knowledge is an important domain in the formation of open behavior (Donsu, 2019). Adolescence is one of the periods of human growth and development in life, adolescence is a transition period from childhood to adulthood. Adolescence is a period of rapid growth and development both physically, psychologically and intellectually (WHO, 2020)

According to the researcher's assumption from the explanation above, providing health education using video applications and simulation methods makes it easy for adolescents to understand, more interested and can directly try or demonstrate as if the incident really happened.

CONCLUSION

The results of the Wilcoxon test show that there is an influence of health education using video applications and simulation methods on the level of knowledge of teenagers in Gondang village.

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