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# The Effect of Health Education With Educational Video on Knowledge and Attitude of Community About Basic Life Support

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**ABSTRACT**

**Introduction:** Quick and appropriate help when met an unconscious person is important to providing Basic Life Support (BLS). Knowledge and Attitude about BLS are very important in order to provide quick assistance of cardiac arrest. The purpose of this study was to analyze the effect of providing health education with video on people's knowledge and Attitude about BLS.

**Methods:** The study used a quasy-experimental design by intervening in a group and then observed. This research was conducted on the community who became Kader in Perak, Surabaya. Total sample of 64 respondents obtained through total sampling technique. The independent variable is video-based health education. Dependent variable is knowledge and attitude about BLS. Data were collected using a questionnaire and analyzed by the Wilcoxon sign test and Mann whitney u test with a significance of $p < 0.05$.

**Results:** The results showed an increase in knowledge and Attitude in the intervention group after being given educational videos with ($p = 0.001$) and Attitude with ($p = 0.006$). The results of the test with Mann Whitney showed that there was an average difference between the intervention group and the control group with significant results in knowledge ($p=0.000$), attitude ($p=0.000$).

**Conclusion:** To improve people's knowledge about basic life support can be obtained from electronic media regarding knowledge about basic life support. It is hoped that it can provide knowledge of basic life support and can apply or assist in life-threatening emergencies in the home environment. It is hoped that the results of this research can be used as a reference for further research by adding other variables and before the research, researchers are expected to prepare research instruments according to the standards of the instruments that will be used, such as: phantom CPR according to standards.

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## 1. INTRODUCTION

Basic life support (BLS) is an emergency action taken to free the airway and maintain blood circulation without the use of assistive devices for patients who experience cardiac arrest, respiratory arrest, or airway obstruction (American Heart Assosiation, 2020). In the United States and Canada, approximately 350,000 people die from cardiac arrest each year. Globally, about 70% of sudden cardiac arrest cases occur outside the hospital, leaving only about 10.8% of adult patients receiving resuscitation by a trained medical team (Wong et al., 2019). If there is a victim of cardiac arrest, the community should be able to provide first aid efforts until waiting for the medical team to arrive (Munot et al., 2022). However, in the field itself, the community only relies on medical assistance. This occurs due to several causative factors, including the community's lack of courage in performing first aid

and also the lack of knowledge in providing first aid to victims of cardiac arrest. The lack of community skills in providing BLS leads to a high risk of mortality or mortality of 7%-10%.(Moon et al., 2015; Bakri, Armaijin, & Husen, 2021).

In Indonesia, the provision of BLS education has not been implemented optimally because there are still many people who have a low level of knowledge, such as research from Hidayati, (2020), which states that 55.6% of people have a low level of knowledge about BLS. Currently, there is a lot of education carried out through social media platforms that provide education using videos, but the effectiveness of this method of learning BLS education through videos has not been widely studied (Febriana, 2018). The effect of low BLS knowledge will have an adverse impact on cases of sudden cardiac arrest (Spinelli et al., 2021). Cardiac Arrest is a condition of sudden loss of human heart function and is the number one cause of death in the world (Oktafiani & Fitriana, 2022). Sudden cardiac arrest is responsible for 60% of deaths in developed and developing countries, according to World Health Organization (WHO) data. According to an American Heart Association (AHA) survey, about 359,400 cases occur outside hospitals and only about 209,000 cases occur inside hospitals. The response rate for out-of-hospital cases was recorded at only 40%.(American Heart Assosiation, 2020). In Indonesia alone every year more than 36 million people die from Non-Communicable Diseases (NCDs) (63% of all deaths) of which 75% are caused by heart failure. In East Java alone, heart attack cases due to coronary heart disease are estimated to reach 1.3% or equivalent to 375,127 people while heart failure cases alone are 54,826 people (0.19%).(Kemenkes RI, 2014).

Cardiac arrest can occur due to dysfunction of the electrical system in the heart, triggering arrhythmia. If an arrhythmia occurs, it will directly cause circulatory arrest (Onan et al., 2017; Siahaan, 2021). This stoppage of circulation will quickly deprive the brain and vital organs of oxygen. Cardiac arrest can be saved by applying CPR (Cardiopulmonary resuscitation) and defibrillation which is used to shock the heart and restore normal heart rhythm within a few minutes. CPR efforts must be given quickly and precisely because basically the human brain will only last 3-4 minutes after the heart stops. If more than that time then the impact that will occur is death. (Ganthikumar, 2016; Mariah, 2016).

After finding the problem as described above, to reduce the morbidity and mortality rate of sudden cardiac arrest incidents, it is one of the health cases that is very serious to pay attention to, one of which is to carry out high quality CPR with the effectiveness of providing Basic Life Support (BLS) health promotion. In this case, the health promotion needed in BLS education must be time efficient, effective, right on target in the wider community, and minimize the potential lack of health resources, for example through educational video media (Gide, 2016; Batubara & Ariani, 2016). The effect of providing education through this video media on the knowledge and Attitude of the community in implementing BLS can be measured using the precede-proceed theory approach developed by Lawrence Green (Nursalam, 2020). The purpose of this study was to analyze the effect of providing health education with video on people's knowledge and Attitude about BLS.

## 2. METHODS

### Study Design

The research design was a Quasy experimental design to analyze the effect of providing health education with video on people's knowledge and Attitude about BLS.

### Population, Samples, and Sampling

The study population was the community who became Hebat cadres in Perak Barat Village with a sample size of 64 respondents. Sample selection using total sampling with inclusion criteria: Great cadres who live in the western Perak village of Surabaya City, have never attended BLS training, are over 18 years old, and have a minimum education of high school and equivalent. Exclusion criteria: People with mental and physical disabilities.

### Instruments

The instruments used in this study were a questionnaire of family support and World Health Organization Quality of Life – BREF (WHOQOL – BREF). The questionnaire used in the Likert scale with a value range of 1 to 4 with two variations of items, namely favorable and unfavorable

### Procedure

Data collection techniques were carried out with two research instruments, namely videos and questionnaires. The educational video in this study was a video from the East Java Emergency and Disaster Nurses Association (HIPGABI). This research has received approval from the Research Ethics Commission of the Faculty of Dentistry, Airlangga University, on July 20 2022 with number 469/-HRECC.FODM/VII/2022

### Data Analysis

The data obtained were then analyzed using the Wilcoxon sign rank test and Mann whitney test with a significance value of 0.05.

## 3. RESULTS

Table 1. Demographic data distribution of research respondents

| Characteristic | Group | | | |
|---|---|---|---|---|
| | Control | | Intervention | |
| | f | % | f | % |
| **Sex** | | | | |
| Woman | 32 | 100 | 32 | 100 |
| Man | 0 | 0 | 0 | 0 |

| Charac teristic | Group | | | |
|---|---|---|---|---|
| | Control | | Intervention | |
| | f | % | f | % |
| **Ages** | | | | |
| 26-35 | 3 | 9,4 | 3 | 9,4 |
| 36-45 | 8 | 25,0 | 9 | 28,1 |
| 46-55 | 12 | 37,5 | 12 | 37,5 |
| 56-65 | 9 | 28,1 | 8 | 25,0 |
| **Education** | | | | |
| High School | 23 | 71,9 | 19 | 59,4 |
| Diploma | 5 | 15,6 | 7 | 21,9 |
| Bachelor | 4 | 12,5 | 6 | 18,8 |

Table 1 shows the demographic data characteristics of respondents, it is known that respondents in this study were dominated by women, totaling 64 people (100%) and the age distribution of respondents was mostly in the age range of 46-55 years, as many as 24 people. respondents were mostly in the age range of 46-55 years, as many as 24 people. In terms of education, most respondents came from high school graduates 42 people.

Table 2. Distribution of knowledge of the community of Kader Hebat Perak Barat

| Knowledge Level | Intervention Group | | | | Control Group | | | |
|---|---|---|---|---|---|---|---|---|
| | *Pre test* | | *Posttest* | | *Pre test* | | *Posttest* | |
| | f | % | f | % | f | % | f | % |
| Good | 14 | 43,8 | 19 | 59,4 | 2 | 6,3 | 1 | 3,1 |
| Enough | 9 | 28,1 | 8 | 25,0 | 9 | 28,1 | 8 | 25 |
| Less | 9 | 28,1 | 5 | 15,6 | 21 | 65,6 | 23 | 71,9 |
| **Total** | 32 | 100 | 32 | 100 | 32 | 100 | 32 | 100 |
| *Wilcoxon Signed Rank Test* | | | p = 0.001 | | p = 0.046 | | | |
| *Mann Whitney U Test (Post Test)* | | | p = 0.000 | | | | | |

Table 2 shows that in the intervention group of 32 respondents pre-test knowledge before being given basic life support video intervention, almost half of the respondents obtained predominantly good results as many as 14 respondents (43.8%). Whereas the control group shows that of the 32 respondents pre-test knowledge without being given basic life support video intervention, most of the respondents get results that are less as many as 21 respondents (65.6%). After being given a basic life support educational video intervention in the intervention group of 32 respondents, the post-test knowledge obtained the results of most of the dominant respondents, namely good as many as 19 respondents (59.4%). Meanwhile, the control group showed that of the 32 respondents, the post-test knowledge without being given a basic life support educational video intervention, most of the respondents got the results, namely less as many as 23 respondents (71.9%).

The results of statistical tests using the Wilcoxon Signed Ranks Test showed a value of (p)=0.001 (α<0.05) which means there is a difference in the level of knowledge between the pre-test and post-test in the intervention group after the intervention. While the statistical test results in the control group showed a value of (p)=0.046 (α<0.05) which means that there is a significant difference in the level of knowledge between the pre-test and post-test results. The results of the Mann Whitney U Test showed that the difference in the results of post-test data on knowledge in the treatment and control groups was (p)=0.000 which means that (α<0.05), so it can be concluded that there is a significant difference after the intervention.

Table 3. Distribution of knowledge of the Kader Hebat Perak Barat

| Attitude | Intervension Group | | | | Control Group | | | |
|---|---|---|---|---|---|---|---|---|
| | *Pre test* | | *Posttest* | | *Pre test* | | *Posttest* | |
| | f | % | f | % | f | % | f | % |
| Positive | 32 | 100 | 32 | 100 | 18 | 56,3 | 16 | 50 |
| Negative | 0 | 0 | 0 | 0 | 14 | 43,8 | 16 | 50 |
| **Total** | 32 | 100 | 32 | 100 | 32 | 100 | 32 | 100 |
| *Wilcoxon Signed Rank Test* | | | p = 0.006 | | p = 0.034 | | | |
| *Mann Whitney U Test (Post Test)* | | | P = 0.000 | | | | | |

Table 3 shows that the intervention group is positive. Whereas in the control group, it shows that of the 32 respondents, the pre-test attitude without being given a basic life support educational video intervention, most of the respondents got positive results as many as 18 respondents (56.3%). After being given a basic life support educational video intervention in the intervention group of 32 respondents, the attitude post test was obtained, the results of all respondents had a positive attitude as many as 32 respondents (100%). Meanwhile, the control group showed that of the 32 respondents, the attitude post test without being given a basic life support educational video intervention, half of the respondents obtained the results of 16 positive respondents (50%) and 16 negative respondents (50%).

The results of statistical tests using the Wilcoxon signed rank test in the intervention group showed that p = 0.006 (α <0.05), meaning that there was a significant difference in attitude between the pre-test and post-test results in the intervention group after being given the intervention. The statistical test results in the control group showed that there was no difference in the average attitude of respondents during the pre-test and post-test, namely p=0.0034 (α<0.05). So the Mann Whitney u test shows p=0.000 there is a significant difference in the attitude of

respondents between the intervention group and the control group.

Table 4 shows that the number of subjects in this study were 32 respondents for the control group and intervention group. In the knowledge variable during the pretest in the control group, the lowest score was 29 and the highest score was 86 with a mean score of 57. The mean or average is obtained by dividing the total score by the number of subjects. While in the intervention group the lowest knowledge score was 29, the highest score was 93 and the mean score was 64. Then at the time of the posttest for the knowledge variable, the lowest score, highest score and mean of the control group were 29, 79, and 53, while in the intervention group they were 43, 100, and 80.

Table 4. Descriptive Analysis Knowledge and Attitudes

| Group | Variabel | N | *Min* | *Max* | *Mean* | Std |
|---|---|---|---|---|---|---|
| **Control** | **Knowledge** | | | | | |
| | *Pretest* | 32 | 29 | 86 | 57 | 12.056 |
| | *Posttest* | 32 | 29 | 79 | 53 | 12.638 |
| | **Attitude** | | | | | |
| | *Pretest* | 32 | 16 | 33 | 25 | 4.149 |
| | *Posttest* | 32 | 18 | 33 | 25 | 4.250 |
| **Intervention** | **Knowledge** | | | | | |
| | *Pretest* | 32 | 29 | 93 | 64 | 17.638 |
| | *Posttest* | 32 | 43 | 100 | 80 | 16.161 |
| | **Attitude** | | | | | |
| | *Pretest* | 32 | 26 | 44 | 36 | 3.914 |
| | *Posttest* | 32 | 31 | 47 | 39 | 4.892 |

The results of the study on attitude variables when the pretest showed that the lowest scores of the control group and the intervention group were 16 and 26, respectively. The highest scores in the control and intervention groups were 33 and 44, respectively, with an average score of 25 in the control group and 36 in the intervention group. Then when the posttest shows the lowest scores of the control group and the intervention group are 18 and 31 respectively. The highest scores in the control and intervention groups are 33 and 47 respectively, with a mean of 25 in the control group and 39 in the intervention group. Based on the table above, it can also be seen the standard deviation value of the research variables in the pretest and posttest. Standard deviation or standard deviation is a value used in determining the distribution of data in a sample by looking at how close the data is to the mean value. The lower the standard deviation value, the closer to the average. Conversely, the higher the standard deviation value, the further away from the average value, which means that the data has a wide range and the data variation is spread

## 4. DISCUSSION

### The Effect of Providing Educational Videos in Improving Community Knowledge about Basic Life Supports

The provision of interventions with basic life support educational videos on knowledge in the intervention group showed a significant increase in pre-test and post-test results. The knowledge of all respondents in the intervention group cadres showed that almost all respondents experienced an increase in knowledge after being given the intervention. While in the control group the increase in knowledge was not as significant as the intervention group. The level of knowledge that increased in the intervention group and had a significant difference with the control group showed that H1 could be accepted, namely there was an influence on knowledge by using educational videos on basic life support. In the pretest conducted by the control group, some questions were wrong about the components of high quality CPR such as the depth of CPR, the duration of CPR, the right place to perform CPR, and what the first thing a helper does when finding a victim of cardiac arrest. In the pretest conducted by the intervention group, several questions were incorrect on the points of where CPR is performed, the right environment to perform CPR, and the first thing to do CPR.

This is in accordance with Green's theory (1991) in Tafonao (2018), which states that a person's attitude is influenced by three main factors, one of which is predisposing factors, predisposing factors are factors that exist within an individual which are manifested in knowledge, attitudes, skills / psychomotor, beliefs, and so on. Factors that can influence knowledge according to Notoatmodjo (2014) there were education, occupation, experience, beliefs, social and cultural. While reinforcing factors are reinforcing factors obtained by community leaders, teachers, health workers and power holders. In the intervention group, leaders tend to be active and obedient to policies determined by the RW chairman and several health service facilities are obtained with officers providing health education to local residents. Education is a factor that can increase accurate information that can increase a person's knowledge in basic life support. Knowledge is the result of knowing, and this occurs after a person senses a certain object (Tafonao, 2018). Knowledge is caused by information that provides knowledge to individuals or groups. Providing information through educational videos can affect a person's senses and make an increase in public knowledge related to basic life support (Ichsan et al., 2021). Through the simulation method, it can affect a person's interaction patterns, can provide important information about the relationship between concepts and processes that

require broader explanation and understanding. Through this method one can provide an overview as an empirical knowledge-seeking process to investigate and research various phenomena in the context of real life (Akselbo & Aune, 2022). According to Nurjanah & Suparti (2022) showed that the knowledge of providing BLS education using audio-visual media increased. According to Prayitno, Puspitasari, and Setiawan (2020) shows that there is a significant difference between knowledge before and after being given basic life support education to members of the nursing student health team student activity unit.

From the description above, it was found that the results of research in the intervention group provided results in increasing knowledge in cadres. In the intervention group, it was found that all respondents experienced an increase in knowledge at post-test. Meanwhile, the control group did not show the results of increasing knowledge. However, some respondents experienced a decrease in knowledge after the post-test. Education is one of the factors that influence a person's knowledge. So it can be concluded that there is an effect of providing education with video methods in increasing cadres' knowledge of basic life support. Therefore, researchers argue that the community needs to be given educational videos that can increase cadre knowledge. Educational videos containing demonstrations provide experience and knowledge of a particular field. It is hoped that people who get educational videos about basic life support can increase knowledge and attitudes that can be applied properly.

**The Effect of Providing Educational Videos in Improving Community Attitudes About Basic Life Supports**

The provision of interventions with basic life support educational videos on attitudes in the intervention group showed a significant increase in attitude results in the pre-test and post-test results. The post-test results showed that all respondents had an increase in positive attitudes. Meanwhile, the control group experienced a decrease in the post-test. Respondents who had an increase in attitude in the intervention group and had a significant difference with the control group showed that H1 could be accepted, namely there was an influence on attitudes by using educational videos on basic life support. In line with Green's theory (1991) predisposing factors are factors that exist within an individual that are manifested in knowledge, attitudes, skills / psychomotor, beliefs, and so on. This change in attitude level is due to the provision of basic life support educational videos where there is information provision, where there is a learning process. Learning process according to Notoatmodjo (Soekidjo Notoatmodjo, 2018), can be interpreted as a process to increase knowledge, understanding and attitudes that can be obtained from experience or study (teaching and learning process). Knowledge, thoughts, beliefs, and emotions play an important role in determining attitudes on a matter. Respondents who refuse to be given information will have a negative attitude, while those who have a positive attitude are those who are able to accept existing information or stimulus (Siahaan, 2021). Research result according to Abelairas-Gómez et al., (2020) showed an increase in knowledge and attitudes about first aid and basic life support in elementary school teachers, pre-school teachers and parents.

From the description above, it is found that the results of research in the intervention group provide results in improving attitudes in cadres. In the intervention group, it was found that all respondents experienced an increase in attitude at post-test. Meanwhile, the control group did not show the results of an increase in attitude. However, some respondents experienced a decrease in attitude after the post-test. This can occur because respondents are not sure whether the answer is right or wrong, and it makes respondents look for other answers. Education is one of the factors that can influence a person's attitude. So it can be concluded that there is an effect of providing education with video methods in improving the attitude of cadres about basic life support. Therefore, researchers argue that the community needs to be given educational videos that can increase cadre knowledge. Educational videos that contain demonstrations provide experience and knowledge of a particular field. It is hoped that people who get educational videos about basic life support can increase knowledge and attitudes that can be applied properly.

## 5. CONCLUSION

This study shows that there is a significant increase in ability after basic life support training as first aid in cardiac arrest patients. To improve people's knowledge about basic life support, not only by training methods, but can be obtained from electronic media regarding knowledge about basic life support. It is hoped that it can provide knowledge and Attitude of basic life support for people who become cadres in the western silver village of Surabaya and can apply and assist in life-threatening emergencies in the home environment. It is hoped that the results of this research can be used as a reference for further research by adding other variables and before the research, researchers are expected to prepare research instruments according to the standards of the instruments that will be used, such as: phantom CPR according to standards.

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