EFFECTIVENESS OF AUDIOVISUAL-BASED TRAINING ON BASIC LIFE SUPPORT KNOWLEDGE OF STUDENTS IN BENGKULU

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ABSTRACT

Background: Emergencies can occur around us. Basic knowledge about saving lives is needed to reduce the death rate. Basic Life Support (BHD) is an emergency treatment effort for cardiac arrest done by everyone, including students. This study aimed to determine the effect of audiovisual-based training on Nursing Students Basic Life Support (BHD) knowledge in Bengkulu City.
Subject and Method: This was a quasi-experiment study with no control group. The study was conducted at school of science Tri Mandiri Sakti, Bengkulu, Indonesia. A sample of 64 nursing students was selected by total sampling. The intervention group was carried out by viewing the BHD simulation video via the LCD. Knowledge was measured by questionnaire. Knowledge level before and after treatment were tested by t-test.
Result: Mean score of knowledge after training basic life support (Mean = 74.53; SD = 13.444; 95% CI = 27.502) was higher than before training (Mean = 50.47; SD = 11,468; 95% CI = 20,623), and it was statistically significant (p< 0.001).
Conclusion: Audiovisual-based training is effective in improving knowledge of students about basic life support.

Keywords: audio visual, basic life support, knowledge.

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BACKGROUND

The worlds primary health problem is heart disease because it accounts for the highest mortality rate globally (Rahmawati et al., 2020). Heart disease often causes sudden death. Due to cardiac arrest in developed and developing countries, sudden death still shows a high percentage, and it is recorded that more than 90% occur outside the hospital or often called out of hospital cardiac arrest (OHCA) (Navarro-Patón et al., 2018).

Each year, about 300,000 people in the United States have a heart attack outside of a hospital. Cardiac arrest is the heart inability to maintain its function in providing blood circulation and oxygen supply to the brain and other tissues (Januarista, 2019). OHCA is defined as a cessation of cardiac mechanical activity outside the hospital setting and is confirmed by the absence of signs of circulation. The majority of people who experience an OHCA event, regardless of etiology, do not receive observer-assisted cardiopulmonary resuscitation or other timely intervention known to increase survival chances (McNally et al., 2011).

First aid in cases of cardiac arrest is necessary to save the soul. The presence of trained rescuers is a significant determinant of survival from a life-threatening

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emergency (Pande et al., 2014). The success of providing assistance aimed at restoring heart function is highly dependent on the speed of the initial assessment and the quality of BHD (Pratiwi and Purwanto, 2016). BHD is an action that aims to restore respiratory, circulatory, and other circulatory functions to run normally and optimally (Putri and Sidemen, 2017)

Everyone has the opportunity to assist in cardiac arrest, both health workers and laypeople, specifically including health students such as nursing. Health students who have been trained with BHD have confidence in teaching skills to their family members; this shows that students can do BHD independently (Pande et al., 2014). Young people such as students can become helpers who have special skills and knowledge supported by basic life support training.

A helper who is competent and has good knowledge will help increase the chances of surviving the victim (Pratiwi et al., 2016). Experience is the result of human sensing or knowing someone about an object through the senses they have (eyes, nose, ears, etc.) (Notoadmojo, 2014). Research conducted by Suranadi (2017) shows that BHD training can increase student knowledge.

Another study from three countries, namely Poland, Lithuania, and Spain, revealed that most of the nursing students who participated in the survey obtained an average result regarding theoretical knowledge and good practice regarding BHD with an SD score of ± 2.29 (Kwiecień-Jaguś et al., 2020). The purpose of this study was to determine the knowledge of nursing students before and after BHD training based on audio-visual.

SUBJECT AND METHOD

1. Study Design

This was a quasi-experiment study with no control group was conducted at STIKES Tri Mandiri Sakti Bengkulu in July 2020.

2. Population and sample

This study population was all nursing students of STIKES Tri Mandiri Sakti Bengkulu in the second semester.

The sampling technique used was total sampling, in which the entire population was sampled as many as 64 people. Students were divided into 8 groups in 2 days of research. One day consists of 4 groups, and each group consists of 8 people in one room.

3. Stages of intervention

The study continues to use safe protocols to avoid Covid-19 by researchers and respondents using face shields, masks, maintaining a minimum distance of 1 meter, washing hands, and using hand sanitizers before and after treatment. The procedure is carried out by viewing the BHD simulation video via the LCD. The tools used are BHD video, LCD, laptop, mini speaker, cardiac, pulmonary resuscitation phantom (RJP), and supporting consumables (BHP).

The research begins by providing a knowledge questionnaire before the intervention. After filling out the questionnaire, the researcher gave an intervention in the form of an audio-visual presentation of the training material, namely watching a video recording containing the researcher performing the BHD procedure. The video is played for 6 minutes 10 seconds. After the video presentation is complete, the respondents knowledge is measured again.

4. Data analysis

The data scale used is a ratio with a score of 0-10. The data that has been collected is then analyzed using univariate and bivariate analysis. Univariate analysis is used to see

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the characteristics of respondents such as test, gender. Bivariate analysis was used to determine the effect of audio-visual on student knowledge.

The data normality test used the Kolmogorov-Smirnov test because the sample was> 50 people. The normality test results showed that the pre-test sig = 0.086> 0.05 and the post-test sig = 0.123> 0.05, which means that the two groups usually are distributed so that the statistical test uses a paired sample t-test.

5. Research ethics

This research has received permission from the Ethics Commission of the Poltekes Kemenkes Bengkulu on June 5, 2020, with number No.KEPK / 062/06/2020.

RESULT

1. Characteristics of respondents

Characteristics of respondents based on age in Table 1 shows that most of the respondents are 18-20 years old (60%) because they are currently taking the second academic semester. Based on gender, most of the respondents were women (90.62%).

2. The Bivariate Analysis

In table 2 show that respondents average knowledge before getting training is 50.47 with a standard deviation of 11,468. After being given basic life support training, the average respondent ability is 74.53, with a standard deviation of 13,444. The results of a bivariate analysis using the paired sample t-test resulted in a mean difference of -24.063 and a p-value of 0.000 (p <0.05) (table 2). These results can be concluded that there is a significant influence between audiovisual-based training on nursing students BHD knowledge.

Table 1. Frequency distribution characteristics

Characteristics	Frequency (n)	Percentage (%)
Age		
18-20 years	60	93.75
21-23 years	4	6.25
Gender		
Male	6	9.37
Female	58	90, 63

Table 2 Effect of audio-visual training to the knowledge-based Nursing Student BHD STIKES Tri Sakti Mandiri Bengkulu

Group	Mean	SD	Mean Difference	95% CI		p
				Lower	Upper	
Knowledge before	50.47	11 468	-24 063	-27	-20	<0.001
Knowledge after	74.53	13,444		502	623	

DISCUSSION

The results show that there are significant differences in knowledge before and after audiovisual training, and the knowledge score after the test is more significant than the score before the test. These results indicate that the knowledge questionnaire is composed of 4 indicators: the symptoms and signs of a heart attack, emergency situations, the response to vital signs by checking pulse and breathing, and a BHD technical examination according to the 2015

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AHA standard (Yunanto et al., 2017). According to AHA 2015, interviewees were still unable to answer the appropriate BHD technical indicators before the intervention. After audiovisual-based training, the average score of the questions answered by respondents was 74.53 (SD = 13.44).

This study results are in line with Pande et al. (2014) who examined the first level students knowledge about BHD training. The training program provided good basic knowledge and skills about BHD with an average post-test score (2.81). Similar to Abbas, Bukhari, and Ahmad (2011) conducted a study of first aid and BHD in health students, it was found that the correct responses by trained students were significantly better than untrained students regarding BLD with an average score of 6.13 (SD ± 2.1).

Audio-visual based learning methods influence increasing student knowledge. This can be explained because the technology, which consists of audio, images, and motion, will provide a faster brain stimulus and provide an audio imaginary pad effect. This effect affects the ability to increase long-term memory in the brain so that people who see it will be easy to learn and memorize (Delazer et al., 2003). In line with research (Krasteva, Jekova, and Didon, 2011) regarding feedback on audio-visuals on BLS ability in ordinary people, it shows that feedback using audio-visuals is proven to be understandable and easy to follow and implemented by ordinary people.

According to Purnomo (2014), audio-visual media is a way of producing or delivering material by using mechanical and electronic machines to present audio and visual messages. In comparison, knowledge is awareness and understanding of certain aspects of reality (Agarwal, 2017). Health education is an effort to increase student knowledge, so an exciting method is needed to convey the message. The technique required, such as audio-visual, is to provide moving images and explain sound related to images that can attract the target's attention (Septiana, 2017). This study uses audio-visual as a learning technique to increase student knowledge.

This study's limitation is that the subject used is only nursing students, and the dependent variable that is measured is only one, namely knowledge. Further research can develop research by adding research subjects other than nursing students, and other variables can be added, such as skills. The significance of this research is to develop nursing science, especially in emergency situations, because BHD training for nursing students can increase the number of trained bystanders, thus making them hopeful to provide rapid and accurate treatment for cardiac arrest patients in hospitals help.

This study can be concluded that the majority of respondents are female and overall take the second semester. The results showed that the audio-visual based training method significantly affected knowledge with an average after treatment of 74.53 (SD13.44). This study limitation is that the sample size is small, so that it is not sufficient to generalize all students at the STIKES Tri Mandiri Sakti Bengkulu campus.

CONFLICT OF INTEREST

There is no conflict of interest in this research

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