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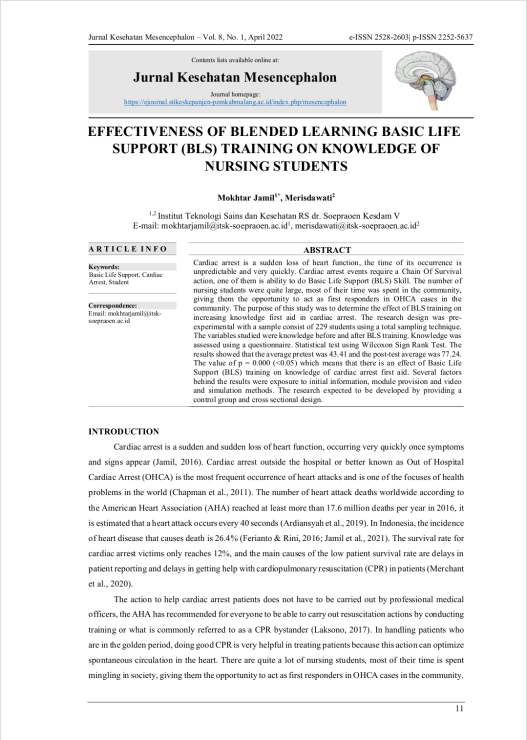

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EFFECTIVENESS OF BLENDED LEARNING BASIC LIFE SUPPORT (BLS) TRAINING ON KNOWLEDGE OF NURSING STUDENTS

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ABSTRACT

Cardiac arrest is a sudden loss of heart function, the time of its occurrence is unpredictable and very quickly. Cardiac arrest events require a Chain Of Survival action, one of them is ability to do Basic Life Support (BLS) Skill. The number of nursing students were quite large, most of their time was spent in the community, giving them the opportunity to act as first responders in OHCA cases in the community. The purpose of this study was to determine the effect of BLS training on increasing knowledge first aid in cardiac arrest. The research design was pre-experimental with a sample consist of 229 students using a total sampling technique. The variables studied were knowledge before and after BLS training. Knowledge was assessed using a questionnaire. Statistical test using Wilcoxon Sign Rank Test. The results showed that the average pretest was 43.41 and the post-test average was 77.24. The value of p = 0.000 (<0.05) which means that there is an effect of Basic Life Support (BLS) training on knowledge of cardiac arrest first aid. Several factors behind the results were exposure to initial information, module provision and video and simulation methods. The research expected to be developed by providing a control group and cross sectional design.

INTRODUCTION

Cardiac arrest is a sudden and sudden loss of heart function, occurring very quickly once symptoms and signs appear (Jamil, 2016). Cardiac arrest outside the hospital or better known as Out of Hospital Cardiac Arrest (OHCA) is the most frequent occurrence of heart attacks and is one of the focuses of health problems in the world (Chapman et al., 2011). The number of heart attack deaths worldwide according to the American Heart Association (AHA) reached at least more than 17.6 million deaths per year in 2016, it is estimated that a heart attack occurs every 40 seconds (Ardiansyah et al., 2019). In Indonesia, the incidence of heart disease that causes death is 26.4% (Ferianto & Rini, 2016; Jamil et al., 2021). The survival rate for cardiac arrest victims only reaches 12%, and the main causes of the low patient survival rate are delays in patient reporting and delays in getting help with cardiopulmonary resuscitation (CPR) in patients (Merchant et al., 2020).

The action to help cardiac arrest patients does not have to be carried out by professional medical officers, the AHA has recommended for everyone to be able to carry out resuscitation actions by conducting training or what is commonly referred to as a CPR bystander (Laksono, 2017). In handling patients who are in the golden period, doing good CPR is very helpful in treating patients because this action can optimize spontaneous circulation in the heart. There are quite a lot of nursing students, most of their time is spent mingling in society, giving them the opportunity to act as first responders in OHCA cases in the community.

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The action to help cardiac arrest patients does not have to be carried out by professional medical officers, the AHA has recommended for everyone to be able to carry out resuscitation actions by conducting training or what is commonly referred to as a CPR bystander (Laksono, 2017). In handling patients who are in the golden period, doing good CPR is very helpful in treating patients because this action can optimize spontaneous circulation in the heart. There are quite a lot of nursing students, most of their time is spent mingling in society, giving them the opportunity to act as first responders in OHCA cases in the community.

The effective role of Bystander CPR is able to double the number of possible survival rates for cardiac arrest patients (Moon & Hyun, 2019). One of the efforts to increase CPR ability in nursing students is to conduct BLS training. Increased understanding of knowledge and skills in the treatment of cardiac arrest can have a significant impact in increasing the survival rate in cases of cardiac arrest (Cuijpers et al., 2012).

Preliminary studies conducted on university students, from 30 students, all of whom had never received BLS training but all stated that they were willing to provide first aid for cardiac arrest if they had the ability, even though all of them had never found cases of cardiac arrest in the community. Many cases of cardiac arrest in the community are not identified because the symptoms appear very quickly and are often considered as cases of common colds, so the term angina appears.

Advances in technology and the demands of the Covid-19 condition, which requires protocols to maintain distance, have made blended learning training methods a must. Blended learning compared to full offline, full online methods. Several research studies have found that blended learning can improve learning outcomes equal to or higher than students who study conventionally or fully online, although success rates vary between disciplines (Tridiwanto & Trishandra, 2020). The research expected that increasing student knowledge about cardiac arrest first aid through BLS training, it can increase the survival rate of cardiac arrest cases in the community. With the above background, researchers are interested in examining the effect of BLS training on students on knowledge of cardiac arrest first aid.

METHODS

The research design used Preexperimental Study because it did not use a control group. The population is all students of ITSK nursing study program, dr. Soepraoen numbered 229 people with the total sampling method. The variables measured in this study were knowledge before and after the BLS training intervention by providing training and assessing skills using the CPR Training guidelines from the American Heart Association (AHA) in 2020. The statistical test used the Wilcoxon Sign Rank Test with 5% alpha. The research was carried out for 2 days, namely the first day of the pre-test, then continued with BLS training using the blended learning method, theory station using the online method and demonstration and practice station carried out offline. On the second day, a post test was carried out. Knowledge was measured using a questionnaire.

RESULTS AND DISCUSSION

Research was conducted on the campus of the Institute of Health and Science Technology (ITSK) RS dr. Soepraoen Kesdam V. The results of the study are presented in the following table:

Table 1.1 Characteristics of Respondent

Characteristics of Respondents	F	%
Gender		
Man	49	21.3%
Woman	180	78.3%
Total	229	100%
Get information		
Once	18	7.9%
No	211	92.1%
Total	229	100

Based on table 1.1, it is found that the number of respondents is 229 with almost all (78.3%) being women and almost all (92.1%) having never received information.

Table 1.2 Pretest and Posstest Result

	N	N. Min	N. Max	Mean	Wilcoxon
Pretest	229	0	80	43.41	
Posttest	229	33	95	77.24	p = 0.000
Valid	229				

Source: Researcher Primary Data

Based on the table above, the average pretest result is 43.41 and the posttest average is 77.24 with an average difference of + 33.81 and the result of p = 0.000 (<0.05), which means H_0 is rejected and H_1 is accepted, namely BLS training effectively improve knowledge of the management of cardiac arrest.

Based on the research, it was found that the respondents pretest data had an average value of 43.41 with the smallest value being 0 and the largest value being 80. This could be influenced by several things, such as initial exposure to BLS training. Of the 229 respondents, only 18 (7.9%) of respondents had been exposed to BLS training while almost all (92.1%) or 211 respondents had never been exposed to BLS training.

Correct basic knowledge of something has an important role in facilitating understanding of the same knowledge or at an advanced level (Jamil, 2016, 2020) With a minimum of respondents who have received BLS training, it can affect a low average score.

In the posttest data, the average value of data was 77.24 with the highest score of 95 and the lowest being 33. The difference between the pre-post average was +33.81, which means that there was an increase in the average knowledge of the respondents. The results of the statistical test also showed the results of p = 0.000 which means that there is an effect of BLS training with increasing knowledge of cardiac arrest first aid.

Knowledge is the result of knowing what happens after people sensing the first aid for cardiac arrest in this case is Basic Life Support (BLS). Knowledge is a mental activity that developed through the learning process and stored in memory, will be dug up when needed through the form of memory (Jamil et al., 2021; Laksono, 2017; Tridiwanto & Trishandra, 2020). A study involving people layman shows that knowledge respondents increased after the BLS training. Improvement of his general knowledge accompanied by increased commitment and confidence to perform CPR in real condition (Cheng et al., 2018; Wang et al., 2015). Training is a short-term educational process that unites learning in theory and practice, so that training is a factor that can increase one's knowledge (Tivener et al., 2015). Training can affect knowledge significantly because it has supporting factors. One of the factors that makes training with the simulation method able to increase knowledge is because participants are guided directly by trainers who already have a provider certificate (Iil Dwi Lactona, 2021). In this study, there was an increase in knowledge evenly as evidenced by the increase in the average results from pretest to posttest.

In the training process, respondents get material through blended learning, namely theoretical material through online media (zoom) with the lecture method, question and answer, watch videos and practice materials by doing simulations directly. The use of the direct simulation method is thought to be able to provide an impact positive for increasing knowledge.

Online and offline blended learning methods have both positive and negative sides. The online method can cut distance and time, is not limited by distance, prevents the transmission of the covid-19 virus, doesn't need to be bothered to meet in person and can speed up the learning process, such as sending files,

googling and so on. But the negative side is that it requires a fairly fast and stable internet connection, requires a smart device such as an android or an adequate laptop, the material is more difficult to understand and there is no direct interaction that can hinder the learning process (Gallagher & Bonfier Tiedt, 2003; Moon & Hyun, 2019). Online learning is only effective for the eyes theory lectures and practicum demos only, while practical courses and field courses are not effectively conducted online. Memories are most easily forgotten compared to those obtained from higher mental processes or meaningful practical experiences (Tivener et al., 2015)

In accordance with the theory above, blended learning is still proven to be able to increase respondents knowledge with a difference of +33.81.

Another factor that can increase the knowledge of the trainees is the provision of modules. In this study, respondents were given a module in the form of a textbook entitled Principles and Basic Applications of Cardiopulmonary Emergency. This is supported by research which states that the provision of modules can increase respondents' exposure to basic life support. Modules can be useful for participants to study independently and respondents can study them outside of training time (Tridiwanto & Trishandra, 2020).

In addition to education through training through simulation concepts, there are several other methods of increasing knowledge, including through video. Training using video has its own advantages, namely that participants can learn independently using videos anywhere and anytime. Based on previous research, video education is an innovation in basic life support training (Iil Dwi Lactona, 2021). This study explains that video training is an effective method in teaching the general public about basic life support. The limitation in this study is that the pre-test and post-test were carried out in a short time (2 days), research needs to be done.

CONCLUSIONS AND RECOMMENDATIONS

The results of the knowledge pretest obtained a minimum value of 0 and a maximum of 80 with an average of 43.41. While the results of the posttest knowledge value of at least 33 and a maximum of 95 with an average of 77.24 or there is a difference of +33.81. The value of $p = 0.000$ (<0.05) which means that there is an effect of BLS training with knowledge about the management of cardiac arrest. The recommendation in this study is to conduct time series research by knowing the retention of knowledge immediately after the study, 2 weeks and 1 month after the training.

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