The influence of health education to improve community knowledge of basic life support procedure in Dlanggu district, Mojokerto regency, Indonesia

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Abstract

Basic Life Support (BLS) is an attempt to sustain life when a person experiences a life-threatening situation. BLS should be given to survivors with cardiopulmonary arrest. Ignorance of help and incompetent BLS management of a helper often occur in real cases in the field. This study aimed to determine the effect of health education on basic life support to the level of public knowledge. This research design used Pre-Experimental Design, with One Group Pretest-Posttest Design method. The population of this research is the community of Dlanggu District, Mojokerto Regency. The sample was taken as many as 59 respondents. The sampling method used is Probability type Simple Random Sampling. The data were collected using a questionnaire. The data was analyzed by using Wilcoxon Signed Rank Test with a significance level <0.05. The results showed a significance value of 0.000 (p<0.05), thus it can be concluded that there were significant differences before and after the provision of health education about BLS procedures.

Introduction

Basic life support (BLS) is the first attempt to maintain life when sufferers experience life-threatening conditions. The prognosis of death is increased due to the helper's inability to deal with patients in the golden period. This inability can be caused by the severity, inadequate equipment, lack of an integrated system and insufficient knowledge in emergency response. Mass education in BLS lead to a significant increase in the willingness to use an AED, and the confidence in providing chest compressions and mouth-to-mouth ventilations.[1] The right help in handling emergency cardiac arrest cases is Basic Life Support. Laypeople recognize their role in the immediate care given to victims of certain emergency situations. Even though laypeople lack training, they show interest in learning Basic Life Support.[2] Almost anyone can perform Cardiopulmonary Resuscitation (CPR) on someone experiencing cardiac arrest.[3] Frame has argued that BLS can be taught to anyone.[4] Every adult should have BLS skills; even children can also be taught according to their capacity. Sudden onset of emergency causes a vital function disorder in the form of loss of consciousness, cessation of breathing, cessation of the heart until death. For people who do not know how to help patients with heart attacks, the patient is left without any help and immediately taken to the hospital. Delays in handling will have an impact on the patient, family, and hospital who are asked for help. For families will feel very lost as well as for hospitals can reduce the image of the hospital, so it takes knowledge of BLS in the community.

Cardiac arrest is a major cause of death in several countries. Every year, emergency medical services assess the presence of more than 420,000 cardiac arrests outside of the hospital.[5,6] In 2013, Emergency Medical Service (EMS) in the United Kingdom sought to bring about 28,000 cases of out-of-hospital cardiac arrest (OHCA) to awareness.[7] In 2015 the Pan-Asian Resuscitation Outcomes Study (PAROS) identified cases of OHCA in several countries that were members of PAROS and 66,000 cases were found, most of which occurred at home.[8]

The study of the incidence of cardiac arrest in Indonesia has not obtained clear data. The interview results of 7 respondents said they did not know the steps to be taken to assist victims of cardiac arrest / respiratory arrest. One of the efforts to increase the knowledge and skills of the community in providing basic life-assistance is with health 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.[9] The next effort is to inform communities about the importance of first aid to victims who experience cardiac or respiratory arrest to improve life safety in the Dlanggu district of Mojokerto Regency.

Materials and Methods

This study aimed to analyze the effect of basic life support (BLS) health education on the level of community knowledge in Dlanggu District, Mojokerto Regency. The research design used was pre-experimental sesign, with one group pretest-posttest design method. Interventions provided in the form of health education, seminars and simulations. The population in this study is the Dlanggu village community, Dlanggu District, Mojokerto Regency. 59 samples were taken by simple random sampling technique.

Results

From Table 1 it can be seen that most respondents are male, have high school education, and have never received BLS infor-

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mation before.

Based on Table 2 shows that the average age of respondents is 35.66 years old with the youngest age is 25 years old, and the oldest is 52 years old.

According to Table 3, it can be identified that respondents' knowledge increased from 0% to 76.27% after receiving BLS simulation. Respondents reported that they felt more confidence in BLS procedure.

Based on Table 4 it is known that there were no respondents have poor knowledge after being given BLS simulation, even all respondents had better knowledge than before.

The results of Wilcoxon's statistical test obtained a significance value of 0.000 ($p<0.05$), thus concluded that there were significant differences before and after the provision of health education about BLS procedures.

Discussion

Knowledge is the result of 'knowing,' and this happens after people perceive a particular object Sensing occurs through the human senses. Most human knowledge is obtained through eyes and ears. Knowledge or cognitive is a domain that is very important for the formation of one's actions (overt behavior).[10] Prior to BLS simulation, all respondents had poor knowledge about BLS. Several factors influenced poor knowledge about BLS includes age, education and lack of information obtained.

Age

Based on Table 2, it shows that the average age of respondents is 35.66 years old. Age brings maturity and makes a person wise in the ways of thinking decision making. Older people will have tendency to be more trusted than any other person as they are more emotionally stable and resilience.[11] However, maturity may not necessarily affect one's ability to learn skills. Age is the only factor that significantly affects skill acquisition (skills possessed by those who are ≥40 years poorer than those who <40 years old). Yet, BLS training is less effective in individuals aged ≥40 years.[12] In young adulthood, a person will be more energetic and productive in carrying out daily activities. This happens when respondents became enthusiastic to demonstrate BLS procedures. Respondents explored their knowledge regarding all BLS procedures includes how to ask for help, how to compress the chest, and how to end BLS procedures.

Education level

Based on Table 1, most respondents were educated in high school as many as 50 respondents (67.8%). The higher the level of knowledge of respondents, the higher the information received. Poor knowledge becomes additional barriers to implement BLS procedures. In this study, there were no respondents who had studied in the field of health, so they have lack of information about BLS procedures. However, it can be anticipated by providing adequate information about how to apply BLS procedures. Previous study stated that poor knowledge about BLS can cause inconsistency between expectations and reality in the community.[13,14]

Information

Based on Table 1, it was found that most of the respondents had never known about the BLS procedure (89.8%). In addition, respondents in this study only 10.2% have received information or knowledge about BLS. In this study, respondents seemed so curious to learn and demonstrate BLS procedures.

Based on the results of the Wilcoxon Signed Rank Test, obtained $p = 0.000$ at the level of $p \leq 0.05$. It means that there is a significant influence about the BLS simulation on communities' knowledge. Sufficient information about health or BLS procedures can stimulate community activities to live healthier.[15] People who have never received information about BLS are certainly not aware of the threat when there are people

Table 1. Characteristics of respondents based on gender, education, and information ever obtained about BLS.

No	Variable	Total	(%)
Gender	Male	38	64.4
	Female	21	35.6
Education	Elementary	11	18.6
	Junior high school	5	8.5
	Senior high school	50	67.8
	University	3	5.1
Information	No	53	89.8
	Yes	6	10.2

Table 2. Characteristics of age of respondents.

Variable	Mean	Mode	SD	SE	Min - Max
Age	35.66	38	6.514	0.848	25 - 52

Table 3. Differences in Respondents Knowledge Levels Before and After Health Education About BLS.

No	Knowledge level	Pre		Post	
		n	%	n	%
1.	Good	0	0	45	76.27
2.	Average	5	8.47	14	23.7
3.	Poor	54	91.53	0	0
Total		59	100	59	100

Table 4. Wilcoxon test results.

Ranks		N	Mean Rank	Sum of Ranks	Before-After
Before - after	Negative Ranks	0[a]	0.00	0.00	
	Positive Ranks	59[b]	30.00	1770.00	
	Ties	0[c]			
	Total	59			
Test statistics					
Z					-6.733*
Asymp. Sig. (2-tailed)					0.000

a. before<before; b. before>before; c. after=before. *Based on negative ranks

experiencing cardiac arrest or sudden unconsciousness.

Conclusions

There is an influence of health education about BLS procedures on communities' level of knowledge. The better the knowledge of respondents, the better patients' quality of life will be achieved.

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