



IMPROVING STUDENTS' HANDS ONLY CPR SKILLS THROUGH BLS SIMULATION ACTIVITIES: A PRE-EXPERIMENTAL STUDY AT KHOMSANI NUR BOARDING SCHOOL IN LUMAJANG

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ABSTRACT

Background: Out-of-Hospital Cardiac Arrest (OHCA) or better known as cardiac arrest is the leading cause of death in emergency cases. Quality Cardiopulmonary Resuscitation (CPR) is by performing compression and ventilation so as to help victims of cardiac arrest to survive. But many people do not know about the procedure for giving CPR to victims of cardiac arrest. The purpose of this study is to increase the knowledge of santri as part of the community about the proper and correct CPR procedures. Translated with www.DeepL.com/Translator (free version). **Methods:** The research method used pre-experimental with pre post test approach. The population of this research is the students of Khomsani Nur Lumajang boarding school, totaling 37 people.. **Results:** Data analysis used the Wilcoxon signed rank test. As a result, hands only CPR training has a positive effect on the knowledge and skills of students in performing CPR with a p-value of 0.0001. The average score before the hands only CPR simulation with a minimum score of 20 and a maximum score of 75, and the average score after the hands only CPR simulation with a minimum score of 75 and a maximum score of 100, it can be seen that there is an increase in respondents about Hands Only CPR. This shows that there is a relationship between education or training and the level of knowledge of respondents.. **Conclusions:** Hands only CPR training can improve the knowledge and skills of students in providing assistance using hands only CPR to victims of cardiac arrest emergencies.

Keywords: Emergency, First Aid, Student Health Response

INTRODUCTION

Out-of-Hospital Cardiac Arrest (OHCA) or better known as cardiac arrest and respiratory arrest cases that occur outside the hospital is the most life-threatening emergency condition and can occur anywhere, anytime and can affect anyone (Sumartini et al., 2021). Cardiac arrest is a condition in which the heart stops pumping blood, causing blood flow to stop and causing a decrease in the functioning of organs in the body (Santoso

et al., 2022). Data suggests only about 25% to 30% of patients with OHCA initially achieve return of spontaneous circulation (ROSC) and are hospitalized (Jentzer & Callaway, 2018). This low score is due to the victim getting help too late or the time when the victim was found had passed the golden time and mistakes in performing first aid when the victim was first found (Sudarman, 2019).

Providing early help is most beneficial if it is done as quickly and well



as possible. It is better to be helped, even if imperfectly, than to be left without help (Wulandini et al., 2018). Appropriate first aid in cases of cardiac arrest is basic life support (BLS) (Zuhroidah et al., 2021). Patients with cardiac arrest have a chance to live again or their lives are saved when they immediately get Basic Life Support (BLS) help quickly and accurately, the first aid that can be done is CPR. Someone who finds a victim of cardiac arrest and respiratory arrest should immediately contact Emergency Call and then immediately perform Cardiopulmonary Resuscitation (CPR) / external heart massage to help the victim survive (Sudarman, 2019). Effective CPR is to perform compressions followed by ventilation (Maisyaroh et al., 2023). If cardiopulmonary resuscitation is performed immediately, the survival rate is 75% (Kleinman et al., 2015).

Understanding the basic concepts of emergency aid is not only important for health workers but also for non-health workers so that they can provide assistance when they find victims in life-threatening conditions. Santri are one part of the community that can be given BHD training and they are also at an adolescent age that is vulnerable to these emergency situations. This emergency training is important for students, so that they can be utilized in providing initial aid in the boarding school environment and when they are in the general public (Zuhroidah et al., 2021).

Based on the results of interviews with one of the caregivers and students of Khomsani Nur Lumajang Islamic boarding school, Khomsani Nur Islamic boarding school does not yet have a Pondok Kesehatan Pesantren (POSKESTREN) device and has never received training and assistance in Basic Life Support (BHD) so that if an emergency occurs in the boarding school environment and its surroundings, the victim will be taken directly to the nearest health service center

without performing first aid at the scene due to limited abilities. One of the efforts to improve the ability of students to perform CPR by hand (hands only) through training activities. Research results Widyarani (2018) stated that CPR training had an effect on participants' knowledge and skills. The average score of initial knowledge was ± 44.43 and the average score after training was ± 89.64 , which showed an increase in participants' knowledge in performing CPR.. The results of this study are in line with research Widyarani (2018) which states that a person's knowledge is influenced by the learning process and individual observation since obtaining exposure and will decrease within a certain time frame. So that this hands only CPR training can provide a learning process and exposure that can increase the knowledge of Khomsani Nur Lumajang boarding school students.

The purpose of this activity is to analyze the effectiveness of the simulation method in improving students' skills in performing hands-only CPR on victims of cardiac arrest emergencies.

METHODS

The method used in this research is pre-experimental with a one group pre post test design approach. The sample involved in this study amounted to 37 respondents who were determined using purposive sampling technique. The inclusion criteria that researchers use include: 1) Santri who are at the Mts / MA education level or equivalent, 2) Have never attended or received BLS training, 3) Willing to participate in this study by signing an informed consent sheet. Data collection activities began with measuring the ability of respondents to perform CPR using the CPR assessment observation sheet for lay people as a form of pre-test. Then the respondents were given BLS simulation material and CPR practicum only by hand. After that, the respondents' ability to



perform CPR only by hand was measured again. The measurement results before and after the BLS simulation were analyzed using the Wilcoxon signed rank test.

RESULTS

The demographic characteristics of the participants' gender found that the

number of female and male participants was almost equal, namely 20 male participants and 17 female participants. The average age of the participants was 18 years old. The education level of the participants ranged from junior high school to senior high school (Table 1).

Table 1. Demographic Data

	Frequency (Σ)	Percentage (%)
Gender		
Male	20	54,06
Female	17	45,94
Age		
11 – 13 Years	10	27,03
14 – 16 Years	18	48,65
17 – 19 Years	9	24,32
Education Level		
SMP/MTs	13	35,14
SMA/MA	24	64,86

The results of data analysis showed that the minimum score of participants before being given hands only CPR simulation was 20, while the maximum score was 75. However, after the

participants were given hands only CPR simulation, the participants' scores increased with a minimum score of 17 and a maximum score of 100 (Table 1.2).

Table 2. Data Analysis Results

	Pre-test Hands Only CPR	Post-test Simulasi Hands Only CPR
Minimum Value	20	75
Maximum Value	45	100
Mean \pm SD	28,51 \pm 7,44	98,10 \pm 4,90
Normality Test (Shapiro Wilk)	0,001	0,0001
<i>Wilcoxon Signed Rank Test</i>		0,0001

DISCUSSION

Based on table 1.1 of the characteristics of respondents based on the gender of the research results, 20 respondents were male with a percentage (54.94%) and 17 women with a percentage (45.94%). According to Arifin et al. (2019) mentioned that males generally have a stronger physique when compared to females during pregnancy and

menstruation. So men can last longer in performing first aid using the PCR technique while waiting for help to arrive.

Based on table 1.1, the characteristics of respondents based on the age of the research results obtained at the age of 11-13 years, there were 10 respondents with a percentage (27.03%), ages 14-16 years as many as 18 with a percentage of 48.6, and ages 17-19 as



many as 9 respondents with a percentage (24.32%). According to Ngurah & Putra (2019) stated that age is one of the factors that can describe a person's maturity both physically, psychologically and socially so that it helps a person to be better able to shape behavior. Age affects a person's capacity and mindset. The older the age, the more developed the power of capture and mindset, so that the knowledge gained is getting better. Age maturity will affect the thought process and decision making in determining something.

Based on the level of education in table 1.1, 13 respondents were educated or still attending junior high school / MTs and 24 respondents were educated or still attending high school / MA. The results of this study showed that the respondents with the most hands only CPR training were SMA / MA education. Arifin et al. (2019) mentions that education is one of the guidance that a person gives to people about something so that they can understand it. It cannot be denied that the higher a person's education, the easier it will be for them to receive information. The more information one has, the greater one's knowledge. According to Arifin et al. (2019) Health education has a very important role for individuals, communities, and groups in adding information obtained through the learning process so that attitudes and skills that were initially poor become good and correct. The lack of knowledge and information received or respondents have never received material about CPR makes respondents unable to perform first aid with the CPR method when meeting with victims of cardiac arrest.

Based on the results of research conducted by researchers on 37 respondents. The results of this study indicate that the level of knowledge of respondents before education about hands only CPR, the average score of respondents' knowledge at the time of pre-simulation of hands only CPR got a

minimum score of 20 and a maximum of 75 and after training there was an increase in value to a minimum score of 75 and a maximum score of 100. These results are in line with research Maulidya et al. (2022) stated that the level of knowledge of all respondents increased rapidly. So it can be concluded that there is a relationship between education or training and the level of knowledge of respondents, this is because after all respondents receive information presented by extension workers, the level of knowledge of respondents increases. The provision of PCR training can affect the respondent's affirmation towards a better direction before the hands only CPR training. In addition, the advantage of training with this lecture and simulation method is that each respondent can witness in real time how to PCR properly and correctly and the extension agent can directly provide material and directly monitor the course of training.

Based on the results of the normality test (Shapiro Wilk), the Wilcoxon signed rank test obtained a value of 0.0001, these results indicate a significant change in respondents in performing or applying hands only CPR. This is supported by the results of the post-simulation value of hands only CPR, there is a difference or increase in the minimum and maximum values.

Respondents showed that they could perform CPR on pantums properly and correctly, and understood the stages of first aid with the CPR method.

CONCLUSION

The conclusion of this study is that there is an effect of increasing knowledge, skills, and application in respondents who take CPR training by hand in performing cardiac arrest emergency assistance.

SUGGESTION

Suggestions from researchers, namely hands only CPR training, maybe in



the future it can be modified or given with video methods or added with music so that it is even more interesting and makes respondents' interest even more increased.

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