



The Influence of Basic Life Support Education on The Knowledge and Skills of Teenage Red Cross Members of State High School 19 Surabaya

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Abstract. Background: The most common emergency event is cardiac arrest. The first aid provided is Cardiopulmonary Resuscitation. RJP actions can be carried out by anyone, including Teenage Red Cross It is necessary to provide education about CPR so that TEENAGE RED CROSS can provide first aid to victims of cardiac arrest. The research objective was to determine the effect of basic life support education on the level of knowledge and skills in Teenage Red Cross of State High School 19 Surabaya. Methods: This type of research is a one-group pre-post test design with the independent variable being CPR education, the level of knowledge and skill attachment variable. The sampling technique used was total sampling, which means the number of samples is the same as the population, namely 33 people. The instruments used were questionnaires for knowledge level and observation sheets for skills. Results: The level of knowledge and skills before being given a CPR education was mostly in the poor category and after being given a CPR education, almost all of them were in the excellent category. After testing the Wilcoxon Signed Rank Test, the results showed a significant value of $P=0.000 < \alpha=0.05$. Conclusion: There is an increase in the level of knowledge and skills after being given CPR education, which means that there is an influence of education about CPR on the level of knowledge and skills at Teenage Red Cross of State High School 19 Surabaya. Research suggestions need to add other variables and increase the sample size to maximize further research.

Keywords: Basic Life Support (CPR), knowledge, skills, Youth Red Cross, State High School

1 Background

According to the Public Communication Center of the Secretariat General of the Indonesian Ministry of Health emergency events can happen to anyone, anywhere, and anytime. One emergency event is cardiac arrest [1] Cardiac arrest can occur outside the hospital. Cardiac arrest conditions require fast and immediate action. If not treated

immediately it will cause death. CPR can improve the quality of life in cardiac arrest patients [2]. Therefore, it is essential to increase the number of RJP bystanders in order to reduce the death rate due to in-hospital heart attacks (OHCA). More than 17 million people in the world die from heart and blood vessel arrest. Globally, 50-60% of cardiac arrest patients can occur outside the hospital [3]. Many 40.1% of OHCA victims were saved by CPR. According to the Ministry of Health, in Indonesia alone, cases of cardiac arrest have reached 2 million and continue to increase by 1.5% every year with the highest prevalence rate [4].

There are several countries in the world that have provided special education and training about RJP for children aged over 12 years, one of which is European countries such as Belgium, Denmark, Portugal, Italy, and France [5]. Efforts to increase knowledge about CPR were previously researched by Sanita Fitri et al in January 2022. This research aims to determine the effect of CPR health education on Cleaning Officers at STIKes Dharma Husada Bandung. The results of this research showed that before being given health education, almost half of the cleaners (28.6%) had a poor level of knowledge and the majority (71.4%) had a sufficient level of knowledge. After being given health education, most of the cleaning staff (57.1%) had a good level of knowledge and almost half (42.9%) had a fair level of knowledge(2). In 2019, efforts to increase knowledge were also carried out by another researcher, namely Ahmad Hasan. Researchers assessed the level of knowledge and readiness of CPRs in helping accident victims among motorbike taxi drivers. The aim of this research is to explain the effect of CPR training on knowledge and readiness to help motorcycle taxi drivers in Gresik. The results obtained were that almost half (38.1%) had good knowledge, half (33.3%) had sufficient knowledge, and a senior high school portion (28.6%) had poor knowledge [6].

Previous researchers did not assess the skills of the CPR actions carried out so that the implementation of the lay public could not be known when a patient was found in an emergency condition. If we only look at the level of knowledge, it doesn't support emergency assistance, so we also need to know the skills involved in providing first aid to ordinary people [7]. Therefore, researchers are interested in conducting research on the influence of education about CPR on the knowledge and skills of teenage red cross members of State High School 19 Surabaya. teenage red cross of State High School 19 Surabaya has never received material about CPR during extracurricular activities. This shows the lack of knowledge of teenage red cross members of State High School 19 Surabaya about CPR.

2 Method

The method used is a *one-group pre-post test design*. Researchers who provide CPR education already have PPGD certificates in 2021. The population taken in this study is teenage red cross members of State High School 19 Surabaya in 2021/2022 and the sample used is all teenage red cross members of State High School 19 Surabaya (total sampling). The research variables in this study are CPR education (independent variable) and knowledge and skills (dependent variable). The research location was at State High School 19 Surabaya on Saturday 6 May 2023. The instruments used were multiple

choice questionnaires to assess the level of knowledge and observation sheets to assess skills.

3 Result

3.1 CPR Knowledge of Teenage Red Cross Members of State high school 19 Surabaya Before Being Given CPR Education

Based on Table 1, it shows that before being given CPR education, the majority (69%) of TEENAGE RED CROSS members had poor knowledge and a State High School portion (4%) had good knowledge. CPR Knowledge of teenage red cross members of State High School 19 Surabaya After Being Given CPR Education

Table 1. Knowledge of teenage red cross members of State high school 19 Surabaya before being given CPR education

NO.	Cognitive	N	%
1.	Good	1	4
2.	Enough	9	27
3.	Not enough	23	69
Total		33	100

3.2 CPR Knowledge of Teenage Red Cross Members of State High School 19 Surabaya After Being Given CPR Education

Based on Table 2, it shows that after being given CPR education, the result was that almost all (93%) members of teenage red cross had good knowledge and no one (0%) had less knowledge.

Table 2. CPR knowledge of teenage red cross members of state high school 19 Surabaya after being given CPR education

NO.	Cognitive	N	%
1.	Good	31	93
2.	Enough	2	7
3.	Not enough	0	0
Total		33	100

3.3 CPR Skills of Teenage Red Cross Members of State High School 19 Surabaya Before Being Given CPR Education

Based on Table 3 it can be seen that before being given CPR education all teenage red cross members (100%) had less skills and none (0%) had good skills

Table 3. CPR skills of teenage red cross members of state high school 19 Surabaya before being given CPR education

NO.	Skills	N	%
1.	Good	0	0
2.	Enough	0	0
3.	Not enough	33	100
Total		33	100

3.4 CPR Skills of Teenage Red Cross Members of State High School 19 Surabaya After Being Given CPR Education

Based on Table 4 it shows that after being given a CPR education most (72%) of teenage red cross members have good skills and a State High School proportion (4%) have poor skills

Table 4. CPR skills of teenage red cross members of state high school 19 Surabaya after being given CPR education

NO.	Skills	N	%
1.	Good	24	72
2.	Enough	8	24
3.	Not enough	1	4
Total		33	100

3.5 The Influence of CPR Education on the Knowledge of Teenage Red Cross Members of State High School 19 Surabaya

Based on Table 5, it can be seen that before being given education about CPR, a State High School proportion (4%) of teenage red cross members had a good level of knowledge. After being given health education, there was an increase, namely that almost all (93%) teenage red cross members had good knowledge. The results of the Wilcoxon signed rank test obtained a significant value, namely $P = 0.000 < \alpha = 0.05$. From these data, it can be concluded that there is an influence of CPR education on the knowledge of teenage red cross members of State High School 19 Surabaya. After being given CPR education, the knowledge of State high school 19 Surabaya increased.

Table 5. The influence of CPR education on the knowledge of teenage red cross members of state high school 19 Surabaya

NO.	Cognitive	Pre		Post	
		N	%	N	%
1.	Good	1	4	31	93
2.	Enough	9	27	2	7
3.	Not enough	23	69	0	0
Total		33	100	33	100
<i>Wilcoxon Sign Rank Test</i>		P=0.000 < α = 0.05			

3.6 The Influence of CPR Education on the Skills of Teenage Red Cross Members of STATE HIGH SCHOOL Negeri 19 Surabaya

Based on Table 6, it shows that before being given a CPR education, none (100%) of teenage red cross members had good skills and after being given a CPR education, most (72%) had good skills. The results of the Wilcoxon marked rank test obtained a significant value of $P = 0.000 < \alpha = 0.05$. It can be concluded from these data that there is an influence of CPR education on the skills of teenage red cross members of State High School 19 Surabaya. After being given CPR education, the skills of teenage red cross members at State High School 19 Surabaya increased

Table 6. Effect of CPR education on the skills of teenage red cross members of State High School 19 Surabaya

NO.	Skills	Pre		Post	
		N	%	N	%
1.	Good	0	0	24	72
2.	Enough	0	0	8	24
3.	Not enough	33	100	1	4
Total		33	100	33	100
<i>Wilcoxon Sign Rank Test</i>		P=0.000 < α = 0.05			

4 Discussion

4.1 Knowledge of Teenage Red Cross Members of State High School 19 Surabaya Before Being Given CPR Education

The results showed that before being given CPR education, most teenage red cross members had poor knowledge and a few had good knowledge. Ordinary people have never received education about CPR and are still very unfamiliar with CPR actions [8]. If in the environment there are victims of cardiac arrest, generally the common people only help these victims by calling an ambulance or immediately taking the victim to the nearest hospital without providing first aid [9]. The general public and special people

both play an essential role in carrying out CPR for cardiac arrest victims. CPR can be done by anyone it doesn't have to be done by health workers [10]. The teenage red cross members of State high school 19 Surabaya had never previously received education about CPR. They only get material about splints, first aid for syncope, how members can stop bleeding, and so on. One of the factors of knowledge is information. The lack of knowledge about CPR makes many teenage red cross members of State high school 19 Surabaya have a low level of knowledge and the need to be given CPR education as a form of information to increase their level of knowledge.

4.2 Knowledge of Teenage Red Cross Members of State High School 19 Surabaya After Being Given CPR Education

The results of the study after being given CPR education using the lecture method and PPT media, almost all teenage red cross members had good knowledge, a State High School number of teenage red cross members still had sufficient knowledge and no teenage red cross members had insufficient knowledge. Which shows the results of increasing the level of CPR knowledge [11]. The results of the research that have been carried out are that most of the respondents are in the category of good level of knowledge after being given education about CPR by the lecture method and providing educational media in the form of leaflets. Knowledge of CPR is very important for ordinary people, one of whom is teenage red cross members [12]. Providing CPR education is a way to increase one's knowledge in first aid for patients with heart attack cases. The provision of CPR education can be carried out using the lecture method using health education media so that the provision of health education can be maximized [13]. The level of knowledge can also be influenced by many factors such as the conditions under which health education is provided and the level of education.

4.3 Skills of TEENAGE RED CROSS Members of State High School 19 Surabaya Before Being Given CPR Education

The research results showed that all teenage red cross members had poor skills and none of them had good skills. There are several teenage red cross members who have attended counseling about CPR for a period of around two to one year. The lack of skills in society is caused by a lack of CPR knowledge [14]. Ordinary people are still just recognizing CPR for the first time. Apart from that, low skills can also be caused by a lack of application in everyday life. This means that people who have previously participated in CPR training have lacking skills. Based on the theory above, it is the same as the results of the research conducted [15]. Many teenage red cross members have never received CPR education and there are several teenage red cross members who have attended CPR education but have never practiced it in their daily activities

[16]. The lack of CPR skills needs to be given health education not only audiovisual or lectures but needs to be improved so that skills can be developed again.

4.4 Skills of Teenage Red Cross Members of State high school 19 Surabaya After Being Given CPR Education

The research results obtained after being given education about CPR were that most of the teenage red cross members had good skills and a Senior High School number had poor skills. However, the results of the study found that there were members of teenage red cross who had sufficient and insufficient skills. The provision of CPR education uses violence and props. This is proven by research conducted by Made Novita Sari with the results of her research showing that the sharpness method can improve students' skills apart from using the simulation method and there is a difference between CPR skills before and after being given CPR education [17]. The discussion above can be seen to improve CPR skills need to be given learning with a sharp method [18]. The resonance method is a fairly efficient and effective method of conveying information [19]. teenage red cross members of State High School 19 Surabaya find it easier to capture information and apply the sequence of CPR movements using the compaction method. Assessing skills also requires attention to the readiness of teenage red cross members to carry out CPR actions in order to have good skill-level results.

4.5 The Influence of CPR Education on the Knowledge of Teenage Red Cross Members of State High School 19 Surabaya

Based on the research results, it was found that before being given CPR education, most teenage red cross members had insufficient knowledge. After being given CPR education, almost all teenage red cross members have good knowledge. Based on research by Fatmawati et al., with the title "Increasing Basic Life Support Knowledge in Non-Hospital Cardiac Arrest and Cardiac Pulmonary Resuscitation for High School Students" the results obtained after basic life support education were carried out there was a significant change in the level of knowledge of high school students [20]. The research used a sample of 25 students. The method used is a lecture with PPT and roleplay. Before being given CPR education the level of knowledge was in the less category with details on the definition of CPR (23.8%), theory of danger (32.7%), theory of asking for help (33.6%), compression techniques (21.4 %), and the theory of "the right time to stop CPR" (26.8%). After being given CPR education the level of knowledge is in a good category with details on the definition of CPR (74.8%), danger theory (72.4%), asking for call for help theory (75.2%), compression techniques (72.3% %), and the theory of "the right time to stop CPR" (77.4%). Providing education about CPR is very important for teenagers, especially teenagers who take part in teenage red cross extra-curricular activities [21]. Providing CPR education to teenage red cross is expected to

help provide first aid in conditions outside the hospital [22]. The results of the study showed that almost all teenage red cross members had never received CPR education and had a lower knowledge level category. After being given CPR education the level of knowledge increases or has a good category. Based on this description, it can be concluded that providing education can increase the level of knowledge.

4.6 The Influence of CPR Education on the Skills of Teenage Red Cross Members of State High School 19 Surabaya

The research results obtained showed a significant influence after health education was carried out. Before being given education about CPR, all teenage red cross members had fewer skills criteria and after being given health education, most members had good skills criteria. The results of this study are the same as the research conducted by Nirmalasari & Winarti, entitled "The Effect of Basic Life Assistance Training (CPR) on the Knowledge and Skills of Public Health Students" which was conducted at UPN Veteran Jakarta [23]. Based on the results of research conducted by Vina et al., the average result before training was 4.57 with a standard deviation of 1.99 and after training, the average result was 16.22 with a standard deviation of 1.20. After being tested using the paired sample t-test, it produced a significance value of 0.000 ($p < 0.05$) [24]. These results can be concluded that there is a significant effect before and after training. Researchers practiced CPR skills first before teenage red cross members had their skills scored. This will motivate teenage red cross members to show their skills to the maximum when taking skill scores. The CPR skills of all teenage red cross members are still in the deficient category [25]. This is due to a lack of information and experience in practicing CPR.

5 Conclusions

From the research results, it can be seen that there are significant differences before and after being given CPR education, both in terms of knowledge and skill levels. From the data above, there was an increase in knowledge and skills after being given CPR education. There are several suggestions that researchers can give to Teenage Red Cross of State High School 19 Surabaya, namely that CPR material needs to be passed on to younger siblings or new teenage red cross members, so that CPR knowledge doesn't just stop, teenage red cross members need to disseminate CPR material to all students at the school. So that all students at State High School 19 Surabaya can know the CPR material, teenage red cross members who have low or sufficient grades are expected to study again to improve their CPR knowledge and skills. Suggestions for schools are that CPR materials must be given to teenage red cross members so that teenage red cross members can later provide education to their peers at school. For future researchers, there is a need for further research with a larger sample, not just in one organization in the school. Other variables need to be added as knowledge factors so that future

research can be better. There is a need to use other demonstration methods such as showing CPR steps using video media and others.

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