

## Conference Paper

# The Effect of Cardiopulmonary Resuscitation Simulations on (Knowledge, Attitudes, and Skills) of Youth Organization Members in Candibinangun Village, Pakem District, Sleman

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## Abstract

**Background:** People who experience an Out-of-Hospital Cardiac Arrest (OHCA) are very unlikely to survive because the probability of survival decreases by 7-10%. Therefore, immediate treatment is needed by people around the victim (bystanders). Early cardiopulmonary resuscitation (CPR) provided by bystanders reduces death rate associated with OHCA. However many bystanders can not do CPR and the majority were young people. **Objectives** This research aimed to investigate the effect of cardiopulmonary resuscitation (CPR) simulations on (knowledge, attitudes, and skills) of Youth Organization's members in Candibinangun Village, Pakem District, Sleman. **Methods:** The design of this research was one group pre-test post-test. In this study, the respondents were taught CPR simulation intervention. The sampling technique used was accidental sampling with a total sample of 15 respondents. The inclusion criteria were age > 13 years, had never taken CPR simulation training, unskilled bystander, and willing to become respondents. The exclusion criteria were members of the Youth Organization having experience as a trained bystander. This research used bivariate data analysis and Wilcoxon Rank Test as the data was not normally distributed. **Results:** CPR simulations had an effect on the knowledge ( $p = 0.001$ ), attitudes ( $p = 0.009$ ), and skills of rescuing victims of cardiac arrest ( $p = 0.001$ ). The average score of pre-test and post-test on the knowledge variable were 32 and 81.33. The average score of pre-test and post-test on the attitude variable were 57.33 and 82.67. The average score of pre-test and post-test on skill variable is 8 and 75. **Conclusion:** CPR simulation increases the ability of young people as bystanders. Suggestion: CPR simulation is included in *Karang Taruna* (Youth) Organization routine activity.

**Keywords:** cardiac arrest, bystander, behavior, youth organization's members

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## 1. Introduction

Cardiac arrest is an emergency condition in the normal circulation of blood that suddenly stops, marked by a loss of arterial blood pressure. Cardiac arrest causes asystole, ventricular fibrillation, ventricular tachycardia without a pulse (Hardisman, 2014; AHA,

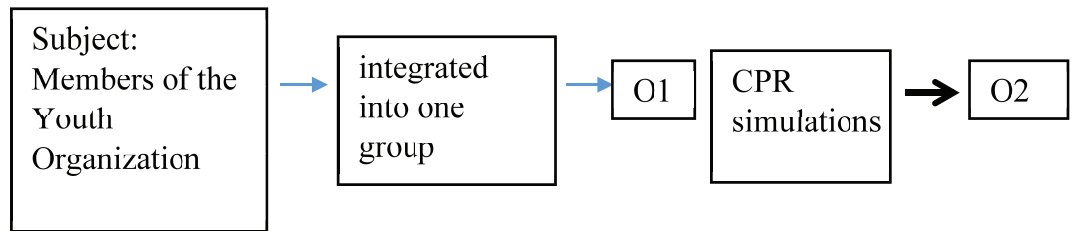
2015). According to Lenjani *et al.* (2014), the incidence of cardiac arrest mostly occurs in young adults. There are several causes of cardiac arrest, but the most common one is cardiovascular disease (Indonesian Heart Association, 2016). The results of Vanden *et al.* (2010) support that 81% of cardiac arrest incidence is caused by coronary heart disease.

Patients who suffer an Out-of-Hospital Cardiac Arrest are very unlikely to survive because the probability of survival decreases from 7 to 10% (AHA, 2015). Based on that fact, immediate handling or treatment is necessarily carried out by the surrounding people or commonly called as *bystanders*. Immediate treatment for emergency cases of cardiac arrest that can be done by bystanders is *Basic Life Support (BLS)*.

Mandatory basic life support that can be taken by bystanders as untrained rescuers based AHA (2015) is to perform Lung Cardiac Resuscitation (LCR) only by compression (hands only). AHA (2015) exhibits that the survival rate of heart-attack people who are only given compression or breathing compression is the same. Therefore, it is hoped that bystanders as untrained rescuers can do CPR (hands only). Based on this fact, it is important to carry out a CPR simulation. Research related to CPR simulations was conducted by Ngirarung, Mulyadi & Marara (2017). It exhibited an influence of CPR simulations on the motivation level to help cardiac arrest victim. However, Ngirarung, Mulyadi & Marara (2017) research merely determined the effect of CPR simulations on the motivation level to help cardiac arrest victims. Therefore this research aimed to determine the effect of CPR simulation on motivation level, knowledge, and skills aspect to help victims of cardiac arrest. Respondents involved in this research were members of Youth Organization. The respondents were youth possessing strong physical potential, alertness, high willingness to learn, and were ready to accept change. The researcher chose Karang Taruna Candibinangun Sleman youth as respondents. Based on the preliminary study, members of Karang Taruna Candibinangun had never been exposed to CPR simulations.

## 2. Methods

This research was conducted using the Quasi-experimental method with one group pre-test post-test only. The intervention conducted by researchers was providing CPR simulations to respondents. Respondents were pre-tested (knowledge, attitudes, skills) before CPR simulation. The post-tests (knowledge, attitudes, skills) was conducted after CPR simulation.



The number of respondents involved in this research was 15 respondents representing 12 hamlets in Candibinangun Village, Pakem District. The sampling technique used was accidental sampling with a total sample of 15 respondents. The inclusion criteria were age > 13 years, have never attended CPR simulation training, unskilled bystander, and willing to become respondents. The exclusion criteria are members of Youth Organization possessing experience as a trained bystander. Data were collected using a survey method with questionnaire sheet instruments for measuring knowledge and attitude domains and observation sheet instruments for measuring the skill domain. There were 10 questions on the knowledge variable and 10 questions on attitude variable. A validity test was conducted on the questionnaire sheet with a validity test value in the range 0.6-0.8. Reliability test results obtained an alpha value of 0,92 which means it is reliable. While the observation sheet instruments had been previously adjusted to the stages of conducting CPR based on AHA (2015). Data analysis was carried out using SPSS program version 21. In this research, the researcher conducted univariate and bivariate analysis. The bivariate analysis used the Wilcoxon Signed Rank test because the data were not normally distributed.

### 3. Results

TABLE 1: Characteristics of Respondent (n =15).

Characteristics	n	%
Age		
Teenagers (13-20 years)	7	46.7%
Early adults (21-40 years)	8	53.3%
Gender		
Female	4	26.7%
Male	11	73.3%
Educational Level		
Junior High School	3	20%
Senior High School	10	66.7%
College	2	13.3%

Table 1 exhibits that the majority of respondents were young adults (21-40 years) at 53.3%. Most respondents were male (73.3%) and possess Senior High School education level (66.7%).

TABLE 2: Effect of CPR Simulation on the Knowledge of Youth Organization's Members in Candibinangun Village (n =15).

Characteristics	Standard Deviation	p-value
Pre	14.736	0.001
Post	11.872	

Table 2 exhibits the differences in the respondents' knowledge level of rescuing cardiac arrest victims between pre-test and post-test. The Wilcoxon Signed Ranks test resulted in an Assymp Sig (2-Tailed) of 0.001 ( $\alpha = 0,05$ ). This result indicates that statistically, there are differences in the knowledge level of providing CPR between pre-test and post-test.

TABLE 3: Distribution of the Effect of CPR Simulation on the Attitudes of Youth Organization's Members in Candibinangun Village in Rescuing Cardiac Arrest Victims (February 2019).

Characteristics	Standard Deviation	p value
Pre	21.202	0.009
Post	18.310	

Table 3 exhibits that the differences in the respondents' attitudes of rescuing cardiac arrest victims between pre-test and post-test, statistically identified from the result of Assymp Sig (2-Tailed) of 0.009 ( $\alpha = 0,05$ ) obtained from the Wilcoxon Signed Ranks test.

TABLE 4: Distribution of the Effect of CPR Simulation on the Skills of Youth Organization's Members in Candibinangun Village in Rescuing Cardiac Arrest Victims (February 2019).

Characteristics	Standard Deviation	p-value
Pre	21.112	0.001
Post	14.392	

Table 4 exhibits the differences in the respondents' skills of rescuing cardiac arrest victims between pre-test and post-test, statistically identified from the result of Assymp Sig (2-Tailed) of 0.001 ( $\alpha = 0,05$ ) obtained from the Wilcoxon Signed Ranks test.

## 4. Discussion

Viewed from the gender aspect, the majority of the respondents in this research were male (73,3%). The remaining 26.7% were female. Therefore, the respondents in this research had a high potential to become bystanders. This is consistent with the results of the study by Blewen *et al.* (2018) and Huang *et al.* (2018) showing that men have bigger potential and willingness to become CPR bystanders than women. Most respondents (66.7%) were Senior High School education-backgrounded, indicating the huge potential of the respondents to accept CPR simulations provided so that they can become bystanders.

The results of this research showed that there was an effect of CPR simulations on the knowledge of Youth Organization's members in Candibinangun Village in rescuing cardiac arrest victims, indicated by the Wilcoxon Signed Ranks test result obtaining an Assymp Sig (2-Tailed) of 0.001 ( $< \alpha = 0,05$ ). The results of this research support Hadid and Suleiman (2012) finding that there is a significant effect of CPR simulations on the increase in knowledge of rescuing cardiac arrest victims. The factor influencing the success in increasing knowledge in this research was the use of peer group method in delivering the material. This peer group method was effective because the number of group members was only 4-5 people, making it easier for the respondents to repeat the material received. The result indicates a positive impact because, with the provision of better knowledge, the members of the Youth Organization have greater potential to become bystanders in rescuing cardiac arrest victims. AHA (2015) exhibits that CPR action on cardiac arrest victims is an important determinant in the survival of cardiac arrest victims. Therefore increasing the number of CPR bystander is necessary for the community. Therefore, the Youth Organization members have the potential to become a trained bystander. The limitation of this study is the small number of respondents. The respondents were expected to disseminate the knowledge of CPR in other Youth Organization to increase the number of a trained bystander.

This research also found that there was an effect of CPR simulations on the attitudes of Youth Organization's members in Candibinangun Village in rescuing cardiac arrest victim, identified from the Wilcoxon Signed Ranks test result obtaining an Assymp Sig (2-Tailed) of 0.009 ( $< \alpha = 0,05$ ). This result is linear with the results of the study by Ngirarung, Mulyadi & Marara (2017) on students of State Senior High School 9 Binsu Manado showing that CPR simulations influence student attitudes, indicated by the increasing level of motivation to rescue cardiac arrest victims in the school. The attitude variable is lacking in industrial revolution 4.0 era youth. The scale of national identity

decreases as the youth are addicted to the internet. The results of the pre-test exhibit that Youth Organization members exhibited lacking attitude in helping victims of cardiac arrest. This may become a warning in monitoring and supporting youth behavior. It is necessary to foster the youth to think and act not only for personal interests but also towards the surrounding environment. However, after CPR simulation, the attitude value increased. This is indicated from the results of the post-test. The “good” attitude value was 73.3% and the “adequate” attitude value was 26.7%.

In addition to knowledge and attitudes, the results of this research also found an effect of CPR simulations on the skills of Youth Organization’s members in Candibinangun Village in rescuing cardiac arrest victims, identified from the Wilcoxon Signed Ranks test result obtaining an Assymp Sig (2-Tailed) of 0.001 ( $< \alpha = 0,05$ ). This result strengthens the results of the study by Hadid and Suleiman (2012) which involved nursing students as the research object. Their study suggests that CPR simulations have a significant effect on increasing knowledge and skills. However, the results of this research prove that youth who even do not have formal education in the health sector are also able to rescue cardiac arrest victims although it cannot be categorized as a competent and professional rescuer. However, researchers were aware that there were obstacles encountered. Huang et al (2018) stated that the obstacle for prospective bystander not to perform CPR when meeting a cardiac arrest victim is fear of legal consequences (44%) and fear of injuring patients (36.5%). Therefore the researcher recommended that the CPR simulation is included in the agenda of Youth Organization. It would encourage other Youth organization members to receive CPR socialization to help victims of cardiac arrest.

## 5. Conclusion

In conclusion, CPR simulations influence the knowledge, attitudes, and skills of Youth Organization’s members in Candibinangun Village, Pakem District, Sleman. Suggestion: CPR simulation is included *Karang Taruna* (Youth) Organization routine activity

## Acknowledgments

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