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THE EFFECT OF CARDIOPULMONARY RESUSCITATION (CPR) TRAINING ON KNOWLEDGE, ATTITUDES AND PRACTICES OF POOL GUARDS

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ABSTRACT

Introduction: CPR is a very vital implementation in cases of cardiac arrest. The occurrence of cardiac arrest is influenced by several factors one of cause is drowning. Pool lifeguard is one of the jobs that has the potential to find cases of cardiac arrest but the majority of them have never received CPR training. The purpose of this study was to determine the effect of pulmonary resuscitation (CPR) training on knowledge, attitudes and practices on the management of cardiac arrest. **Objective:** To determine the effect of pulmonary resuscitation (CPR) training on knowledge, attitudes and practices on the management of cardiac arrest. **Methods:** This study uses a pre-experimental design with one group pretest-posttest design. The sampling technique uses total sampling of 10 pools lifeguards of Metro swimming pool, Kepanjen. Research conducted in May 16-17 2019 at Kepanjen Metro Swimming Pool. The independent variable is Cardiopulmonary Resuscitation (CPR) training and the dependent variable is the knowledge, attitude, and practice of cardiac arrest management. **Results:** Statistical tests using the Wilcoxon Test with result variable knowledge p value = 0.002; attitude p value = 0.007; and practice p value = 0.004. All three variables show the effect of CPR training with increase in knowledge, attitudes and practices in pool guards. Limitation of this study is time for evaluation too fast, only one day away from research. **Conclusion:** Several things that influence the results of this study are information exposure, experience, education level, body mass index (BMI), and gender. It is hoped that pool lifeguard can apply first-aid cardiopulmonary resuscitation (CPR) to drowning victims

ABSTRAK

***Latar belakang:** RJP merupakan pelaksanaan yang sangat vital dalam kasus henti jantung. Petugas kolam renang yang merupakan salah satu pekerjaan yang berpotensi menemukan kasus henti jantung tetapi mayoritas petugas kolam renang belum pernah mendapatkan pelatihan RJP. **Tujuan** dari penelitian ini adalah untuk mengetahui pengaruh pelatihan resusitasi jantung paru (RJP) terhadap pengetahuan, sikap dan praktek pada penanganan henti jantung. **Desain :** Penelitian ini menggunakan desain pre-experiment dengan one group pretest-postest design. Teknik sampling menggunakan total sampling sejumlah 10 petugas kolam renang Metro Kepanjen. Waktu dan tempat penelitian adalah tanggal 16-17 Mei 2019 di Kolam Renang Metro Kepanjen. Variabel Penelitian independen adalah pelatihan resusitasi jantung paru (RJP) dan variabel dependen adalah pengetahuan, sikap, serta praktek penanganan henti jantung. **Hasil :** Uji statistik menggunakan Uji Wilcoxon variabel pengetahuan p value = 0,002; sikap p value = 0,007; dan praktek p value = 0,004. Ketiga variabel menunjukkan pengaruh pelatihan RJP dengan peningkatan pengetahuan, sikap dan praktek pada petugas kolam renang. **Diskusi :** Beberapa hal yang mempengaruhi hasil penelitian ini paparan informasi, pengalaman, tingkat pendidikan, indeks massa tubuh (IMT) dan juga jenis kelamin. Diharapkan petugas kolam renang dapat menerapkan pertolongan pertama resusitasi jantung paru (RJP) pada korban tenggelam yang mengalami henti jantung.*

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Introduction:

Cardiac arrest is a sudden loss of heart function, which can occur in someone who is diagnosed with heart disease or not. The time of the event is unpredictable, occurs very quickly once symptoms and signs appear (Cheng et al., 2018)

Emergency situations can be in the form of accidents such as motor vehicle accidents, electric shock, drug / food poisoning, heart attacks, drowning, blood loss and others. A heart attack is an emergency that can cause cardiac arrest and respiratory arrest (Jamil, 2010).

Based on research in European countries, cardiac arrest cases are one of the causes of death with an incidence of around 700,000 cases each year. According to research in the United States, heart disease is the number one killer. Every year nearly 330,000 Americans die suddenly of cardiac arrest (Berdowski et al., 2010; Josephson, 2014). For the number of patients with cardiac arrest in Indonesia each year around 10,000 residents. According to (Ferianto & Rini, 2016) data have been obtained as many as 57 cases of cardiac arrest in Malang and among them there were 6 victims who were caused by drowning.

Cardiac arrest requires immediate treatment, namely cardiopulmonary resuscitation (CPR). CPR is a series of life-saving attempts at cardiac arrest (Jamil, 2010). Although the approach taken can vary, depending on the savior, the victim and the circumstances, a fundamental challenge remains, namely how to do an earlier, faster and more effective CPR (Cheng et al., 2018). Even layperson and trained people in the health field can take CPR actions (Josephson, 2014).

From the results of a preliminary study conducted in September 2018 in the Kepanjen Metro swimming pool. Data obtained from interviews with the chairman of the Kepanjen Metro swimming pool, there were 10 swimming pool guard. And for ± 2 years there were 2 victims drowned. The victim was rescued from the bottom of the pool and immediately taken to the hospital but when he arrived at the hospital the victim was not helped. One of the cause is poolguards are less exposed to information about how the first aid for drowning victims such as CPR training.

Efforts to reduce the number of deaths due to cardiac arrest due to drowning need appropriate management. Until now CPR is a very vital management in cases of cardiac arrest due to drowning but not only because of drowning it could be due to heart disease or other events. Cardiac events can occur anywhere, and therefore information on CPR training must be disclosed. Knowledge, attitudes, and practices about CPR are very important for swimming pool guards because visitors will depend on them if anything happens at the pool.

Based on the above background, researchers are interested in conducting research under the title "Effects of Pulmonary Resuscitation (CPR) Training on Knowledge, Attitudes and Practices of Cardiac Arrest Management".

Methods:

The method used in this study is the Pre-Experiment method and use One Groups Pretest-Posttest Design, which is a research design that has a pretest before being treated and posttest after being treated. Thus it can be known more accurately, because it can be compared with held before being given treatment. Data collection using the questionnaire instrument as a primary data collection tool, quantitative data analysis with the aim of studying the hypotheses that have been set

Table 1.1 Research Framework

Pretest	Treatment	Posttest
A_1	X	A_2
B_1	X	B_2
C_1	X	C_2

The sample in this study were all swimming pool guards as many as 10 people. The study was conducted by conducting a pretest of the knowledge, attitudes and practical abilities of CPR on pool guards and then conducted CPR training using the explanation, demonstration and workshop methods with respondents trying to do CPR one by one. The following day a posttest

was conducted related to CPR's knowledge, attitude and practice ability.

Results:

Metro Swimming pool is located near Metro river in Kepanjen, Malang, East Java, Indonesia. The water comes from a spring so that it feels fresher and is not mixed with purifying agents like most other swimming pools. The number of employees / poolguards in this swimming pool is 10 people, average of visitors in every week is about ± 150 people. Existing facilities in this swimming pool consist of a children's pool and adult pool, fitting/canging room, lifevest rental, swimsuit rental, and a cafetaria. The entrance fee for the pool is Rp. 7,000.

The research data showed that most respondents were male with 9 respondents (90%). Most respondents aged 46-65 years with a total of 6 respondents (60%). Most respondents have a high school education with a total of 6 respondents (60%). Most of the respondent's body mass index (BMI) is normal (18.5-22.9) with 8 respondents (80%). Most respondents had never received information about CPR with 9 respondents (90%). Most respondents had never had experience about CPR with 9 respondents (90%). Recapitulation as shown in the table below:

Table 1.2 Responden Characteristic

Component	F	%	Component	F	%
Gender			**Body Mass Index (BMI)**		
Male	9	90	Obesity 27,5>	1	10
Female	1	10	Over weight 23-27,4	2	20
Age			Normal 18,5-22,9	8	80
12-25 yo	0	0	**Exposed Information**		
26-45 yo	4	40	Ever exposed	1	10
46-65 yo	6	60	Never been exposed	9	90
Educational Level			**Case Experience**		
Elementary School	2	20	Experienced	1	10
Junior High School	1	10	Inexperienced	9	90
Senior High School	6	60			
Bachelor	1	10			

Overview of Pretest and Posttest

The results of the study pretest and posttest are shown in the table 1.3

Based on table 1.3 the PRETEST results obtained by respondents, for the knowledge variable mostly in the category of Less with a total of 9 people (90%), while the attitude of most respondents in the positive category with a total of 7 people (70%), and the Practice variable mostly in the category of Less a total of 8 people (80%). Whereas the results of POSTEST respondents, for the knowledge variable, most were in the Good category with a total of 8 people (80%), while the attitude of the majority of respondents was in the positive category with a total of 6 people (60%), and the Practice variable was mostly in the category of inadequate 8 people (80%). There is a difference in the knowledge variable where there is a significant increase in the Good category which initially (pretest) 0% after training (posttest) increases to 80%. In the attitude variable there is a decrease in the positive attitude variable which initially (pretest) by 70% in the posttest instead decreases to 60%. While in practice there was also a significant increase in the Good category which initially (pretest) 0% also increased to 80% after the training (posttest).

Table 1.3 Pre-Posttest Result

Variable	Kategori	Pre Test		Post Test	
		f	%	f	%
Knowledges	Good	0	0	8	80
	Enough	1	10	2	20
	Less	9	90	0	0
Attitudes	Positive	7	70	6	60
	Negative	3	30	4	40
Practices	Good	0	0	8	80
	Enough	2	20	2	20
	Less	8	80	0	0

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The Effects of CPR Training on Knowledge, Attitudes and Practices Effects of CPR Training on Knowledge

Variable	Category	Pre Test		Post Test		P-Value
		f	(%)	f	(%)	
Knowledges	Good	0	0	8	80	Wilcoxon Z= -3,051[b] p=0,002*
	Enough	1	10	2	20	
	Less	9	90	0	0	
Attitudes	Positive	7	70	6	60	Wilcoxon Z : -2.701[b] p = .007*
	Negative	3	30	4	40	
Practices	Good	0	0	8	80	Wilcoxon Z : -2,889[b] p = .004*
	Enough	2	20	2	20	
	Less	8	80	0	0	

From the results of research on the effect of CPR training on knowledge using the Wilcoxon test with an error rate of 5% and a p value of 0.002 (<0.05) so that H1 is accepted and H0 is rejected, meaning that there is an influence of pulmonary resuscitation training (CPR) on the knowledge of the management of cardiac arrest in drowning victims in the Metro swimming pool Kepanjen.

Knowledge is the result of knowing, and this happens after someone senses a certain object. Sensing occurs through the human senses, namely the sense of sight, hearing, nourishment, taste, and touch. Based on the results of research conducted by researchers According to (Bertens, 2014) there are several factors that influence a person's knowledge in carrying out an action include: experience and information. From the two factors above the researchers found the results obtained from the study that is the experience that is very influential on the existing knowledge of respondents. So the researchers felt that pulmonary resuscitation training (CPR) would be very useful if given to respondents.

In this study, data was obtained whether or not the Metro Kepanjen swimming pool officer gained experience about pulmonary resuscitation (CPR), the majority of respondents as much as 90% had never had experience about pulmonary resuscitation (CPR).

One of the advantages of training methods and the provision of this module is that it can increase the knowledge of trainees through the process of thinking critically about a problem presented in the training process (Sahu & Lata, 2010). The problems given in the training process will also help to make participants conduct problem analysis that will lead to an increase in the value of knowledge possessed by participants (Tivener et al., 2015).

The use of learning modules about CPR also influences the training process. The lecture process, assisted by the learning and demonstration modules, will have an influence on increasing knowledge about CPR actions on respondents. The statement was also reinforced by research that CPR training conducted with the help of instructors and learning modules would provide increased knowledge about CPR (Chapman et al., 2011). This study further explains that the use of modules has practical value as a learning guide that can be used by trainees in conducting the learning process about CPR. So, based on the results explained above it can be seen that the CPR training conducted can have a significant influence on increasing knowledge about CPR actions.

In data collection, the study was conducted in two days. Researchers conducted a pretest with a questionnaire of 20 questions and gave modules to respondents, then researchers gave CPR training (pulmonary resuscitation) in the form of demonstrations first then respondents did what was demonstrated and gave modules to respondents. After a pretest and given CPR (pulmonary heart resuscitation) training, the researchers gave a questionnaire of 20 questions in the form of a posttest.

The results of this study indicate that pulmonary resuscitation training (CPR) provided with a simple and practical demonstration process is easier to remember and do by respondents. CPR training given directly to respondents is easier to catch and remember by respondents then easy to implement. Therefore the researcher concludes that in this study it can be stated that there is an influence of pulmonary resuscitation training (CPR) on the knowledge of the handling of drowning cardiac

arrest in the Metro Kepanjen swimming pool guards and there is an increase in knowledge before and after being given training.

Effects of CPR Training on Attitudes

From the results of statiscal test in the effect of CPR training on the attitude using Wilcoxon Test showed p value of 0.007 (p<0.05) which mean there is an influence of CPR training on the attitude of swimming pool staff on cardiac arrest in Metro Swimming Pool Kepanjen.

CPR training provides guidance in the form of steps to perform CPR which includes assessing the location of the incident, assessing the level of awareness, activating emergency or emergency medical service, positioning the victim, checking the carotid artery, compressing the chest, opening the airway and then providing breathing assistance and when the CPR should be stopped.

Attitude is a form of evaluation or reaction to an object, impartial or impartial which is a certain order in terms of feelings (affection), thoughts (cognition), and predisposition to one's actions on an aspect of the surrounding environment (Azwar, 2007). Attitudes are not carried from birth but are formed or studied throughout the development in relation to their objects and can be influenced by personal experience (Gerungan, 2009; Merisdawati et al., 2015). Personal experience that has been gained by a pool attendant can generally form an attitude, the personal experience of a pool attendant in meeting a victim who has a cardiac arrest usually leaves a strong impression so that the pool attendant's attitude will be more easily formed

Age affects the person's comprehension and mindset, the more sufficient age, the level of maturity and strength of a person will be more mature in thinking and acting. Age is also related to the maturity of the mind in accepting and responding to something, as a person ages the maturity of the mind also grows stronger so as to foster a good attitude in a person. Basically, the more people age, the more experience they have. In this research he majority of respondents aged 26-45 were 6 people (60%) and almost half were aged 46-65 as many as 4 people (40%).

A person's attitude can change if the individual accepts the influence and is willing to comply with that influence because the attitude is in accordance with what he believes and in accordance with the system of values adopted (Azwar, 2007). CPR can be performed by someone who is trained in the health or lay people. Through CPR training, pool guards are expected to perform CPR actions correctly (Susanto, 2009). Pool guards are given CPR training on how to behave and act correctly when they find visitors who are unconscious or get cardiac arrest. It is very important to train and improve the ability of CPR in pool guards because it will improve the attitude in handling cardiac arrest especially in Metro Pool Guards Kepanjen, in order to increase awareness in dealing with emergency conditions, especially cardiac arrest

Effects of CPR Training on Practices

From the results of statiscal test in the effect of CPR training on the practices using Wilcoxon test showed p value 0.004 (<0.05), which means there is an influence of CPR training on the practices in Metro Swimming pool guards.

Body Mass Index (BMI) has a strong relationship with physical fitness, BMI has a strong relationship with physical fitness. BMI has more negative correlation with cardiorespiratory endurance status, the higher the BMI, the lower the level of cardiorespiratory endurance compared to normal BMI (Wahid, 2017). Decreased cardiorespiratory endurance can cause individuals to quickly fatigue (Ardiansyah et al., 2019; Chapman et al., 2011; Jamil, 2010). In the study, respondents obtained data that had a normal BMI with a total of 8 people or 80%, overweight consist of 2 respondent or 20%, and an obese consist of 1 person or 10 %. BMI of the respondent will greatly affect in performing CPR to drowning victims because the heavier the BMI of helper the easier it is to apply pressure in CPR.

Discussion:

The role of nurses in providing education related to CPR to lay people needs to be improved. Pool guards are one of the community aggregates who are rarely touched by intervention, at the same time they are a

group that has the potential to face cases of cardiac arrest in the field. Provision of education in the aggregate group must use methods suitable to respondents, in this study 90% of respondents had middle to low education level.

STUDY LIMITATIONS

The limitation in this study is that the evaluation time is too short, which is only 1 day adrift from the provision of training, so it does not fully describe the actual conditions of knowledge, attitudes and practices of pool guards in Metro Swimming Pool Kepanjen. In addition, the number of respondents in this study is also relatively small

Conclusion:

Statistical tests using the Wilcoxon Test with result variable knowledge p value = 0.002; attitude p value = 0.007; and practice p value = 0.004. All three variables show the effect of CPR training with increase in knowledge, attitudes and practices in pool guards. Limitation of this study is time for evaluation too fast, only one day away from research.

Several things that influence the results of this study are information exposure, experience, education level, body mass index (BMI), and gender. It is hoped that pool lifeguard can apply first-aid cardiopulmonary resuscitation (CPR) to drowning victims

It is hoped that the results of this study can be the basis for further research related to CPR training in places with special characteristics such as swimming pools, vacation place with natural attractions and so on. And the research design need to be developed using the time series method to see the residual and memory of knowledge, attitudes and practice from the training that has been given

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