



## **THE EFFECT OF TIME RESPONSE TO THE ACCURACY OF ACTIVITIES OF CARDIAC ARREST PATIENTS EMERGENCY**

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<b><i>ABSTRACT</i></b>	<b><i>Keywords</i></b>
<p>Cardiac arrest is still the leading cause of death in the world. Despite progress in the management of cardiovascular emergencies, their survival rates with cardiac arrest outside the hospital remain low. Five of the 1000 patients treated in hospitals in several developing countries are estimated to have a cardiac arrest and less than 20% of these patients are unable to survive until discharged from the hospital. If the slow response time will have an impact on the patient's condition such as damage to internal organs or complications, disability, and even death, and if the response time is fast then it will have a positive impact, namely reducing the burden of funding, complications do not occur and reduced mortality and morbidity. The purpose of this study was to determine the relationship of response time with the accuracy of emergency actions in cardiac arrest patients. The design in this study was an analytical correlation using a cross-sectional approach. The population in this study were all nurses in the IGD and ICU in Sakinah Mojokerto Hospital and Hasanah Mojokerto Hospital in 52 nurses. The sampling technique used is total sampling. The instrument used was a stopwatch and SOP observation sheet for handling Cardiac arrest patients. The results showed that most nurses had response time <math>\leq 5</math> minutes as many as 35 respondents (67.3%) and the accuracy of emergency actions in cardiac arrest patients according to SOP were 40 respondents (76, 9%). Delay in response time in the handling of patients in the emergency room can be prevented by prioritizing patient emergencies quickly and precisely, in accordance with established standards.</p>	<p><b><i>Response Time, Cardiac Arrest, Cardio Pulmonary Resuscitation (CPR)</i></b></p>

## PRELIMINARY

Cardiac arrest is still the leading cause of death in the world. Despite progress in the management of cardiovascular emergencies, their survival rates with cardiac arrest outside the hospital remain low (Hazinski et al., 2015). Guidelines for cardiac pulmonary resuscitation and cardiovascular emergency although updated, the approach to the condition of cardiac arrest outside the hospital is still far from optimal (Mulia, B., & Siswanto, 2011).

Cardiac arrest can occur in various circumstances. Patients can be in the hospital or outside the hospital, there may be trained or absent medical personnel, and available facilities range from none to cardiopulmonary bypass. Five out of 1000 patients treated in hospitals in some developing countries are estimated to experience cardiac arrest and less than 20% of these patients are unable to survive until discharged from hospital (Goldberger, Z. D., Chan, P. S., Berg, R. A., 2012).

Cardiac arrest is a sudden and sudden loss of heart function, can occur in someone who is diagnosed with heart disease or not. When the event can not be predicted, occurs very quickly once symptoms and signs appear (American Heart Association, 2010). If the slow response time will have an impact on the patient's condition such as damage to internal organs or complications, disability, and even death, and if the response time is fast, it will have a positive impact, namely reducing the burden of funding, complications do not occur and reduced mortality and morbidity

(Kemenkes RI, 2014). The cause of the delay in response time in the handling of patients in the emergency room can be prevented by prioritizing the patient's emergency quickly and precisely, in accordance with the established standards of at least 5 minutes so that there is no long waiting time, complications, disability and even death (Kartikawati, 2013).

The prevalence of response time to cardiac arrest management is increased because nurses' response time is less fast and precise. Based on WHO data in 2014, the prevalence

of cardiac arrest in Indonesia is around 37%. According to a study conducted by the Centers for Disease Control and Prevention, from October 1, 2005, to December 31, 2010, there were 40,274 people with Out-Hospital Cardiac Arrest (OHCA), or cardiac arrest events outside the hospital, which were recorded in CARES (Cardiac) Arrest Registry to Enhance Survival)

(Jones, Janice, 2009).

The results showed the average age of patients with cardiac arrest was 64 years (Standard deviation 18.2), 61% (19,360) OHCA patients were male, 21.6% of patients died after receiving resuscitation, 26.3% were successfully rushed to hospitals and only 9.6% managed to survive until discharged from the hospital. As many as 36.7% of people with OHCA are known by a bystander. Only 33.3% of these patients received CPR from the bystander, 3.7% also received defibrillator treatment (AED) from the bystander before the arrival of the emergency officer. The group that is more able to survive is what is known by a bystander and because of abnormalities or disorders of the heart rhythm. In general, patients who obtained CPR from bystanders had a higher chance of survival (11%) than those who did not get CPR before medical staff arrived (7%).

Based on data at Sakinah Hospital Mojokertodari in January - October 2018 emergency patients with cardiac arrest as many as 106 patients and as many as 52 people died. The results of observations on 2 nurses of the emergency room and ICU obtained data of 1 person (50%) slow response time with a response time of 6 minutes and 1 person (50%) fast response time with a response time of fewer than 5 minutes. The most common cause of cardiac arrest is ventricular fibrillation, an AV block that usually causes very low heart rhythms. This is a condition where delivery or electrical conditions in the stimulation of the heart to the heart chambers are slowed or disrupted (Chung, 2010). As a result, when the heart stops beating, no blood flow will flow. If there is no blood flow, oxygen cannot flow throughout the body. When the heart stops, the patient is said to have cardiac

arrest(Aehlert, 2010). Cardiopulmonary arrest causes the loss of certain observational functions, namely, awareness (unconscious state), pulse (no heartbeat), breathing (no breathing), heart tones (no heart sounds), and blood pressure (Chung, 2010).

The success of CPR is certainly influenced by the competence and training of health workers. Health workers in hospitals, especially doctors, nurses, and midwives must have the qualifications to provide CPR health services (Permenkes, 2012). Pratondo dan Oktavianus (2010) revealed that the success of CPR in handling cardiac arrest cases was influenced by several factors, such as the availability of tools, nurse competence, post-resuscitation treatment, collaboration with doctors, CPR guidelines and response time. To improve the skills of knowledge about handling Cardiac Arrest requires training, seminars, information or up to date knowledge.

## RESEARCH METHODS

The study design used analytic correlation using a cross-sectional approach (Nursalam, 2013). The population in this study were all nurses in the IGD and ICU at Sakinah Mojokerto Hospital and Hasanah Mojokerto Hospital. The sample of this study took samples from all the IGD nurses and ICU of RSI Sakinah Mojokerto and RSI Hasanah Mojokerto totaling 52 respondents. By using a total sampling technique. The independent variable of this study is the Response Time on the actions of Cardiac Arrest management and the dependent variable is the accuracy of the action using SOP for handling cardiac arrest patients.

The instrument used in this study was two stopwatches to measure the speed of response time and recorded it on an observation sheet while the accuracy of taking action using SOPs for handling cardiac arrest patients. The data collection process was carried out at the IGD and ICU RSI Sakinah Mojokerto for 6 weeks, and at the IGD and ICU RSI Hasanah Mojokerto for 4 weeks, 52 respondents were received.

Researchers began to measure response time in cardiac arrest patients both in the emergency room and ICU using a stopwatch and observe the accuracy, speed, subsequent ability to perform observes related handling of cardiac arrest patients using SOP, then the data collected and analyzed are presented in the form of a frequency distribution.

## RESEARCH RESULT

The study was conducted in January - June 2019 at the RSI Sakinah Mojokerto and RSI Hasanah Mojokerto obtained the following results:

Table 1: Frequency distribution of respondents to nurses at Sakinah Hospital and Hasanah Mojokerto Hospital in January - June 2019

Date General	Ket	F	%
Gender	Man	24	46.2
	Women	28	53.8
years of service	1-5 year	30	57.7
	>5 year	22	42.3
Age	20-35 year	27	52
	>35 year	25	48
Education	S1 kep	32	61.5
	D cup	20	38.5
Training	BTCLS	52	100

According to table 1 it is known that the majority of respondents were female respondents were 28 respondents (53.8%) and the male gender was 24 respondents (46.2%). The majority of respondents with work age > 5 years were 30 respondents (57.7%) and 1-5 years old employed 22 respondents (42.3%) .The majority of respondents aged 20-35 were 27 respondents (52% ) and those aged > 35 were 25 respondents (48%). The majority of S1-educated respondents were 32 respondents (61.5%) and D3-educated were 20 respondents (38.5%). All respondents had BTCLS training of 52 respondents (100%).

Table 2: Frequency distribution of respondents based on-time response to cardiac arrest patients at Sakinah RSI and Hasanah Mojokerto RSI between January - June 2019

special data	Ket	F	%
Response time	≤ 5 minute	35	67.3
	>5 minute	17	32.7
Accuracy	accrdance SOP	40	76.9
	not in accordance	12	23.1

Based on table 2 it can be seen that the majority of respondents with response time ≤5 minutes are 35 respondents (67.3%) and the response time > 5 minutes is 17 respondents (32.7%). Accuracy in handling cardiac arrest patients who are in accordance with SOP 40 respondents (76.9%) and those who do not comply with SOP are 12 respondents (23.1%)

## DISCUSSION

Response Time is the speed in handling patients, calculated from the time the patient arrived until treatment (Suhartati et al, 2011). Good response time for patients is ≤5 minutes (Decree of the Minister of Health of the Republic of Indonesia, 2009). The faster response time for nurses will have a positive impact that can reduce the burden of funding, no complications occur, decreasing morbidity and mortality rates due to the very high performance of nurses and fast in handling. If the nurse's response time is slow, it will have a negative impact, namely the extent of damage to internal organs with intent will occur complications, disability and even death(Stillwell, 2011) Basic Trauma Cardiac Life Support (BTC) is an action to provide assistance to disaster victims or the emergency department to prevent death or damage to organs so that productivity can be maintained equally before a disaster or emergency event

occurs(Nettina, 2010). Training / BTCLS program that helps the skills and knowledge of health nurses in responding to emergency events. At this time it is not uncommon that nurses get from the training that cannot be properly practiced because they are not supported by existing infrastructure or the environment.

Women tend to be slower in response times to emergencies than men. Men move faster whereas women tend to be gentle. Men, in general, can make decisions without being affected by emotions while most women generally consider other factors than men(Mansour Fakh, 2010). Women are generally associated with certain characteristics such as emotional and need help from others so that sometimes the response time is not as fast as men and women tend to be complicated, the way is not as fast as men, the way of thinking is also not as fast as men and women when there are unconscious or critical patients. emergency nervous in taking action. (Basbeth, F., & Sampurna, 2009).

Length of work is the process of forming knowledge or skills about the method of a job due to the involvement of the individual/officer in the implementation of work tasks, so that long working hours can improve techniques and methods of work so that they can have a lot of experience related to emergency problems or cases that occur which is very influential on the response time of officers/workers (Datin, 2014). The higher one's experience, the higher the level of individual knowledge. The work period is also a matter that can affect knowledge and skills because someone who has a long working period will automatically form adequate work experience and create effective work patterns and can solve various problems based on experience, skills, and knowledge.

In theory (Notoatmodjo, 2012) says that age influences one's comprehension and mindset, the more you age, the more your comprehension and mindset will develop so that the knowledge obtained is better. Individual maturity can be seen objectively directly with the age period, so that various processes of experience, knowledge, skills,

independence associated with increasing with increasing individual age, older age, will tend to have more experience in dealing with problems. The level of maturity in thinking and behaving is influenced by the experience of daily life, this shows that the longer the work period the higher the level of maturity of a person in thinking so as to further enhance the knowledge he has.

According to (Udjianti, 2010) although graduates of the Diploma-III program are also referred to as beginner professional nurses who already have sufficient professional attitude to master nursing and professional skills that include technical, intellectual and interpersonal skills that are expected to be able to carry out professional nursing care based on standards nursing care and nursing ethics, but nursing education must be developed in higher education so as to produce graduates who have the attitude, knowledge, and professional skills in order to carry out their roles and functions as professional nurses accompanied by Basic Live Support training. (Sudiharto, 2011)

Nurse response time is the speed or response time of the service that is fast (responsive), calculated from the time the patient arrives until treatment is performed. Service response time is a combination of response time when the patient arrives at the hospital door until he gets a response or response from the emergency department officer whose service time is the time required by the patient to finish (Suhartati et al, 2011). Both are type C but the response time at RSI Sakinah is faster than RSI Hasanah.

Researchers argue that nurses are very responsive to patients. Visible response time (response time) to the patient 0 minutes, when the patient arrived at the emergency department. Nurses in the emergency department must be calm but dexterous and think before acting, make a quick and careful assessment of life-threatening issues besides nurses to improve the performance and knowledge of nurses about emergency nursing need to be held about renewal of emergency care and emergency follow-up training, follow BTCL certification, seminar emergency, train emergency skills internally

and evaluate activities to improve attitudes in handling victims.

## CONCLUSION

The response time for emergency cardiac arrest patients at Sakinah Mojokerto Hospital and Hasanah Mojokerto Hospital was mostly  $\leq 5$  minutes. Handling of emergency cardiac arrest was successfully carried out by nurses at Sakinah Hospital and Hasanah Mojokerto Hospital. Good response time for patients is  $\leq 5$  minutes, if it passes then it can result in the patient's life in danger and can even cause death. From the results of the 6-month study at RSI Sakinah and RSI Hasanah found 52 respondents with the majority of response time  $\leq 5$  minutes and most of the accuracy in accordance with the SOP for handling cardiac arrest patients, so it can be concluded that 90% of the handling of cardiac arrest emergencies work well done by nurses at RSI Sakinah and RSI Hasanah Mojokerto. The faster the nurses make the response time it is hoped that the more appropriate in carrying out emergency actions on cardiac arrest

## SUGGESTION

### 1. For Health Workers

Suggestions to the nursing profession in order to maintain the existing response time so as to improve nursing services

### 2. For Further Researchers

Basic data in research relevant to the title of this study and extended by adding other factors that can affect response time in emergency actions.

### 3. For Hospitals

Conduct training to refresh the knowledge of health workers in the hospital about emergency treatment, to remind the facilities and infrastructure in the hospital to support the work of nurses in managing emergencies To increase the number of nurses during shifts so that nurses can maximize the performance of nurses in dealing with emergencies

### 4. For Educational Institutions

To add insight and knowledge of students about response time in the handling of cardiac arrest emergencies

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