

# Necessity Analysis Of Basic Life Support Competency Improvement On The Out Of Hospital Cardiac Arrest Patients For The Employees Of Disaster Prevention And Mitigation Service In Middle Halmahera, North Maluku

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## ABSTRACT

Emergency situation is a sudden incident which require an immediately action. Out-of-hospital cardiac arrest (OHCA) is one of health problem in the world which is caused by the emergency situation. Survival rate of the victims depends on how well trained the medical personnel about basic life support (BLS) while treating OHCA patients. The purpose of this study was analyzed the necessity of BLS competency improvement on the OHCA patients for the employees of Disaster Prevention and Mitigation Service in Middle Halmahera Regency. This study was a quantitative research with cross sectional study method. The samples were 30 active employees of Disaster Prevention and Mitigation Service in Middle Halmahera Regency. The result showed 43,3% employees had poor BLS competency, only 23,3% employees had a good BLS competency. Chi Square analysis result showed there was a significant correlation ( $p=0,000$ ) between the necessity of BLS improvement training and BLS competency on the OHCA patients. BLS competency is a basic knowledge for public service employee especially in Disaster Prevention and Mitigation Service. The employees in Disaster Prevention and Mitigation Service in Middle Halmehara Regency had a poor BLS competency, so BLS improvement training is needed.

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## 1. Introduction

Emergency situation is a sudden incident which require an immediately action. It can be caused by epidemic situation, natural disaster, technology disaster, conflict, or human error. It also can happen everywhere and affect everyone<sup>1</sup>. Emergency situation may caused by trauma or non trauma which lead to respiratory failure, cardiac arrest, organ failure, or bleeding. It mostly occurred very fast and no one can predict it<sup>2</sup>.

The number of patients with cardiac arrest is increasing from time to time. More than 50% cases were happened out side the hospital. It is known as out of hospital cardiac arrest (OHCA) situation. OHCA is one of major medical problem in the world. As much as 55 out of 100.000 adult people every year are in OHCA situation<sup>3</sup>. Data from The American Heart Association (AHA) showed atleast 2 million death in the world were caused by cardiac arrest. Cardiac arrest is the 3<sup>rd</sup> cause of mortality in Japan, Singapore, and Malaysia. In Indonesia cardiac arrest also is one of the cause of mortality. Many people in Indonesia was dead because of cardiac arrest<sup>4</sup>.

Basic life support (BLS) is a main support to help people with sudden cardiac arrest. BLS consists of identification of cardiac arrest and activation of Integrated Emergency Support Services, imediate cardiac arrest resuscitation and heart defibrillation using automated external defibrillator (AED). In an emergency situation, BLS is the first treatment to save a life and avoid disablement before the victims is transported to health center or hospital<sup>11</sup>. BLS is a basic knowledge for all people and not only for medical worker<sup>12</sup>. But, people who work in Public Sevices such as firefighter, lifeguard, flight attendant, police officer, army, security guard, emergency medical technician, etc most likely to have BLS certificate.

The employees of Disaster Prevention and Mitigation Service is one of non medical worker who must have a good knowledge and skill about BLS. Their competency in BLS needs to be improved and polished regulary. Base on that, the necessity analysis of BLS competency improvement on the OHCA patients for the employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku needs to be done. This study was directed to evaluate

BLS competency of the employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku. The result will become the basic data to organize BLS training and education among the employees.

## 2. Method

This research was a quantitative study with cross sectional design. Sample was the employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku who were still active and qualified base on the inclusion condition. Total sample was 30 employees. It was determined using purposive sampling method.

Data was collected by interview and direct observation. Questioned was used as the instrument. Data analyzed using univariate and chi square analysis. Data analysis had been done using SPSS software.

## 3. Result

Data collected from the sample was consisted of gender, age, education, the competency of BLS, and the necessity of skill and knowledge improvement. Characteristics sampel such as gender, age, education, and BLS competency could be seen on table 1.

TABLE 1.  
THE CHARACTERISTIC OF THE EMPLOYEES OF DISASTER PREVENTION AND MITIGATION SERVICE IN MIDDLE HALMAHERA, NORTH MALUKU

Characteristic	Total (n)	%
<b>Gender</b>		
- Man	21	70,0
- Woman	9	30,0
Total	30	100,0
<b>Age</b>		
- 20-30 years	18	60,0
- 31-40 years	12	40,0
Total	30	100,0
<b>Education</b>		
- High school	5	16,7
- Bachelor degree	21	70,0
- Master degree	4	13,3
Total	30	100
<b>BLS Competency</b>		
- Excelent	7	23,3
- Moderate	10	10,3
- Poor	13	43,3
Total	30	100

Around 70% of the employees in Disaster Prevention and Mitigation Service, Middle Halmahera, North Maluku were man and the rest were woman. The employees were 60% in the age of 20-30 years and 40% were 31-40 years. As much as 70% employees already got their bachelor degree, 16,7% were high school graduate, and 13,3% got their master degree. BLS competency was analyzed and 43,3% employees had a poor competency in BLS. Only 23,3% employees had a good BLS competency. The rest of employees had moderate BLS competency.

TABLE 2.  
THE RELATION OF BLS COMPETENCY AND THE NECESSITY OF BLS COMPETENCY IMPROVEMENT

Competency	BLS Improvement Necessity						p
	Require		Not Require		Total		
	n	%	N	%	n	%	
Excelent	0	0,0	7	100,0	7	100	0,000
Moderate	9	90,0	1	10,0	10	100	
Poor	13	100,0	0	0,0	13	100	
Total	22	73,3	8	26,7	30	100	

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The correlation of BLS competency and the necessity of BLS competency improvement was showed in Table 2. The result showed 73,3% employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku needed to have BLS competency improvement. All the employees with excellent competency did not require improvement for now. As much as 90% of employees with moderate competency and all the employees with poor competency needed to have BLS skill and knowledge improvement. The result of chi-square analysis with Fisher exact test showed there was a significant correlation between BLS competency and the necessity of BLS competency improvement ( $p=0,000$ ).

## 4. Discussion

Previous study reported that knowledge and skill will affect competency and performance of the employees<sup>5</sup>. There are three main component to shape a specific competency. It consists of knowledge, skill, and individual behavior which is influenced by self concept, trait, and motive. Work performance is a function, built from motivation and ability to finish the job. Someone performance depends on the degree of willingness and level on the specific ability<sup>7</sup>. Competency is a specific smart action with full responsibility as the terms to be accepted by the public to do a specific work. Competency consists of knowledge, skill, and attitude to do the job according to standard<sup>8</sup>.

Effective training of BLS was proven affected the skill on emergency response<sup>6</sup>. Competency of the employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku can be increased by joining the training and re-education on BLS for OHCA patients. The employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku must have qualification as emergency helper according to National Standard Competency or Standar Kompetensi Kerja Nasional Indonesia (KKNI)<sup>9</sup>.

Education guidelines from European Resuscitation Council based on The 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations, give guidelines to improve the ability, knowledge, skill, and behavior about resuscitation for health professional worker, public service worker, and public. The aim of it is to increase the survival rate of OHCA patient while in the emergency situation<sup>10</sup>.

## 5. Conclusion

The majority of employees of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku had poor competency and required for re-training and re-education in Basic Life Support for OHCA patients. Mostly employees with moderate competency also still need re-training and re-education about BLS. Human resources unit of Disaster Prevention and Mitigation Service in Middle Halmahera, North Maluku must be organising re-training and re-education for its employees as soon as possible both in formal or informal way.

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