
THE EFFECT OF EMERGENCY TRAINING ON FARMERS' KNOWLEDGE IN THE MANAGEMENT OF DAILY EMERGENCIES

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ABSTRACT

Cardiac arrest and injury can occur any time and anywhere, including in work environments that have high-risk factors, such as in agricultural areas. Exposure to sunlight, sharp objects, and contact with hazardous materials put farmers at risk of daily emergencies. The purpose of this study was to find out the effect of emergency training on the management of daily emergencies. Interventions was provided cardiopulmonary resuscitation (CPR) training, injury management, and transportation techniques. This research used a quasi-experiment design with a pre-post test design without a control group. In this design, there was one intervention groups, samples obtained using simple random sampling techniques with a total of 33 respondents, analysis used the Mann Withey test. Mann-Withey statistic test results show increased knowledge of CPR get p value = 0.032, increased knowledge of injuries used p value = 0.002 and increased knowledge of transportation techniques used p value = 0.000 with $\alpha = 0,000$ then $p < \alpha$ means there is an influence of CPR training, injury management and transportation techniques on improving the ability of farmers in the management of daily emergencies. Emergency daily training in common people as first responders is very effective in reducing mortality and death from cardiac arrest and injury before being transferred to the hospital.

Keywords: Agricultural; Cardiopulmonary; Resuscitation; Injury.

ABSTRAK

Serangan jantung dan cedera dapat terjadi kapan saja dan di mana saja, termasuk di lingkungan kerja yang memiliki faktor berisiko tinggi, seperti di daerah pertanian. Paparan sinar matahari, benda tajam, dan kontak dengan bahan berbahaya membuat petani berisiko mengalami keadaan darurat sehari-hari. Tujuan dari penelitian ini adalah untuk mengetahui efek pelatihan darurat pada pengelolaan keadaan darurat sehari-hari. Intervensi yang diberikan adalah pelatihan resusitasi kardiopulmoner (CPR), manajemen cedera, dan teknik transportasi. Penelitian ini menggunakan desain kuasi-percobaan dengan

desain tes pra-posting tanpa kelompok kontrol. Dalam desain ini, ada satu kelompok kelompok intervensi, sampel yang diperoleh menggunakan teknik random sampling sederhana dengan total 33 responden, analisis menggunakan tes Mann Withey. Hasil tes statistik Mann-Withey menunjukkan peningkatan pengetahuan tentang CPR mendapatkan nilai $p = 0,032$, peningkatan pengetahuan tentang cedera mendapatkan nilai $p = 0,002$ dan peningkatan pengetahuan tentang teknik transportasi mendapatkan nilai $p = 0,000$ dengan $\alpha = 0.000$ maka $p < \alpha$ berarti ada pengaruh pelatihan CPR, manajemen cedera dan teknik transportasi untuk meningkatkan kemampuan petani dalam pengelolaan keadaan darurat sehari-hari. Pelatihan harian darurat pada orang biasa sebagai responden pertama sangat efektif dalam mengurangi kematian dan kematian akibat serangan jantung dan cedera sebelum dipindahkan ke rumah sakit.

Kata Kunci: *Pertanian; Resusitasi; Kardiopulmoner; Cedera.*

INTRODUCTION

Cardiac arrest and injury can occur anytime and anywhere, including in work environments that have high-risk factors, such as in agricultural areas. Exposure to sunlight, sharp objects, and contact with hazardous materials puts farmers at risk of daily emergencies. Farmers, especially life stock farmers, are one type of work that is widely done by people living in the countryside. Farms that have the potential to be developed in Indonesia are cows and goats. Work accidents in farmers can be caused by the level of knowledge and motivation in the use of personal protective equipment (PPE) (Fibriansari, Maisyaroh, & Widiyanto, 2020). Farmers rarely use personal protective equipment. The bad habit of farmers only washing hands and the farmers do not take bath just after finishing their work causes farmers to experience complaints often feel nausea, dizziness, lightheaded eyes and headaches (Sugiarto, Entianopa, & Listiawaty, 2020).

The risk of emergency to farmers at work is still very high. One of the efforts to drain the risk of emergency is to increase knowledge and ability in providing emergency management, especially in agricultural areas (Fibriansari et al., 2020). Emergency events can be cardiac arrest or unconsciousness is a threat of death if the public has less information related to its management. Knowledge of Basic Life

Support (BLS) will greatly affect behavior about the provision of emergency management in victims that need to be done Cardio Pulmonary Resuscitation (CPR) (Kushayati, Murtiyani, & Suidah, 2020). Basic Life Support (BLS) is the right action given by health workers or laypeople who are trained as a procedure in the course of heart attack, respiratory failure, or airway obstruction. BLS performed by ordinary people can increase survival rates by 2 to 3 times (Stella et al., 2020). Every adult including farmers should have the ability and skills to provide BLS so that they can provide security assistance. Good knowledge of the community will help lower the death rate of out-of-hospital sudden cardiac arrest (Widiyanto, Maisyaroh, & Fibriansari, 2021).

The public also does not know much that there is a relationship between work and health status, that there is a close risk between the activities of various breeders and the environment and their health status. In addition, workplace injuries are accompanied by substantial morbidity and mortality and range from minor injuries to serious injuries (Maisyaroh, Widiyanto, & Fibriansari, 2019). Soft tissue injuries and fractures are common. The high rates of deaths and disabilities associated with injuries and the tremendous cost of medical care make increasing focus on prevention and effective ways to address these health problems and reduce health care costs.

Most livestock farming injuries are caused by complex root layers classified as errors in the security system. These results show that not only training and personal protective equipment, but also safety design regulations, mitigation devices, workplace inspection/maintenance, and other factors play an important role in preventing injury. Error identification will help farmers to easily implement effective prevention programs. Injury prevention education is an attractive option because it is relatively inexpensive and acceptable to farmers. The results of this study are expected to improve the ability of ordinary people as first helpers in the event of daily turmoil so that it will reduce the mortality and disability due to late help before being taken to the hospital.

MATERIALS AND METHODS

Study Setting and Population

The study used an experimental quasi design pre and post without control. This study uses a questionnaire as a measurement to improve knowledge the management of daily emergency. The questionnaire used is a about emergencies that have been tested for validity and reliability before.

The researchers took the first measurements on treated group participants

with pre-test. The researchers give treatment by providing training and assistance using simulation methode on pulmonary heart resuscitation, injury management, and transportation techniques then participants were re-measured with post-test.

The sampling technique is a simple random sampling technique consecutive sampling. Participants were randomly selected as many as 33 farmers from the building of The Insan Mandiri Foundation of Lumajang Regency in July-August 2021.

The data analysis used consists of 2 stages, namely univariate and bivariate. Univariate analysis techniques presented in the form of distribution tables. Meanwhile, bivariate analysis to measure the improvement in BLS ability was tested using Mann Whitney with a significant level of 5%.

RESULT AND DISCUSSION

Characteristics of Respondents

In this study, respondents are 33 farmers. The characteristics of respondents is almost all respondents of the male sex with the majority were in the age of 18-35 years and last education was junior high school as seen in table 1.

Table 1. Distribution of Respondent Characteristics (n=33)

Category		Frequency (n)	Percentage (%)
Gender	Male	30	90,9
	Female	3	9,1
Age (years)	18-35	16	48,5
	35-50	15	45,4
	> 50	2	6,1
The last education	Primary school	10	30,3
	Junior high school	16	48,5
	Senior High school	5	15,1
	Other	2	6,1

Farmer's knowledge of first aid on daily emergency

Farmer's knowledge of Cardiopulmonary Resuscitation (CPR), injuries, and emergency transport. There was an increase in knowledge of CPR of farmers before and after given training with a value of

0.032. The change is very significant in the knowledge of farmers in handling injuries with a value of p-value of 0.002. The difference is very visible in the knowledge of farmers in the transportation of patients before and after training with a value of p-value of 0.000 is shown in Table 2.

Table 2. Farmer's Knowledge of First Aid on Daily Emergency

Variable	Category			p-value Mann-Whitney
	Good	Enough	Less	
Knowledge of CPR				
Pre test	0 %	30,3 %	69,7 %	0,032
Post test	30,3 %	60,6 %	9,1%	
Knowledge of injuries				
Pre test	6,1 %	54,5 %	39,4 %	0,002
Post test	81,8 %	15,1 %	3,1 %	
Knowledge of emergency transportation				
Pre test	9,1 %	72,7 %	18,2 %	0,000
Post test	92%	8 %	0 %	

Characteristics of Respondents

The agricultural industry is one of the most dangerous sectors of employment in the world (Kim et al., 2018). The agricultural industry in the United States has the highest injury rate of 7.5 times that of other private industries (Patel, Watanabe-Galloway, Gofin, Haynatzki, & Rautiainen, 2017). According to (Faisal, Lodhi, Yaqoob, Pervaiz, & Irfan, 2015), Young men with an average age of 24.4 years were mostly involved in agricultural injuries. This is in line with the results of the study based on table I. The characteristic criteria of respondents are the average age of 18-35 years with the male sex.

Farmer's Knowledge in CPR

Health is a very important factor for labor productivity as a human resource. Jobs

that demand high work productivity can be done by workers with excellent health conditions. Productive work is done by working and in a health-qualified work environment so that there are no health problems, work fatigue or death (Arwina Bangun, Nababan, & Yuliana, 2019).

Sudden death from a heart attack can occur anywhere, both at home and in public places. This incidence is increasing due to inadequate first aid and a long time to reach the hospital. Exercise programs to improve basic life support knowledge and skills in common people are essential, it is linked to the survival of cardiac arrest patients outside the hospital who die during trips to the hospital. If a trained bystander can provide first aid and call the right ambulance then the death rate outside the hospital can be reduced (Qodir, 2020). The emergency

accident was so fast and sudden that no one could have predicted. Emergency services start from the pre-hospital phase, it starts when the community provides first aid or calls an emergency medical team. Followed by rescue and emergency medical care at the scene and during transport to the hospital. People who do not understand the provision of first aid will tend to provide minimal assistance without thinking about whether the action is right or not. Bystander CPR are confused just waiting for the arrival of rescue team (EMS) without doing anything. Therefore the needs of basic life support training with phantom media to the general public is getting more important (Putri, Safitri, Munir, & Endiyono, 2019).

The training process by simulation contributes to increasing knowledge about CPR actions in the community. One of the advantages of this method is that it can increase knowledge and improve participants' skills through the process of thinking critically about a problem presented in a simulation process that can carry out high-quality CPR steps systematically and appropriately (Yunanto, Wihastuti, & Rachmawati, 2017). Therefore, the results of this research show significant differences in the knowledge of farmers before and after training. Participants are allowed to demonstrate firsthand the CPR techniques and steps they have seen in phantom media.

Farmer's Knowledge in The Management of Injuries in Agricultural Areas

The results showed that there are significant differences in the knowledge of farmers before and after given training of management of injuries in agricultural areas. Injuries can be distinguished depending on the location and mechanism of injury. The most common cause of injury experienced is major injuries to amputations that can cause death. There is about one-third of the incidents of injuries that occur due to

agricultural machinery accidents (stuck, hit, trapped, and hit by a moving machine). Other causes of injuries that can occur in farmworkers include falls, being bitten by animals, being hit by sharp objects, being hit, and falling from a height (Grzegorz Kucaba et al., 2017).

The procedures undertaken to overcome this can refer to the management of the type of injury that is adjusted to the principle of first aid. Farmers who suffer injuries to the neck and spine may be given a Kendrick Extrication Device (K.E.D.), cervical collar, and spinal board. Another injury that can occur in farmers is the presence of arm fractures. Such cases need immobilization of the extremities and if there is wound bleeding the treatment is pressure dressing and tourniquet. Other cases of foreign objects on the foot can be treated by protecting the wound by mounting a tourniquet that can cause traumatic amputation (Grzegorz Kucaba et al., 2017).

Farmer's Knowledge in Carrying Out Victims' Transportation Actions

The results of the study found there was a significant change in the ability of farmers in the technique of carrying out of transporting victims from the scene to be hospital. There is a change in knowledge in terms of carrying out victims transportation actions, which previously there are still errors that can cause more injury and increase the risk of death when moving victims. Farmers began to understand that the technique of lifting and moving victims must be appropriate not only the origin of lifting and moving. This is in line with other research results which stated that farmers need health education and training in the treatment of injuries and techniques of patient transportation (Berkowitz, Horton, & Kaye, 2004). So that in this training participants also get training related to injury management and transportation methods in

moving injured people. In general, injuries in the agricultural industry are severe and associated with significant soft tissue damage, multilevel fractures, neurovascular injuries, and amputations (Missikpode et al., 2015).

CONCLUSION

Daily emergency training in the general public as a first responder are increase to improve the ability of ordinary people as first helpers in the event of daily turmoil so that it will reduce the mortality and disability due to late help before being taken to the hospital.

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