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Original Article

PREHOSPITAL CARE SIMULATION IMPROVES SELF-EFFICACY AND TRAFFIC ACCIDENT FIRST AID SKILLS

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ABSTRACT

Background. Inappropriate actions when prehospital care for traffic accidents often lead to new injuries or death. The public needs to be trained in traffic accident first aid. To increase the self-efficacy and skills of the community to provide help appropriately, quickly, and accurately. This study aim was to determine the effect of prehospital care simulation on people's self-efficacy and skills in first aid for traffic accidents
Research Method. This research was quantitative, Quasy experiment with pre and post-tests without a control group. The population was all adolescents of Waru Village, Karanganyar Regency, Indonesia, consisting of 78 people, with total sampling. The instruments used a self-efficacy questionnaire and checklist instructions for first aid skills in traffic accidents. Data analysis used the Wilcoxon test.
Findings. The results showed that pre-hospital simulation of traffic accidents has an influence on adolescent self-efficacy in providing first aid for traffic accidents with a p-value was 0.000. The results showed that pre-hospital simulation of traffic accidents has an influence on adolescent skills in providing first aid for traffic accidents with a p-value of Skills 0.000.
Conclusion. There is a difference between before and after prehospital care simulation on adolescents' self-efficacy and skills in first aid for traffic accidents. They try actively and get feedback from the actions taken, thus creating new experiences that affect their self-efficacy.

Keywords: First Aid, Prehospital Care, Self-efficacy, Skills, Traffic Accident.

BACKGROUND

Road accidents are the most undesirable thing for road users, even though these incidents occur quite often. According to the National Highway Traffic Safety Administration, 36,560 people died on the road in 2018, and 2.71 million people suffered injuries that required medical treatment. Accidents can change a person's life significantly, whether minor or major [1].

Traffic accidents cause around 1.19 million deaths every year. One of the main causes of death in children and young adults aged 5 to 29 years is road accidents. Low- and middle-income countries account for 92 percent of the world's road deaths, even though these countries own about 60% of the world's vehicles. More than 50% of deaths due to

traffic accidents are caused by cyclists, motorcyclists, and pedestrians. The United Nations General Assembly has set a major target to halve the number of deaths and injuries caused by traffic accidents worldwide by 2030 [2].

This can mean lost wages, illness, and hardship, or permanent disability. Traffic accidents should not be ignored just because they occur frequently. Traffic accidents are classified into two types. The first is mistakes made by humans, and the second is mistakes made by other people [1]. The perpetrators of most traffic accidents are aged 26-30 years with 145,303 incidents. About 400,000 victims under the age of 25 die on the road with an average death rate of 1,000 children and adolescents every day [3].

The increase in the number of deaths that occur due to traffic accidents is partly due to the inaccuracy in providing first aid to victims. It is not uncommon for the wrong actions when assisting to increase injury and even cause death. Anyone can experience a traffic accident regardless of location. It is expected that the public can respond to events and provide first aid quickly. Laypeople are usually the first to spot accident victims and sometimes are the first to provide help before medical personnel. People who know how to handle accident victims will be able to save the lives of victims, while people who do not know how to handle traffic accident victims will not be able to provide help [4].

First aid in accidents is a series of first aid efforts given to patients that are carried out as quickly and as precisely as possible with the aim of saving victims from death or preventing injuries from becoming more severe. The success of first aid in patients depends on; the speed of finding the victim, the speed of the helper's response, the ability and quality of the helper, and the speed of calling for help [5].

First aid is pre-hospital care. Pre-hospital care in traffic accidents is a method used to save victims. Victim handling starts with checking the condition, checking breathing, checking for bleeding, and checking for trauma to prevent further injury or new injury. A series of prehospital care can be done if DRCAB (Danger, Response, Compression, Airway, Breathing) is safe, fractures and bleeding have been handled, pay attention to neck or cervical and backbone injuries, safe routes for helpers and victims in the evacuation process [5].

Limited skills, fear of being alone, fear of harm, tension after assistance, anger, and lack of confidence in immediate action are some of the most common reasons that get in the way of assisting in an emergency [6]. Previous research shows that the community's knowledge of first aid in traffic accidents is categorized as "sufficient". Knowledge is

explored in the form of understanding traffic accidents, objectives, principles, and steps of first aid in accidents [3].

Another study showed that most of the helpers wanted to transfer the patient to the hospital immediately from the scene of the accident, which made the victim's condition more difficult. In addition, almost a quarter of respondents (23.8%) thought that the victim would feel better if given fluids [7]. Participants chose the wrong method of handling traffic accidents. For example, when assessing participants' knowledge of how to prevent heavy bleeding from wounds, most chose to wrap the wound with a tight cloth, while a small proportion answered that they did not know how to do so. The Results Study also showed that people prefer to provide first aid in the case of road accidents. A third of the respondents (34.86 percent) said they would not help, and a further circle were not sure they would. After the interview, the comment was that most of the people (62.45 percent) were not willing to give help due to a lack. Upon discussion, the reason given was that 62.45 percent of people in the community were not willing to help because they did not know about first aid and did not want things to get worse because they did not know about first aid. In addition, 14.77 percent of people who participated were afraid of legal consequences as participating is illegal in first aid [7].

Previous research conducted on the knowledge and skills of traffic volunteers in prehospital management stated that the level of knowledge and skills before being given training was 18 points or with an average value of 43.3. Meanwhile, after the training was given, the level of knowledge and skills increased with an average value of 62.00 [8].

Adolescents begin to realize the realities that occur in their lives, show their attitudes, and demonstrate their interests and talents. What adolescents have faced will help and encourage them to make their self-efficacy better. In addition, related to their ability to perform emergency first aid, they can learn what they can do and achieve and what they cannot do to prevent psychological burdens from arising [9].

Because it is based on personal experience, the experience of success is the most influential trigger for self-efficacy. They perceive the level of difficulty in performing a task as an achievable challenge. Success makes one believe in one's ability, while failure, especially when it occurs before one's ability, decreases that belief [10].

Another study showed that adolescents tend to have less knowledge and low self-efficacy in first aid for traffic accidents. Knowledge is related to a person's skills and self-efficacy [11]. One way to reduce the damage to health and loss of life due to traffic accidents is to provide effective first aid to ordinary people [12]. Studies are therefore

needed to make the public prepared and ready to provide first aid [13]. The purpose of this study was to determine the effect of prehospital care simulation on people's self-efficacy and skills in first aid for traffic accidents.

RESEARCH METHOD

This type of research was quantitative research with Quasy experiment with pre and post-tests without a control group design. The population in this study were all adolescents from Waru Village, Kebakkramat District, Karanganyar Regency, Central Java Province, Indonesia, consisting of 78 people. This study used a total sampling technique. The basis for sampling is if there are less than 100 subjects, it is better to take all of them so that the research is a study of the total population. The number of samples used was 78 people. The inclusion criteria for this study are: active members aged 12-35 years, and willing to be respondents. This research was conducted in September 2021. The instrument in this study was a self-efficacy first aid traffic accident questionnaire prepared by the researcher [10].

The validity test on the self-efficacy questionnaire in the first aid of traffic accidents using the Pearson Product Moment correlation formula obtained the results of the calculated r value between 0.791-0.857. The significance value used is 0.05 using r table 0.361. The correlation value between the item score and the total score (item-total correlation) is more than or equal to 0.3. With a value of $r \geq 0.3$, it is expected that the coefficient alpha is expected to be higher [14]. The results of the reliability test of the self-efficacy questionnaire in the first aid of traffic accidents from all statements as many as 33 items contained in the questionnaire were declared reliable with a Cronbach alpha value of 0.986.

The research instrument regarding work instructions for traffic accident first aid skills was prepared by researchers, with reliable results with a Cronbach alpha value of 0.87. The procedure used is the Basic First Aid Guide with PASTI ABC PAS (in Indonesian), which consists of a sequence of activities Helpers do not panic, Safe helper, safe environment, safe patient, Immediate response and call for help, Calm the patient or family, Identify life-threatening problems, airway patency, Check breathing, Check circulation: pulse and bleeding, Appropriate initial aid according to trauma conditions, Re-analyze the patient's condition after first aid, Immediately evacuate to health services [15].

Data collection in this study was carried out by conducting pre and post-tests of respondents on the same day. The pre-test was conducted by distributing a self-efficacy questionnaire in the form of a Google form and assessing the skills. The intervention was

given once. The intervention was carried out by providing prehospital care training within 120 minutes with a division of 30 minutes of theatre, and 90 minutes of practice. in practice, participants were given feedback by the trainer. after the intervention, the post-test was carried out on the same day. Researchers have obtained ethical clearance approval from the Ethics Committee of Kusuma Husada University, Surakarta with number 022/UKH.L.02/EC/II/2020. Data analysis was used the Wilcoxon test.

FINDINGS

Table 1. Characteristics of Respondents Based on Age and Gender

Characteristics	Min	Max
Age	12	25
Gender	**F**	**%**
Male	57	72.1
Female	21	26.9
Total	78	100

Table 1 shows that the youngest respondent is 12 years old and the oldest is 25 years old. The characteristics are based on the gender of adolescents at Waru Village, Kebakkramat District, Karanganyar Regency, Central Java Province, Indonesia mostly Male (73%).

Table 2. The Effect of Pre-Hospital Care Simulation on self-efficacy and skills of traffic accident first aid

Variable	Pre-Test		Post-Test		P-Value
Self-Efficacy	**F**	**%**	**F**	**%**	
High	6	7.7	22	28.3	
Medium	30	38.5	47	60.2	0.000
Low	42	53.8	9	11.5	
Total	78	100	78	100	
Skill	**F**	**%**	**F**	**%**	
Skilled	0	0	16	20.51	
Skilled Enough	16	20.51	43	55.13	0.000
Less Skilled	62	79.49	19	24.36	
Total	78	100	78	100	

Based on Table 2, some respondents (53.8%) had low self-efficacy in saving traffic accidents before the pre-hospital treatment simulation. On the other hand, after the simulation was given, the majority of respondents (60.2%) increased to have moderate self-efficacy. The results of the Wilcoxon test show that pre-hospital simulation of traffic

accidents has an influence on young people's self-efficacy in providing first aid for traffic accidents. The Self-Efficacy p-value is 0.000.

Table 2 also shows that before being given pre-hospital traffic accident simulation care, the majority of youth (79.49) lacked skills in providing traffic accident first aid. On the other hand, after being given a simulation, the majority (55.13%) of young people were quite skilled in providing first aid for traffic accidents. The results of the Wilcoxon test show that pre-hospital simulation of traffic accidents has an influence on young people's skills in providing first aid for traffic accidents. The p-value of Skills is 0.000.

DISCUSSIONS

Characteristics of Respondents

In this research results show that the youngest respondent is 12 years old and the oldest is 25 years old. The age classification in this study is based on the age group compiled by the Ministry of Health of the Republic of Indonesia in 2009 which classifies adolescents into late adolescents with an age range of 12-25 years [9]. An individual's attitude in providing first aid for traffic accidents is influenced by age. There is a relationship between high levels of self-efficacy and a person's age. According to, adolescent self-efficacy is formed through cognitive processes, which can affect a person's daily life. Effective adolescents will strive to achieve good results. However, people with low self-efficacy always believe that they are unable to handle situations and that self-efficacy begins to emerge at the age of [13].

The results of the study provide information about the gender of the respondents, most of whom are male. Generally, in the learning process, men have higher self-efficacy than women. Another theory explains that men generally overestimate how well they can do a new task, while women underestimate their performance [16].

Adolescent girls tend to exhibit significantly lower levels of self-efficacy, interest, and academic and career aspirations than adolescent boys. Gender was significantly associated with self-efficacy, interest, and academic and career aspirations [17]. Individuals who have high academic self-efficacy will have the attitude: (a) ready to participate more in learning, and complete learning tasks, (b) work hard, (c) have longer persistence when facing difficulties rather than those who underestimate their abilities, (d) encourage themselves to seek all positive efforts to improve themselves achievement and personal well-being, (e) accelerating interest in a particular thing and getting lost in pleasure [12].

The Effect of Pre-Hospital Care Simulation on Self-Efficacy and Skills of Traffic Accident First Aid

Descriptive results before being given a simulation of pre-hospital care of traffic accidents youth self-efficacy in handling traffic accidents is low, and afterward have moderate self-efficacy, even some (28.3%) have high self-efficacy. The skill results showed that after being given a simulation of pre-hospital care for traffic accidents, the skills of youth in handling traffic accidents increased, and most of the youth (55.13%) became quite skilled.

A similar previous study showed that there were differences in knowledge, self-efficacy, and skill scores between the intervention group and control group after first aid training [18]. Knowledge and skills in the intervention group who were given socialization about accident first aid increased in handling emergencies in everyday life [19]

There is a significant relationship between experience and training with one's success. that the general public has been able to improve their ability to provide first aid to victims of traffic accidents through training involving pre-hospital care simulations. To increase respondents' confidence, training that uses a combination of case simulation techniques and creative approaches can encourage critical and creative thinking [20].

Developing confidence when facing similar problems is greatly aided by experiential learning. The simulation method was perceived as fun and beneficial for improving memory and future application. The findings showed that the higher the general and skill self-efficacy the lower the anxiety level. In addition, it was found that high specific self-efficacy reflects general self-efficacy. This result is consistent with Bandura's theory that individuals' confidence in their ability to perform greatly influences their behavior. It also supports Ajzen's behavioral theory, which states that there is an expected relationship between behavioral achievement and perceived behavioral control, or self-efficacy [21].

That training can increase the average score on student self-efficacy in dealing with disasters. Because it is based on personal experience, the experience of success in something is the most influential trigger for self-efficacy [22]. Small successes in previous jobs boost confidence and encourage a person to do the same again. They are given the belief that they can do so in the future as well. Moreover, the opposite is also true. A person's confidence will plummet if they have experienced failure in their organization.

However, if the failure can be overcome with confidence, the confidence will increase [23].

Training improved first aid skills and self-efficacy. A person who participates in a simulation will experience significant knowledge retention [24]. Through the simulation of first aid for traffic accidents, youth are given the experience to help victims of traffic accidents. They try actively and get feedback from the actions taken, thus creating new experiences that affect their self-efficacy. The researcher's assumption, in the simulation conducted, the researcher used a work procedure in the form of a Basic First Aid Guide with PASTI ABC PAS (in Indonesian) is a new design for understanding first aid in traffic accidents by the public. This is because it is made in the form of abbreviations so that in performing skills it makes it easier for people to remember quickly.

CONCLUSION

The evaluation of the simulation showed an increase in adolescents' self-efficacy and skills in traffic accident first aid in the pre-hospital care traffic accident simulation. This was related to the experience of trying and being called upon to provide first aid in traffic accidents. They were also better at simulating traffic accident first aid and showed that they felt comfortable and ready to help. Testing and comparison of methods for different target groups on a larger sample is needed as this study was conducted on a small group.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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