

Peer Education Method Better in Improving First Aid Skills of Traffic Accidents than Demonstration: A Comparative Study

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Abstract

Traffic accident becomes main problem with highest death rate in the world. Traffic accident requires quick and accurate management before having main emergency aid by medical workers. First aid becomes the most important aspect and immediate intervention to do by common people around the spot of accident. The fact, common people cannot promote first aid when the accident occurs due to lack of skill. Skill of common people can be improved through peer education and demonstration. This research has purpose to find out the differences about peer education method and demonstration toward skill of students in giving first aid of traffic accident. This research uses quasi experiment with pretest-posttest control groups. The respondents are 48 people grouped into two groups. The data is analyzed by using paired t-test and independent sample t-test. The findings show there is skill change of providing first aid of traffic accident by using peer education method or demonstration in which each of them gets p score 0.000. There is improvement of the skill seen on peer education group and demonstration with p score 0.000. Peer education and demonstration can be used to improve students' skill related to providing first aid of traffic accident.

Keywords: Peer Education, Student, Skill, First Aid, Traffic accident.

Introduction

Traffic accident becomes main problem of highest death rate in the world. World Health Organization (WHO) in 2018 stated that 1.35 million people were dead because of traffic accident. Traffic accident also reaches 93% in developing country in which almost 60% of traffic accident causes are vehicle crashes with interval age of victims between 5 – 29 year old with highest victims from children and young adults¹. Traffic accident is global epidemic emergence. Among the causes are death and disability with various traffic injuries and incidents among developing countries. According to current estimation about global loads in 2002, traffic injury was in eleventh rank of main death cause in the world. The aggregate of traffic accident deaths reaches

100.000/citizens of high income countries, such as Europe. Meanwhile, the highest rank is reported from low and medium income countries, such as Eastern Mediterranean and Africa².

In Indonesia, the prevalence of traffic accidents causing injuries increased from 7.5% in 2007 into 8.2% in 2013 include fallen accident (40.9%), motor crashes (40.6%), blunt object (7.3%), other land transportations (7.1%), and struck down (2.5%)³. In Bayuwangi, the numbers of traffic accident in 2006 until 2010 reached 250 causes – victimizing 153 death people, 40 heavily injured people and 270 minor injuries⁴.

Traffic accident needs quick and accurate management before receiving primary aid from medical workers. The given first aid is done by nearest people becomes the most important aspect to improve life rate possibility⁵. First aid also becomes main factor in preventing further injury to prevent any worsening condition⁶. WHO explains that common people is an important part of emergency state management especially developing countries which have roles as first persons to assist before arrival of ambulance⁷. However,

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in reality, many nearest people around the spot do not do any action because they do not have skills and experience of handling first aid of traffic accident⁸.

Previous study showed that first aid such as keeping victim's breathing system done by common people reaching 76% from 43 patients, blood control reaching 81% from 63 people, and hypothermia prevention reaching 62% from 204 patients⁹ Therefore, it needs a certain learning method for common people to improve their skills in providing first aid in the form of health based peer education or conventional education.

Peer education is an educational method giving information and experience among peer individuals to help teenagers, especially students in fostering knowledge, attitude, and needed skill to modify positive behaviors through supportive preventive development and psychosocial in which they are able to do^{10,11} Peer education program focuses on reducing negative influence information, prevention, and self-intervention. This method is strategy to ease delivery of information to teenagers¹²

Meanwhile, health education is conventionally a demonstration of learning presentation ways to demonstrate or show a certain process, situation, or object in which is currently learnt both original and imitation then it is entailed by oral explanation. Djamarah et al (2012) said that demonstration has strength points such as to make learning more concrete and to prevent verbalism. It is also to ease learning and provides more interesting learning through critical thinking process actively¹³.

A preliminary study done in Glagah 1 Senior High School Banyuwangi with 20 students -shows that almost all of students do nothing for traffic accident victims. They are afraid to help the victims. After having test of first aid skill, almost 90% of them cannot provide first aid properly because of their minimum practical experience. Therefore, it needs other method to use in learning process of providing first aid of traffic accident. This research has purposes to find out the differences between peer education method and demonstration toward students' skills in providing first aid assistance of traffic accidents.

Method and Material

This research is a quasi-experimental research by using pretest-posttest with control group approach.

The respondents are 48 students grouped into 2 groups namely peer education as intervention group and demonstration as control group.

The intervention group is divided into six smaller groups, consisting of 4 members. Meanwhile, the implementation of this method is done 20 minutes on each material and then the students are asked to practice it. Meanwhile, the control group has 20 minutes for each main material.

The inclusive criteria are eleventh graders, willing to learn about first aid of traffic accident assistance, willing to be respondent and never joining health education or first aid training on traffic accident. To measure the skill is done by using observation sheet taken from Thygerson et al¹⁴. To measure the skill is done before and after the intervention. Bivariate analysis is done by using paired t-test and independent sample t-test.

Findings

Table 1 Distribution of Respondents' Characteristics based on Ages of Intervention Group and Control Group

Variables	Groups	N	Mean ± SD	95% CI
Ages	Peer Education	24	16,66 ± 0,481	16,46-16,87
	Demonstration	24	16,83 ± 0,380	16,67-16,99

The table shows the average of the respondents' ages of both groups is 16 year old.

Table 2 Distribution of Respondents' Sexes

Variables	Group	Categories	N	Percentage (%)
Sex	Peer Education	Male	11	45,8%
		Female	13	54,2%
	Demonstration	Male	9	37,5%
		Female	15	62,5%

The table shows that majorly Peer Education group is dominated by female, 13 people. Meanwhile, control group is dominated by female, 15 people.

Table 3 Changes of First Aid Assistance Skill Level of Traffic Accident by Using Peer Education Method

Skills	N	Min-Max	Median	95% CI	P Value
Before	24	16-19	18	17,30-17,95	0,000
After	24	24-28	26	25,24-26,60	

Based on the table, p value is 0,000 ($p < 0,05$) showing that there is improvement of the skill by using peer education method.

Table 4 Changes of First Aid Assistance Skill Level of First Accident by Using Demonstration

Skills	N	Min-Max	Median	95% CI	P Value
Before	24	16-19	18	17,52-18,30	0,000
After	24	20-26	22	21,00-22,40	

Based on the table, p value is 0,000 ($p < 0,05$) showing that there is improvement of the skill by using demonstration method.

Table 5 Differences of First Aid Assistance Skill of Traffic Accident by Using Peer Education and Demonstration Method

Skills	N	Min-Max	Median	95% CI	P Value
After Intervention					
Peer Education	24	24-28	26	25,24-26,60	0,000
Demonstration	24	20-26	22	21,00-22,40	

Based on the table, p value is 0,000 ($p < 0,05$) showing that there is difference of improvement of the skill by using both method.

Discussion

Findings of the research explain there is significant improvement appearing on score of the skill after having intervention through peer education. This finding shows peer education is significant to improve respondents' skill about providing first aid of traffic accident cases. Peer education covers a set of learning approach in which information, skill, and score are delivered among people with similar characteristics such as age or experience together¹⁵. A peer educator is assumed a role model that positively can play his role to improve self-esteem and influences behaviors related to health among his peer friends¹⁰. A systematic review from 17 studies with sample 7442 people shows that the given health education through peer education leads to positive health behavior changes of the participants receiving health information^{16,17}. The Cochrane Library 2005, Issue 1. Similar finding is found in previous study that showed health education based on peer learning has positive effect on skills of basic life support. Training of basic life support with peer method as the approach facilitates

interaction and communication which improve students' skill in providing basic life support^{18,19}.

This finding also explains significant improvement existence seen on score of the skill after being given health education through demonstration. The finding is in line with previous study that showed demonstration significantly improved respondents' skill about providing first aid purposed to basic life support. Through demonstration, the participants can learn basic principles of life support which are learnt, guided, and evaluated directly by instructors in promoting that demonstration²⁰. Training process by using this method provides opportunity for respondents to further discuss with instructors related to qualified basic life support so the respondents' skills are improved²¹.

The existence of instructors in this process becomes important role model in providing direction and evaluation related to management of basic life support done by respondents. In another hand, evaluation can be carried out directly and conducted again by using guidance from the instructors. The process also improves self-esteem of the respondent in providing basic life support action²².

Demonstration method can be also added by using audiovisual media. These media are such as video, movie, or song to make it more interesting while using demonstration. Students would be more enthusiastic and more active after being given tutorial video or short illustration through short movies²³.

The finding shows there significant difference between group given health education by using peer education and group given demonstration method toward common people's skill about providing first aid of traffic accident in Glagah 1 Senior High School, Banyuwangi.

Peer education can provide behavioral changes and good skills. The improvement reaches 15 – 30%²⁴. Peer education facilitates in giving information to students or common people, especially with large number of them. It influences positively to overcome major faced hindrances dealing with educating students about health information, especially first aid of traffic accident. Besides that, educating to common people has benefits for medical workers in which common people also helps to reduce delay in providing medical assistance for the victims before medical worker's arrival. Early health assistance done by common people can prevent severe injury experienced by victim²⁵.

Changes of the respondents' skill through peer education are based on some theories. Social cognitive theory explains that some individuals function as talented role person with purpose to trigger behavioral changes of other individuals. In peer education concept, the role of peer educators who can be a model and motivate peer group in conducting first aid²⁶; introductory scenarios requiring response to patients' needs during basic hygienic care and during situations demanding complex decision making. Simulation integrates principles of social cognitive theory (SCT. Theory of Reasoned Action states that individual's perception about norms or social belief about something which can influence mindset can also influence behavioral changes of the individuals²⁷ although ubiquitous in health behavior theory (e.g., Theory of Reasoned Action/Planned Behavior. With another word, an individual's behavior toward behavioral changes is influenced by his own perspectives about positive and negative consequences and what will be thought by his peers about the matter²⁸. According to Theory of Social Inoculation, it states that people can imitate negative behaviors if in the group has negative or bad norms. The same thing also happens oppositely where individual imitates positive behavior when in the group also has good norms²⁹.

Skill is result of improvement or individual's experience in which is applied into his action³⁰. In this research context, peer education can improve knowledge and better skills compared to demonstration. Through peer education, individuals can easily interact, discuss, and be more opened one to another so the information is gained more flexibly³¹. This information becomes the basic of improvement of individual's skills in conducting first aid^{32,33}

Conclusion

It can be concluded that there is improvement of providing first aid skill of traffic accident by using peer education or demonstration. There is difference in improvement of the skill – seen on peer education and demonstration groups. Both of the method can be used to improve skills of the students dealing with providing first aid of traffic accident.

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