

The Implementation of Theory of Planned Behaviour in Identifying First Aid Behaviour in Accidents

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ABSTRACT

First aid was the most important thing for saving people's lives in the golden period. Volunteers, as they have been trained as an emergency rescuer, we discovered some failure processes when delivered first aid. This study aims to discuss the use of the Theory of Planned Behavior (TPB) to determine the factors related to first aid behavior on volunteers. This study used a descriptive-analytic with a cross-sectional study approach. One hundred twenty-one volunteers were taken using purposive sampling. The variables were Attitude Toward Behavior (ATB), Subjective Norm (SN), Perceived Behavioral Control (PBC), intention, and first aid behavior. Respondents were asked to complete six self-design questionnaires to evaluate first aid behavior. Data were analyzed using Spearman's Rho with significance level ≤ 0.05 . The result showed a significant relationship between ATB and SN with intention ($p = 0.000$; $p = 0.000$), intention and first aid behavior ($p = 0.000$). PBC had a significant relationship with intention ($p = 0.412$). Increasing the first aid behavior can be done through the enhancement of the specific beliefs of TPB. Further research with qualitative studies can conceive the deepest perspective in volunteers associated with first aid behavior.

Keywords: accident, a theory of planned behavior, first aid

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INTRODUCTION

Traffic accidents are still the biggest threat to human life. World Health Organization (WHO) reports that every year there are 1.35 million people who die due to accidents (WHO, 2018). Surabaya, as one of the metropolitan cities in Indonesia, has a relatively high accident rate. Statistical data from the Surabaya City Police Office, the number of accidents in Surabaya in 2017 reached 1365 reports. This figure increased from 2016, which only reached 879 reports, in 2015, there were 1136 reports, and in 2014 there were 1119 reports (BPS, 2016). Based on the 2018 Semeru Safety Operation report, Surabaya is ranked third for traffic accidents in East Java Province, after Jember and Banyuwangi (Fajar, 2018).

The high accident rate in the city of Surabaya encouraged the city government of Surabaya to participate in minimizing the impact of accidents actively. One of the efforts made was to provide emergency ambulances by the Indonesian Red Cross and the Health Office. The Indonesian Red Cross (PMI) is a non-governmental organization engaged in the humanitarian field. Each PMI program is run by administrators, staff, and volunteers who work together and move according to their fields (PMI, 2009). Voluntary Corps (KSR), as one of the volunteers PMI, has a role in carrying out the mandate of humanitarian programs, such as disaster emergency response and First Aid (PP) services and ambulances. KSR PMI then became one of the crucial roles as an extension of medical personnel in providing first aid and ambulance services.

KSR members in their role as volunteer ambulance personnel have been given basic KSR education and training to provide knowledge, attitudes, and skills to carry out tasks in the field. However, in their duties, KSR volunteers still have not performed optimally as first aid providers. A preliminary study conducted on ten members of the KSR PMI stated that nine people (90%) had been an ambulance team in handling accident incidents. A total of 9

people said they did not always provide first aid by the principle of emergency, that is, not doing a physical examination before an ambulance was mobilized, and not carrying out bleeding, and staging procedures following the guidelines taught. Factors affecting their inaccuracy in providing first aid, namely: as many as seven people (78%) mentioned due to lack of experience. Five people (56%) said that there was a seniority factor. As many as four people (44%) mentioned the team's coordination factor. As many as three people (33%) said the number of masses (ordinary people) at the scene. As many as two people (22%) said lack of training and as many as two people (22%) said capacity and skills were not yet maximized.

The provision of improper first aid can increase the risk of injury spread and endanger the lives of victims. If this continues, there will be an increased risk of morbidity and mortality in accident victims (Widodo, Sumardino, & Rifai, 2017). The immediate hospitalization process for accident victims by considering priority protocols from the assessment results has a vital role in improving the lives of trauma victims (Brucoli et al, 2019). Effective prehospital services are one of the factors that influence morbidity and mortality due to accidents (Ruslin, Wolff, Forouzanfar, & Boffano, 2015).

Research related to prehospital services was studied by Khorasani-Zavareh et al. in 2009. This research was conducted on stakeholders in charge of post-accident management. The results of the study mentioned that four factors hamper the effectiveness of prehospital services in post-accident management, which include layman's involvement, lack of coordination, inadequate prehospital services, deficiencies in infrastructure (Khorasani-Zavareh et al, 2009). Besides that, Haghparast-Bidgoli et al. in 2010 also examined a similar thing done to hospital paramedics. The results of the study mentioned that seven factors influence the process of prehospital trauma care. The seven factors are administration and organization,

competency and qualifications of officers, availability, and distribution of resources, communication and transportation, organizations involved, laypeople, and infrastructure (Haghparast-Bidgoli, Hasselberg, Khankeh, Khorasani-Zavareh, & Johansson, 2010). The two studies illustrate that there are factors that both support and hinder the effectiveness of accident prehospital services. So, more in-depth research on first-aid behavior in KSR, which is a stakeholder in post-accident management, can be a supporter that enriches the research world.

Theory of Planned Behavior (TPB) was popularized by Icek Ajzen and Martin Fishbein in 1975, which explained the formation of behavior (Ajzen, 1991). TPB theory has been applied by many studies related to individual behavior in the social-psychological context (Ajzen, 2005). The theory was chosen because it explains that behavior is formed closely related to intention, where this intention is influenced by a combination of three main factors, namely attitudes towards behavior, subjective norms, and perception of perceived behavioral control. The application of TPB theory in this study is expected to describe the factors that are effectively related to the formation of correct first aid behavior according to standard procedures. Knowing these factors is then expected to increase the success of first aid delivery, reducing the morbidity and mortality rates of accident victims

MATERIALS AND METHODS

This research used a descriptive-analytic design with a cross-sectional study approach. The population was volunteer members of the KSR PMI in 8 units of higher education and headquarters and actively provided first aid in an accident with a total of 174 people. The sampling technique used was purposive sampling, and a sample of 121 people was obtained. The independent variable is an attitude toward behavior, subjective norms, perception of behavioral control, and intention. The dependent variable is the first aid behavior in accidents. All variables are measured using a questionnaire prepared by the researcher and tested for validity and reliability and have been declared valid and reliable. Data analysis was performed using SPSS statistical software with Spearman's Rho correlation test and with a value of $\alpha = 0.05$.

RESULTS

The study results consisted of demographic data or background factors, attitudes toward behavior, subjective norms, and behavioral control perceptions. From these three factors, a correlation test was conducted to give first aid, which was then followed by first aid behavior.

Table 1. Characteristics of respondents behavior of giving first aid in an accident

Characteristics of Respondents	n	%
Gender		
Male	43	35.5
Female	78	64.5
Age		
18 years old	1	0.8
19 years old	11	9.1
20 years old	23	19.0
21 years old	32	26.4
22 years old	28	23.1
> 22 years old	26	21.5
PMI Participation Period		

Two years	46	38.0
Three years	43	35.5
Four years	21	17.4
> 4 years	11	9.1
Center (posts) standby experience		
1-5 times	34	28.1
6-10 times	18	14.9
11-20 times	18	14.9
> 20 times	51	42.1
Experience handling accidents		
1-3 times	29	24.0
4-6 times	20	16.5
7-9 times	10	8.3
> = 10 times	62	51.2
Education		
Basic KSR Education and Training	45	37.2
First Aid Specialization	55	45.5
Specialization of Ambulance Services	21	17.4
Knowledge		
Less	31	25.6
Enough	39	32.2
Good	51	42.1
General Attitude		
Less	53	43.8
Good	68	56.2

Table 1 shows that of 121 respondents dominated by female respondents (64.5%), aged 21 years (26.4%), had joined the PMI for two years (38%), had been on duty post more than 20 times (42.1%), have dealt with accident victims more than the same as ten times (62%), have studied first aid specialization (45.5%), have good knowledge of first aid (42.1%) and general attitude which is good (56.2%)

Table 2. Cross-tabulation of attitudes towards behavior, subjective norms, perceptions of behavioral control with the intention of KSR PMI members in providing first aid based on the Theory of Planned Behavior

Variable	Intention				Total		Spearman's Rho Test
	Less		Good		Σ	%	
	n	%	n	%			
Attitudes towards behavior							
Less	29	65	1	34.1	4	100	<i>p-value</i> : 0.000 <i>r</i> = 0.420
Good	18	.9	5	76.6	4	100	
		23	5		7		
		.4	9		7		
Subjective Norms							
Less	37	54	3	45.6	6	100	<i>p-value</i> : 0.000 <i>r</i> = 0.362
Good	10	.4	1	81.1	8	100	
		18	4		5		
		.9	3		3		
Behavioral Control Perception							
Less	29	42	4	34.6	6	100	<i>p-value</i> : 0.412 <i>r</i> = 0.075
Good	18	.0	0	65.4	9	100	
		34	3		5		
		.6	4		2		

Table 2 shows that the majority of respondents have attitudes towards good behavior (63.6%), lack of subjective norms (56.2%), perception of lack of behavioral control (57%), good intentions (61.2%), and have good first aid behavior (57%). Spearman's rho analysis test results obtained significant results between attitudes towards behavior with intention ($p = 0.000$; $r =$

0.420). Relationships have a fairly strong and direct correlation level. The results of the subjective norm analysis test with intention show significant results with a weak and unidirectional correlation level ($p = 0.000$; $r = 0.362$). Behavioral control perception did not show a significant relationship ($p = 0.412$; $r = 0.075$).

Table 3. Cross-tabulation of intention and behavior of KSR PMI members in providing first aid based on the Theory of Planned Behavior

Intention	Behavior				Total	
	Less		Good		Σ	%
	n	%	n	%		
Less	30	63.8	17	36.2	47	100
Good	22	29.7	52	70.3	74	100
Total	52	43.0	69	57.0	121	100
<i>Spearman's Rho Test = 0.000; Correlation Coefficient (r) = 0.336</i>						

Table 3 shows that intention with first aid behavior has a significant relationship with a level of correlation that is weak and unidirectional ($p = 0.000$; $r = 0.336$).

DISCUSSION

The results showed that there was a significant relationship between attitudes towards behavior to give first aid. Individuals who have an attitude towards good behavior will mostly have good intentions in providing first aid. The results of this study are in line with other studies with the same variables that individuals who have a positive attitude toward cervical cancer prevention tend to have good intentions to provide support for cervical cancer (Sari, 2017). Also, there is a relationship between attitudes toward good behavior and the intention of nurses to conduct disaster response behavior (Kurniawan, 2018). Nurses who have an attitude towards good behavior will bring up the intention to carry out appropriate disaster response behavior by procedures. Besides, in other studies, nurses' attitudes toward giving ulcer pressure can predict intention to behave (Russell-Babin, 2017). Attitudes toward behavior in other studies have been significant contributors to the intention of midwives to deliver at home (Muhammed, Khuan, Shariff-Ghazali, Said, & Hassan, 2019), as well as being one of the factors that influence community intentions in carrying out disaster preparedness (Laksono, 2018). In accordance with Theory of Planned Behavior that attitude toward a behavior is one of the factors that contribute to increasing intention to behave (Ajzen, 1988), so in this case, an individual who has an attitude towards good first aid behavior, and considers that carrying out first aid following the recommended procedures is necessary, and believes that matters relating to first aid measures are merely eyes provide benefits for the safety of the victim. They can predict the emergence of a good intention also in providing first aid (Lumbanraja, 2013).

Respondents who have attitudes towards good behavior are mostly respondents who have had more experience in alert posts and provide accident first aid. This shows that the higher the intensity of someone faced with the opportunity to behave, the more individual evaluations of the desired behaviour will increase behavioral beliefs, which are components of attitudes towards behavior (Sarayati, 2015).

The relationship between attitude and behavior to provide first aid has a fairly strong correlation. Each individual will have differences in the factors that are more dominant

encourage them to have good intentions, so that not always individuals who have good intentions will have an attitude towards good behavior (Ajzen, 1988). For example, individuals who lack attitude toward behavior but have good intentions can be caused by the confidence that not all first aid procedures need to be performed. This is because there are inhibiting factors and supporting factors to do first aid (perceptions of behavioral control) that affect individual intentions in providing first aid (Wahyuni, Soeroso, Wahyuni, Amelia, & Alona, 2018).

The results showed a significant relationship between subjective norms and one's intentions to provide first aid. Individuals who have good subjective norms have good intentions in providing first aid. Other research states that the better the subjective norms of the individual, the better the individual's intention to carry out the behavior in question. In this case, it is a disaster emergency response behavior to nurses. People who are influential in supporting nurses have good intentions to take action on disaster response nursing are disaster response teams, community leaders, heads of offices/leaders, other agencies (Regional Disaster Management Agency, PMI), colleagues, and decisions of disaster response teams (Kurniawan, 2018). In other studies, a partner or partner can also be referred to as an interpersonal factor. These factors have a significant influence on forming good intentions for healthy behavior in the family (Joyal-Desmarais et al, 2019). Subjective norms in research on hypertension sufferers have a close relationship with the intention to carry out physical activity (Hatefnia, Alizadeh, & Ghorbani, 2019). So, in this case, the better a person's belief in social pressure around him, and the better the individual's motivation to meet the expectations of the person who is considered essential to him, the better the individual's intention to do first aid.

Good subjective norms indicate that the individual has good faith in the social pressure exerted and has good motivation to meet the expectations of people who are considered important to him in carrying out first aid measures. In this case, the individual received good support from those around him, namely ambulance teammates, more experienced seniors, other public agency officials, colleagues, and family (Laili, Sulistiawati, & Widyawati, 2017). Besides, these individuals also have confidence that their actions are supported or not supported by certain people or the community (Machrus & Purwono, 2010). In general, individual beliefs tend to be heavily influenced by others, which means specifically to those individuals, so that most individual beliefs will be in line with the beliefs of others who are considered essential (Laili, 2016). Good subjective norms indicate that the individual has good social pressure and has the confidence to meet the expectations of others who are considered necessary in his life (Laili, 2016). Whereas subjective norms that are lacking indicate that the individual lacks social pressure so as not to generate confidence to meet the expectations of others for himself.

The pattern of relationships with others consists of two patterns, namely vertical and horizontal relationships (Ramdhani, 2011). In this study, the vertical relationship pattern is associated with the relationship between individuals and seniors and public agencies outside PMI. In contrast, the horizontal relationship pattern is associated with the relationship between individuals with ambulance teammates and peers in the form of teamwork and team coordination. Individuals who have good subjective norms have social pressure both vertically and horizontally. In this case, the individual tends to follow

instructions from seniors and public agency officials who are considered important and useful and tend to imitate or follow (identification) from an ambulance teammate and colleagues when on duty and prioritize coordination and teamwork.

The relationship between subjective norms and intentions of giving first aid has a weak relationship. This can be interpreted as not all respondents who have good subjective norms will have the intention of giving good first aid. Some individuals have good subjective norms but have fewer intentions. Conversely, some individuals have less subjective norms but have good intentions in behavior. Individuals who have less subjective norms but have good intentions can be caused because the individual has a belief that the people around him have not given enough social pressure for him so that it is not enough to motivate individuals to perform a behavior. However, on the other hand, the individual has believed that an act of first aid is important and needs to be done regardless of the presence or absence of people who support it so that the individual has good intentions.

The results showed that there was no significant relationship between perceptions of behavioral control and one's intention to provide first aid. Most individuals who have less behavioral control perceptions have good intentions in providing first aid, whereas only some individuals who have good behavioral control perceptions also have good intentions. Ajzen said that the lack of actual control of behavior could reduce the validity of the effect of perception of behavioral control on behavioral intentions (Ajzen, 2011). For example, in a study by Kor and Mullan in 2011 that perceptions of behavioral control have little effect on the intentions of sleep hygiene behavior. This is because there are respondents who find it difficult to reduce their stressful thoughts and feel unable to avoid stress-causing activities before going to sleep. Finally, the intentions formed become less due to the inability of individuals actually to control the behavior (Ajzen, 2011). The results are in line with other studies that the perception of behavioral control is not significantly related to a person's intentions in choosing healthy foods (Shimazaki et al, 2017). Behavioral control perception has a very weak and indirect relationship with nurses' intention to take dual practice in China (Bai et al, 2019). This is because there is a very strong influence of attitude between the perception of behavior control and intention. Behavioral control perception also does not have a significant relationship with intentions that can be caused due to the strong influence of *behavioral belief* on the intention to take morning medication sufferers of hypercholesterolemia (Hagger et al, 2018).

The insignificant research results can be caused because, in the formation of intentions, three factors that contribute to each other, so that each person can have a different dominant factor in supporting intention. For example, when a person has a perception of good behavior control and believes that he can face the possibility of a problem, he feels he does not have the opportunity to take action first aid even though it is still in the intention stage. Moreover, it can also be influenced by the inability of individuals to control their fear and confusion when facing an accident (Wahyuni et al, 2019). Ajzen said that psychological factors enable a person to have a perception of behavioral control that is lacking, namely, the inability of an individual to overcome fear, unwanted habits, and obstacles (Ajzen & Madden, 1986). Most respondents have less perception of behavioral control. Internal and external factors can influence the

control of individual behavior. Individual internal factors can be in the form of expertise, ability, knowledge, and adequate plans. External factors can be in the form of time, opportunity, and dependence on others in conducting behavior. The better the individual manages the available resources and opportunities, and the fewer obstacles and obstacles are anticipated, the better the perception of control of one's behavior (Ajzen & Madden, 1986). Perceptions of control of individual behavior can be influenced by the ability of the individual to take control of things that have the potential to hinder or support him in performing optimal first aid measures. In this case, the factors that hamper our guard shifts include lack of facilities and infrastructure, a large mass at the scene, lack of training and practice, and the lack of rewards. While the supporting factors are good experience and high flight hours in providing first aid, this variable is assumed by reflecting past experiences, which then overcome obstacles that might occur in the future. PBC can be related to the perception of an individual's ability to bring up behavior or can be referred to as *self-efficacy expectations* by adding individual control over the resources needed to realize the behavior (Ajzen, 2002). *Self-efficacy* can affect behavior change (Chao, Lin, & Ma, 2019). In another study, it was mentioned that self-efficacy could be influenced by gender, that male teacher has a higher level of self-efficacy than female teachers in teaching occupational health and safety (Guerin et al, 2019). The study is in line with this study that most of the respondents in the study were dominated by women, and the majority of female respondents had poor behavioral control perceptions.

Based on the results of the questionnaire, the majority of respondents considered that the lack of training and direct practice was a very big obstacle in carrying out first aid measures. This shows that training and practice directly contribute greatly to shaping the control of an individual's behavior, whether he is able to perform first aid actions. In addition, a large number of masses at the scene of the lack of infrastructure also hampers first aid. Other research states that the obstacles that may occur in the provision of prehospital trauma care include the competency and qualifications of officers and the involvement of laypeople at the scene of the accident (Haghparast-Bidgoli et al, 2010).

The results showed a significant relationship between intention and first aid in giving behavior. Individuals who have good intentions to provide first aid will mostly have good behavior in providing first aid. The results of this study are in line with research by McKee et al in 2019 that intention has a positive relationship with parents' behavior in providing healthy food to children (McKee et al, 2019). Also, the intention also affects women in the choice of contraception, both tubectomy and non-tubectomy (Daerah & Bacillus, 2012). High intentions affect the formation of school behavior in elementary school children (Sarayati, 2015). Based on the results of the meta-analysis, psychological interventions can improve oral health behavior that is influenced by the intention to behave (Sanaei Nasab et al, 2019). So, in this case, the individual who has the intention or positive intention to do first aid properly and correctly, then the behavior that is raised will also be good. Most respondents have good intentions in providing correct first aid according to the procedure. A good intention to provide first aid according to the procedure shows that the individual has the intention to provide first aid as well as trying to give the maximum possible first aid for accident

victims. Individuals who have good intentions mostly have good experiences. In line with Guerin et al.'s research, in 2019, teachers who have good experience can increase the teacher's intention to implement the curriculum for work safety and health (Guerin et al., 2019). The relationship between intention and first aid behavior has a weak relationship. It can be assumed that not all respondents who have good intentions will have good first aid behavior. There are individuals who have good intentions but have less behavior. Conversely, some individuals have fewer intentions but have good behavior in providing first aid. Individuals who have good intentions but lack of behavior can be caused by a lack of behavioral control over first aid actions, in this case, it can be in the form of obstacles faced such as lack of experience and training. Ajzen mentioned that even though someone has a strong intention to behave (Fishbein & Ajzen, 2010). Most respondents who have good behavior are female. In research on oral-hygiene behavior, there is a significant relationship with a person's gender. Women have good behavioral tendencies because they are concerned with aesthetics or beauty (Patel et al., 2019). The study also explained that each gender has different psychological conditions in looking at behavior. So, in this case, gender can also be associated with first aid behavior. Women who have good behavior can be caused because these women have perfectionist tendencies and are afraid of making mistakes that can have an impact on others looking at themselves. Besides, that respondents who have good behavior are dominated by respondents who have joined PMI for two years and who have been on duty post>20 times and provide first aid more than equal to 10 times. This shows that the higher the individual's intensity in providing first aid can improve the individual's skills in providing first aid.

CONCLUSION

TPB theory shows good results in determining the factors that influence KSR members in providing first aid. Attitudes, subjective norms, and intentions are the main predictors in the formation of first aid behavior. The better the KSR members in supporting or positively assuming various first aid actions in the procedure, the better the KSR members in intending, trying, and planning to carry out the first aid measures by the recommended procedures. Further qualitative research is expected to learn more from the personal perspective of KSR members regarding giving first aid.

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