

THE EFFECT OF ROLEPLAY EDUCATION ON TRAFFIC ACCIDENT EVACUATION ON THE LEVEL OF PREPAREDNESS FOR FIRST AID AMONG UNISA STUDENTS

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Abstract

Purpose: Traffic accidents require quick and accurate first aid. Health students play a crucial role in providing initial assistance. This study aims to determine the effect of roleplay education on evacuation preparedness among students in performing first aid. The subjects of the study are sixth-semester students at Universitas 'Aisyiyah Yogyakarta.

Method: This research was a quantitative study with a two-group pre-test and post test design. The population of this study consisted of 60 sixth-semester students at Universitas 'Aisyiyah Yogyakarta, selected using random sampling techniques. The research instrument was a questionnaire measuring preparedness for first aid. Data analysis was performed using the Wilcoxon and Mann-Whitney tests.

Results: Before the intervention of the traffic accident evacuation video, the majority of respondents were at a low preparedness level, and after the intervention, most respondents were at a very prepared level. The Wilcoxon test yielded a p-value of 0.000 (<0.05).

Keywords Traffic Accident Evacuation, Preparedness for First Aid, Unisa

Introduction

Traffic accidents are one of the leading causes of death worldwide, especially among people aged 15 to 29. Data from the World Health Organization (WHO) shows that every year there are more than 1.25 million deaths due to traffic accidents. In Indonesia, reports from the Ministry of Transportation and the Indonesian National Police's Traffic Corps show that the number of accidents continues to increase every year. In 2023, more than 155,000 cases were recorded, with students being one of the groups most involved in accidents, especially motorcyclists. In Yogyakarta alone, the number of accidents has also increased significantly, dominated by young drivers.

In emergency situations such as accidents, response time is crucial. First aid must be administered quickly and appropriately to prevent death or permanent disability. Health students, especially those from anesthesiology nursing programs, have a strategic role in providing first aid because they are equipped with basic emergency knowledge and skills. However, preliminary study results show that even though students have learned first aid material through lectures, they are not yet fully prepared for direct practice, especially in treating accident victims.

Therefore, a learning method is needed that can improve students' overall readiness, both cognitively, psychomotorically, and affectively. One method that

has been proven effective is roleplay or victim evacuation simulation. Through roleplay, students can experience real situations in controlled conditions, thereby training their decision-making abilities, technical skills, and mental readiness. This method has also been used in various previous studies that show a significant increase in readiness to perform first aid, as described by Rustandi et al. (2023), Saputra et al. (2019), and Pratiwi C Wulandari (2022).

Methods

This study used a quasi-experimental design with a two-group pre-test and post-test design, involving an intervention group and a control group. The research subjects were sixth-semester students of the Anesthesiology Nursing Study Program at Universitas 'Aisyiyah Yogyakarta who had received first aid training. The sample size of 60 respondents was determined using the Slovin formula and simple random sampling technique.

The research instrument was a questionnaire on readiness to perform first aid, which had been tested for validity and reliability. The independent variable was role-play education on traffic accident evacuation, while the dependent variable was the level of student readiness, categorized into five levels of readiness. Data were collected through questionnaires filled out before and after the intervention. Data analysis used the Wilcoxon test for paired groups and the Mann–Whitney test for intergroup comparisons, with a significance level of 0.05.

Results

Table 4.1 Frequency Distribution of Respondent Characteristics

Characteristics	Category	n	Control Group		Intervention Group	
			F	%	F	%
Gender	Male	30	7	23.3	11	36.7
	Female		23	76.7	19	63.3
	Total		30	100,0	30	100,0
Roleplay Evacuation Experience	No	30	6	20.0	11	36.7
	Yes		24	80.0	19	63.3
	Total		30	100,0	30	100,0

Table 4.2 Frequency Distribution of Pretest and Posttest of Traffic Accident Roleplay Evacuation Readiness in the Intervention Group

Category	n	<i>Pretest</i>		<i>Posttest</i>	
		F	%	F	%
Less Ready	30	2	6.7	0	0
Almost Ready	30	6	20.0	1	3.3
Ready	30	18	60.0	2	6.7
Very Ready	30	4	13.3	27	90.0
Total		30	100,0	30	100,0

Table 4.3 Frequency Distribution of Pretest and Posttest of Traffic Accident Roleplay Evacuation Readiness in the Control Group

Category	n	<i>Pretest</i>		<i>Posttest</i>	
		F	%	F	%
Less Ready	30	1	3.3	1	3.3
Almost Ready	30	3	10.0	5	16.7
Ready	30	20	66.7	11	36.7
Very Ready	30	6	20.0	13	43.3
Total		30	100,0	30	100,0

Table 4.4 Results of the Difference Test for the Control and Intervention Groups

Variabel	n	Min	Max	Mean	S.D	ρ	ρ
Pretest-control	30	53	87	71,83	8,690	0,132	0.000
Posttest-Control		53	87	73,70	10,242		
Pretest Intervention	30	48	89	67,63	9,676	0.000	
Posttest Intervention		58	99	90,47	8,955		

Discussion

Table 4.1 presents the frequency distribution of respondent characteristics based on gender and roleplay evacuation experience in the control and intervention groups. In the control group, the majority of respondents were female (76.7% or 23 people), while males accounted for 23.3% (7 people). AT similar composition was found in the intervention group, where women continued to dominate (63.3% or 19 people), but the proportion of men was higher than in the control group (36.7% or 11 people).

This difference in gender proportion is important to note in interpreting the research results, given that demographic characteristics such as gender can affect perceptions, involvement in training, and readiness to act. Kim and Park (2020) state that gender differences are often associated with variations in risk perception, willingness to engage in simulated training, and ability to adapt to the pressures of emergency situations. Therefore, variations in gender composition between groups may introduce bias in the results or become a moderating variable that affects the effectiveness of the roleplay education intervention provided.

In terms of previous experience with evacuation role-playing, it was found that the majority of respondents in the control group had experience (80.0% or 24 people), while only 20.0% (6 people) had never been involved. Meanwhile, in the intervention group, the proportion with experience was lower (63.3% or 19 people), and 36.7% (11 people) had never had any experience.

This difference in initial experience levels indicates variations in exposure to emergency simulations between groups. Based on Kolb's experiential learning theory (in Brown C Jones, 2023), direct experience plays an important role in shaping individuals' conceptual understanding and practical skills. Respondents who had participated in simulations were likely to have higher initial readiness, be more accustomed to dealing with pressure during simulations, and demonstrate better confidence levels. Conversely, respondents without experience were likely to experience obstacles or require a more supportive learning approach to achieve the same level of readiness.

In the control group that did not receive roleplay education intervention, there was no significant change in the level of readiness to evacuate traffic accident victims. Most respondents remained in the “less prepared” to “almost prepared” categories both before and after the measurement. The absence of active learning methods resulted in a lack of development in practical skills and readiness to act. This is in line with the opinion of Prasetyo and Lestari (2021) that passive methods such as lectures are not effective enough to instill readiness to act in real situations.

The small improvement that emerged was likely due to the reflective effect of the pre-test, as explained by Yunitasari and Susanti (2020), where completing the pre-test can stimulate critical thinking even without direct intervention. Other factors such as exposure to information from social media or personal experiences can also have a limited influence. However, according to Notoadmodjo (2021), knowledge without real practice is not enough to produce applicable preparedness. Therefore, the importance of active engagement in learning is in the spotlight, as emphasized by Syafitri and Hasanah (2022), that experience-based learning is more effective in shaping preparedness.

The intervention group showed a significant increase in readiness levels after receiving roleplay education. Before the intervention, most respondents were in the “not ready” or “almost ready” categories. After the intervention, the majority moved to the “ready” and “very ready” categories. Roleplay education placed students in simulated traffic accident situations, where they performed victim evacuation, light triage, and basic first aid. These activities strengthened technical skills, emotional calm, and quick decision-making abilities.

This learning is in line with Kolb's experiential learning theory, which describes four stages of learning: concrete experience, reflection, abstract conceptualization, and active experimentation (Pratiwi C Wulandari, 2022). Simulations also create a safe but challenging environment, allowing students to learn in depth without direct risk to victims (Frontiers in Education, 2023).

This method is supported by reflective debriefing, cooperative learning in teams, and integration of theory through discussion and demonstration. All of these approaches synergistically improve students' overall readiness (Kurniawati et al., 2023; Qona'ah et al., 2023; Nurhasanah et al., 2023). Thus, the roleplay learning method not only provides technical skills training but also fosters cognitive, affective, and psychomotor readiness. This makes roleplay a highly relevant method in emergency education, particularly for traffic accident evacuation.

Conclusion

Roleplay education significantly improves students' readiness to perform first aid in traffic accident situations. This method is effective because it involves direct experience that trains knowledge, skills, and attitudes in an integrated manner. There was a significant increase in the level of preparedness of students in the intervention group after being given roleplay education, both in terms of knowledge and first aid skills. The control group did not show a significant increase in preparedness to perform first aid because they did not receive roleplay intervention. Without simulation, student preparedness tends to stagnate.

References

- Alfikrie, F., Hidayat, U. R., C Wahyuningtyas, E. P. (2019). Edukasi metode demonstrasi dan roleplay terhadap pengetahuan polisi lalu lintas (Polantas) tentang pertolongan pertama gawat darurat kecelakaan lalu lintas. *Jumantik (Jurnal Ilmiah Penelitian Kesehatan)*, 8(2), 107–114.
- American Red Cross. (2017). *First Aid/CPR/AED Participant's Manual*. American National Red Cross.
- Amin, N. F., Garancang, S., Abunawas, K., et al. (2023). Konsep umum populasi dan sampel dalam penelitian. *Jurnal Ilmu Statistik*, 14(1), 15–31.
- Anggraini, N., et al. (2018). Pendidikan kesehatan pertolongan pertama pada kecelakaan pada masyarakat di Kelurahan Dandangan. *Journal of Community Engagement in* <https://doi.org/10.30994/jceh.v1i2.10>
- Brown, S. L., C Jones, A. R. (2023). *Experiential learning in health professions education: A practical guide*. Springer.
- Damayanti, R. A., C Bachtiar, A. (2020). Kesiapan mahasiswa kesehatan terhadap penerapan pendidikan interprofesional di Indonesia. *Jurnal Terpadu Ilmu Kesehatan*, S(1), 1–116.
- Djuwadi, G., C Mujito. (2018). *Modul pelatihan pertolongan pertama kegawatdaruratan bagi anggota satuan perlindungan masyarakat*. Poltekkes Kemenkes Malang.
- Firmansyah, A. (2022). Teknik pengambilan sampel dalam penelitian keperawatan. *Jurnal Penelitian Kesehatan*, 5(1), 33–40.
- Hansen, J., et al. (2022). Five principles of research ethics in health care. *Ethical Nursing Journal*, S(1), 44–51.
- International Trauma Life Support. (n.d.). *ITLS Manual*. ITLS International. National Association of Emergency Medical Technicians. (n.d.). *Prehospital Trauma Life Support (PHTLS)*.

- Occupational Safety and Health Administration. (n.d.). OSHA Evacuation Guidelines. <https://www.osha.gov>
- Qona'ah, N., et al. (2023). Efektivitas kombinasi metode ceramah, diskusi, demonstrasi, dan roleplay dalam pelatihan pertolongan pertama. *Jurnal Kesehatan Masyarakat*, 11(2), 87–94.
- Saputra, W., Krisnana, I., Kurnia, I. D., C Kusumaningrum, T. (2019). Metode role play meningkatkan pengetahuan dan tindakan pertolongan pertama luka pada anak usia sekolah dasar di daerah rawan bencana. *Pedimaternat Nursing Journal*, 5(1), 19–25.
- Saputra, F. K., et al. (2023). *Keperawatan Gawat Darurat dan Manajemen Bencana* (Mulyasari Wahyu Dini, Ed.). Pradina Pustaka.
- Siwi, M. E., C Wijaya, R. (2023). Pengertian dan tujuan pertolongan pertama dalam konteks masyarakat awam. *Jurnal Ilmu Kesehatan Masyarakat*, 12(3), 142–150.
- Sugiyono. (2022). *Metode penelitian kuantitatif, kualitatif, dan R&D* (27th ed.). Alfabeta.
- Sari, Y. M. (2023). Analisis tingkat pengetahuan tentang pertolongan pertama pada kecelakaan lalu lintas. *Jurnal Keperawatan Indonesia*, 15(2), 110–117.
- Syafitri, D., C Hasanah, R. (2022). Peran media sosial dalam meningkatkan kesiapsiagaan bencana di kalangan mahasiswa. *Jurnal Komunikasi dan Edukasi Kebencanaan*, c(1), 17–24.
- Tilong, W. (2014). *Dasar-Dasar Pertolongan Pertama*. Jakarta: EGC.
- World Health Organization. (2018). *Basic Emergency Care: Approach to the acutely ill and injured*. WHO Press.
- Yazdani, M., et al. (2021). Emergency medical evacuation in traffic accidents: A global systematic review. *International Journal of Emergency Medicine*, 14, 51. <https://doi.org/10.1186/s12245-021-00365-4>
- Yunitasari, E., C Susanti, R. (2020). Efek pengisian pre-test terhadap kesadaran mahasiswa mengenai pertolongan pertama. *Jurnal Ilmu Keperawatan*, 8(3), 59–66.