

**Effect Of Pre-Earthquake Disaster Training Earth About Wrapping Splains
Against Student/Student Knowledge Level At Sma Negeri 1 Pundong Bantul**

Endah Tri Wulandari ¹⁾, Devi Anggita Cahyani ²⁾ Gatot Suparmanto³⁾

^{1,2}Universitas Aisyiyah Yogyakarta
endahtriwulandari@unisayogya.ac.id

ABSTRACT

Earthquakes are one of the natural disasters which in reality cause quite a large impact, especially the number of victims caused. One location that has a fatal risk is school. In fact, school safety needs to be a global priority to face the threat of earthquake disasters. This negative impact is caused by a lack of knowledge and preparedness to anticipate an earthquake disaster. There is a need to increase preparedness to reduce the bad risks that may occur. Therefore, the aim of this research is to determine the effect of pre-earthquake disaster training regarding splint dressing on the level of knowledge of students at SMA N 1 Pundong. The method used in this research was pre-experiment. The research design used was a one-group pretest-posttest design. The research results showed that there was an Asymp.sig value. (2-tailed) 0.000, because the value of 0.000 is smaller than <0.05 , it can be concluded that "Ha is accepted" which means there is a difference between the pretest and posttest results, so it can be concluded that there is an influence from the Pre-Earthquake Disaster Training on Wraps Bidai on Knowledge in Students and Students of SMA Negeri 1 Pundong.

Keywords: *earthquakes; preparedness; splints*

1. INTRODUCTION

Disaster is a phenomenon or event that can threaten human survival caused by several factors, both natural factors and non-natural factors such as disasters caused by humans (Widdyusuf et al., 2022). The impact of a disaster can be in the form of material or non-material loss such as environmental damage as well as psychological impacts and other emergencies caused by the disaster. Even the threat of disaster can cause loss of life for individuals affected by the disaster. According to The National Agency for Disaster Countermeasure (2016), earthquakes are one of the disasters which in reality cause quite a large impact, especially the number of victims caused. Some of these negative impacts are caused by a lack of knowledge and community preparedness to anticipate earthquake disasters (Widdyusuf et al., 2022).

Pre-disaster preparedness is important for organizations, families and individuals to be able to handle disaster situations and possible disaster threats (Widdyusuf et al., 2022). Disaster preparedness is the basis needed to reduce the risk of disasters that can occur without prior knowledge of both time and place, therefore, prevention is needed with appropriate methods so that human casualties in particular can be minimized (Gunawan et al., 2019).

One location that has a fatal risk is school because school is a gathering place for students and some do not understand the concept of disaster mitigation (Widdyusuf et al., 2022). In fact, according to Shah et al., (2020) school safety needs to be a global priority to face the threat of

earthquake disasters. According to research by Lesmana & Purborini (2015), earthquake disasters cause a lot of damage and even destruction of school buildings, such as in the Aceh earthquake and tsunami (2004) and the Yogyakarta earthquake (2006). This certainly shows that schools must be prepared to reduce the impact caused by the disaster, so it is very important that the introduction of disaster preparedness needs to be given from an early age.

One form of preparedness that needs to be taught to students is the skill of dressing splints, this is used to help themselves or their peers. A splint is an effort made to maintain the position of the broken bone so that it does not move or immobilize it to prevent worse trauma (Listiana & Silviani, 2020). According to Cakir et al. (2023), multiple trauma such as fractures, soft tissue, and organ injuries caused by collapsed buildings or falling objects are the most common reasons for admission to hospital after an earthquake. Even according to Cakir et al. (2023) explained that the incidence of injuries that often occur due to earthquakes is 18.7% head injuries; 15.5% thorax injuries; 8.5% spinal injury; 7.4% pelvic injury; 3.9% abdominal injuries, and; and 2.3% maxillary fractures. Therefore, it is very important to provide education regarding pre-disaster preparedness regarding splint dressing to students, especially those in locations with a high risk of earthquakes.

According to data from The National Agency for Disaster Countermeasure (2016), Bantul Regency, Special Region of Yogyakarta (DIY) is the highest district out of 4 other districts that is at high risk of earthquakes. Pundong 1 State High School (SMA)

is one of the schools in Bantul Regency. Based on preliminary studies at the high school, students had received material about splint dressing which was given to those who took part in the Youth Red Cross (PMR) extracurricular.

Students in grades 11 and 12 have received the theory and practice of applying splint dressing, but in grade 10 it is only limited to the theory of splint dressing. Based on this background, the aim of this research is to determine the effect of pre-earthquake disaster training regarding splint dressing on the level of knowledge of students at SMA N 1 Pundong. The formulation of the problem in this research is whether there is an effect of pre-earthquake disaster training with splints on the level of knowledge of students at SMA N 1 Pundong.

2. RESEARCH METHODS

The method used in this research was pre-experiment. The research design used was a one-group pretest-posttest design. In this design, there is a pretest of splint dressing knowledge before being given a simulation of splint dressing. Shortly after being given the simulation, respondents were then measured regarding their splint dressing knowledge.

The research was conducted at SMA N 1 Pundong, Bantul on May 28 2024. The presentation and roleplay of applying the splint bandage was carried out within 30 minutes. The equipment used in this research was a set of splint dressing equipment provided by the researcher.

The population in this study was 216 students at SMA Negeri 1 Pundong class 10. The sample used in this research was 70 people. The sampling technique used was simple

random sampling with consideration of inclusion and exclusion criteria. The inclusion criteria are class X students, students who are active in teaching and learning activities, students who take part in PMR extracurriculars and scouts. Inclusion criteria were students who were absent or sick at the time of the research.

This research uses a questionnaire as a research tool. The parameters of the splint dressing knowledge questionnaire consist of the definition of splint dressing, the purpose of splinting, the principles of dressing and splinting, and types of splint dressing, complications of dressing and splinting.

The data analysis used in this research is univariate and bivariate analysis. The bivariate analysis used in this study was the Wilcoxon test to determine the difference in splint dressing knowledge before and after intervention was given without carrying out a normality test because the data obtained was not normally distributed and the scale was ordinal.

3. RESULTS AND DISCUSSION

The research results can be seen as follows:

1. The characteristics of respondents can be seen in the table as follows:

Table 1 shows that the majority of respondents in this study were 16 years old, 59 respondents (84.3%) and the minority was 19 years old, 1 respondent (1.4%). In terms of gender, the majority were female with 52 respondents (74.3%). And the minority of male respondents was 18 respondents (25.7%).

asil penelitian dapat dilihat sebagai berikut :

Table 1. Distribution of Respondent Characteristics

Characteristics	Frekuensi (n)	Persen (%)
Age		
15	7	10.0
16	59	84.3
17	3	4.3
19	1	1.4
Gender		
Male	18	25.7
Femile	52	74.3
Total	70	100.0

Sumber : Data Primer, 2024

3. Level of knowledge before and after the Pre-Earthquake Disaster training

The level of knowledge of students before and after pre-earthquake disaster training can be seen in the following table:

Table 2 Level of Knowledge Before and After Pre-Earthquake Disaster Training.

Characteristics	pre		post	
	f	%	f	%
Good	37	52,9	63	90
Medium	33	47,1	7	10
Total	70	100	70	100

Sumber : Data Primer, 2024

Table 2 shows that before receiving training, data was obtained on students and girls with "Good" knowledge of 37 respondents (52.9%) and 33 respondents (47.1%) with "Medium" level of knowledge. Meanwhile, after being given training, data on the knowledge of female students with "Good" knowledge was obtained for 63 respondents (90%) and "Medium" knowledge level for 7 respondents (10%).

Based on table 2, it can be seen that before being given training, the respondents' knowledge was in the good category, 37 people or 52.9%, while the knowledge in the moderate category was 33 people or 47.1%. This is because the respondents in

this study were members of the Youth Red Cross (PMR) and Scout members of SMA Negeri 1 Pundong. One of the activities held at PMR and Scouts is education about bandaging splints. As stated by Isro'diyah & Warsono (2017), the aim of extracurricular PMR is to form social attitudes and develop health in the school environment. How to provide first aid for accidents in the school or community environment, such as dressing a splint, is a learning program that needs to be exposed to high school level students (Ismail et al., 2024).

According to Rohmahna et al., (2019) trained lay people such as students who have received basic emergency education can be given through extracurricular PMR with a minimum of 50 hours of training time divided into several meetings so that PMR can be active. Apart from that, the splint dressing skills obtained by PMR participants show that this is useful for adding to students' skills (Rohmahna et al., 2019). Students need to be given early education on splinting for fracture patients which is useful for preventing more severe injuries (Sari et al., 2024). The education that has been provided previously influences students' knowledge about dressing splints, this is because the method of providing material is appropriate to the students' abilities and the method uses simulations and small groups so that when there are questions they can be answered immediately by the presenter.

Apart from previously acquired knowledge, the level of good and moderate knowledge about splint dressing among students is influenced by the family's experience in dealing with previous earthquake disasters. The research location is in the area with the highest risk of

earthquake disasters, namely Bantul Regency (The National Agency for Disaster Countermeasure, 2016). Where in 2006 there was an earthquake which caused thousands of deaths due to the earthquake. According to Yildiz et al., (2020) the family is the main source of information for other family members, especially children, regarding preparedness for disasters, one of which is earthquakes. In fact, the role of the family is an important indicator of children's preparedness for earthquake disasters (Yildiz et al., 2020).

One of the earthquake disaster preparedness is knowledge about dressing splints (Seddighi et al., 2023). In fact, according to Seddighi et al., (2023), education for students in schools needs to be involved by the government in disaster risk reduction programs because of the emphasis that students in schools are considered as agents of behavior change.

1. Test results of different levels of pre-earthquake knowledge about splint dressing.

The test results of different levels of pre-earthquake knowledge regarding splint dressing can be seen in the following table:



Table 3. Results of Different Tests of Pre-Earthquake Disaster Knowledge About Bandages

	N	Mean	Asymp. Sig. (2tailed)
Pretest	70	77.5429	0.000
Posttest	70	81.9286	

Sumber : Data Primer, 2024

Based on the output in table 3 above, a hypothesis test was carried out

using the Wilcoxon test, it was found that the minimum value in the pretest was 77.5 while the minimum value in the posttest was 81.9. In addition, the value of Asymp.sig. (2-tailed) is worth 0,000. because the value 0.000 is smaller than <0.05 , it can be concluded that "Ha is accepted". This means that there is a difference between the results of the pretest and posttest, so it can be concluded that there is an influence from the Pre-Earthquake Disaster Training on Bandages on the Knowledge of Students at SMA Negeri 1 Pundong. This change in knowledge cannot be separated from the knowledge provided in this research. This is also in accordance with research from Warouw et al., (2018) entitled The Influence of Health Education and Simulations on Knowledge about Bandages. First Aid for Bone Fractures. First Aid for Long Bone Fractures in Class Simulation of Knowledge about First Aid Splint Bandages for Long Bone Fractures in Class X Students of Manado State Vocational School.

In this research, education was carried out using power point media followed by directly simulating splint dressing using existing models. Simulation is very important to increase the knowledge of educational participants. As stated by Gunawan et al., (2019), the aim of carrying out disaster simulations is to provide knowledge about natural disasters, increase awareness of natural disasters, check the readiness of procedures and equipment for handling natural disasters, and reduce the number of victims if natural disasters occur in the future. .

4. CONCLUSION

a. The average value of pre-earthquake knowledge about splint dressing before being given training was 77.5429

b. The average value of pre-earthquake knowledge about splint dressing after being given training was 81.9286

c. There is a value Asymp.sig. (2-tailed) 0.000, because the value of 0.000 is smaller than <0.05 , it can be concluded that "Ha is accepted" which means there is a difference between the pretest and posttest results, so it can be concluded that there is an influence from the Pre-Earthquake Disaster Training on Wraps Splints on Knowledge in Students of SMA Negeri 1 Pundong.

5. ADVICE

Research can be carried out involving the entire academic community at SMA Negeri 1 Pundong Bantul with the hope that knowledge of dressing splints will not only be possessed by students but all components at SMA Negeri 1 Pundong.

REFERENSI

- Cakir, Sengul, Bekci, Tonkaz, Eryuruk, Onder, Aksoy, Bayar, Tonkaz, Sengul, & Aslan. (2023). A needful, unique, and in-place evaluation of the injuries in earthquake victims with computed tomography, in catastrophic disasters! The 2023 Turkey-Syria earthquakes: part I. *Journal of The Brazilian Medical Association*.
- Gunawan, I., Afiantari, F., Kusumaningrum, D. E., Thasbikha, S. A., Zulkarnain, W., Ichwanda Burham, A. S., Nurabadi, A., Pertiwi, A. K., Andringrum, H., Cholifah, P. S., Kusumawati, E. S., Sakinah Nuraini, N. L., & Budiarti, E. M. (2019). Improving disaster response through disaster simulation. *International Journal of Innovation, Creativity and Change*, 5(4), 640–653.
- Ismail, Sangkal, Madihutu, Lahiya, Daada, Biya, Lumempow, Abas, & Molamahu. (2024). *Pelatihan Balut Bidai Pada Siswa / I SMA Negeri Sang Tombolang*. 5(4), 5970–5972.
- Isro'diyah, S. D., & Warsono. (2017). Ekstrakurikuler Palang Merah Remaja Dalam Menumbuhkan Kepedulian Sosial Siswa Di SMP Negeri 2 Jombang. *Kajian Moral Dan Kewarganegaraan*, 5(2), 288–302.
- Lesmana, C., & Purborini, N. (2015). Kesiapsiagaan Komunitas Sekolah dalam Menghadapi Bencana di Kabupaten Magelang (Preparedness of School Communities in Facing Disasters in Magelang District). *Jurnal Teknik Sipil*, 11(1), 15–28.
- Listiana, D., & Silviani, Y. E. (2020). Pengaruh Pelatihan Balut Bidai Terhadap Pengetahuan Pada Mahasiswa/I Keperawatan Stikes Tri Mandiri Sakti Bengkulu. *PREPOTIF: Jurnal Kesehatan Masyarakat*, 4(2), 112–120. <https://doi.org/10.31004/prepotif.v4i2.923>
- Rohmahna, Devi, Effendi, & Oktarina. (2019). Pengaruh Pelatihan Balut Bidai Terhadap Pengetahuan Dan Keterampilan Siswa Di SMA N 4 Kota Bengkulu. *Chmk Nursing Scientific Journal*, 3(Balut Bidai, Pelatihan, Pengetahuan dan Keterampilan).
- Sari, Aliva Rena Putri Rokhiyah, & Didik Iman Margatot. (2024). Edukasi Dini Dan Simulasi Pertolongan Pertama Manajemen Fraktur. *Empowerment Journal*, 4(1), 36–42. <https://doi.org/10.30787/empowerment.v4i1.1441>

- Seddighi, H., Lopez Lopez, M., Zwitter, A., Muldoon, M. L., Sajjadi, H., & Yousefzadeh, S. (2023). Non-formal disaster education programs for school students in Iran: A qualitative study of the challenges experienced by stakeholders. *International Journal of Disaster Risk Reduction*, 86(March 2022), 103531. <https://doi.org/10.1016/j.ijdr.2023.103531>
- Shah, A. A., Gong, Z., Pal, I., Sun, R., Ullah, W., & Wani, G. F. (2020). Disaster risk management insight on school emergency preparedness – A case study of Khyber Pakhtunkhwa, Pakistan. *International Journal of Disaster Risk Reduction*, 51(July), 101805. <https://doi.org/10.1016/j.ijdr.2020.101805>
- The National Agency for Disaster Countermeasure. (2016). Disasters Risk of Indonesia. *International Journal of Disaster Risk Science*, 22. <https://doi.org/10.1007/s13753-018-0186-5>
- Warouw, J. A., Kumaat, L. T., & Pondaag, L. (2018). Pengaruh Pendidikan Kesehatan dan Simulasi Terhadap Pengetahuan Tentang Balut Bidai Pertolongan Pertama Fraktur Tulang Panjang Pada Siswa Kelas X SMK Negeri 6 Manado. *Ejournal Keperawatan*, 6, 1–8.
- Widdyusuf, Muktiarni, & Mupita. (2022). Earthquake Disaster Preparedness for Students of Junior High School ASEAN Journal of Science and Engineering Education. *ASEAN Journal of Science and Engineering Education*, 2(2), 129–136.
- Yildiz, A., Teeuw, R., Dickinson, J., & Roberts, J. (2020). Children's earthquake preparedness and risk perception: A comparative study of two cities in Turkey, using a modified PRISM approach. *International Journal of Disaster Risk Reduction*, 49(May), 101666. <https://doi.org/10.1016/j.ijdr.2020.101666>