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Implementation of the Disaster-Safe School Disaster Program on Students' Preparedness Behavior in Schools

Implementación del Programa de Escuelas Seguras ante Desastres en el Comportamiento de Preparación de los Estudiantes en las Escuelas

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SUMMARY

Introduction*: Students at the Junior High School level are in a stage of unstable social and emotional development. A safe and supportive school environment is an important factor in promoting disaster-preparedness behavior. The Safe School Disaster Preparedness Unit Program (SSDP) aims to create an inclusive, disaster-ready school environment. This study aimed to determine the implementation of the Safe School Disaster Education Unit Program and its relationship to disaster preparedness behavior among junior high school students.* **Method:** *The design is correlational with a cross-sectional approach. The population comprised all students (N = 346), and a sample of 184 was selected using simple random sampling. The instruments used were the Implementation Questionnaire and the Disaster Preparedness Behavior Questionnaire.* **Results:** *The results of the Spearman's rho test indicate a significant relationship between the implementation of the Disaster Safe School Program among students and disaster preparedness behavior (r = 0.623).* **Conclusion***: This study finds that implementing the Safe School Disaster Preparedness Program is associated with students' disaster-preparedness behavior in junior high school.*

Keyword*: Disaster risk reduction education program, disaster preparedness, behavior, students.*

RESUMEN

Introducción: *Los estudiantes de secundaria se encuentran en una etapa de desarrollo social y emocional inestable. Un entorno escolar seguro y de apoyo es uno de los factores importantes para promover la conducta de preparación ante desastres. El Programa de la Unidad de Preparación para Desastres en Escuelas Seguras (SSDP, por sus siglas en inglés) tiene como objetivo crear un entorno escolar inclusivo y preparado para desastres. Este estudio tuvo como objetivo determinar la implementación del Programa de la Unidad de Educación para Desastres en Escuelas Seguras y su relación con la conducta de preparación ante desastres entre estudiantes de secundaria.* **Método:** *Diseño correlacional con enfoque transversal. La población consistió en todos los estudiantes (346) y se seleccionó una muestra de 184 mediante un muestreo aleatorio simple. Los instrumentos utilizados fueron el cuestionario de implementación y el de conducta de preparación ante*

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desastres. **Resultados:** *Los resultados de la prueba de Spearman rho indican una relación significativa entre la implementación del Programa de Escuelas Seguras para Desastres entre los estudiantes y la conducta de preparación ante desastres (r = 0,623).* **Conclusión:** *Este estudio concluye que la implementación del Programa de Preparación para Desastres en Escuelas Seguras se asocia con la conducta de preparación ante desastres de los estudiantes de secundaria.*

Palabras clave: *Programa de educación para la reducción del riesgo de desastres, preparación ante desastres, comportamiento, estudiantes.*

INTRODUCTION

The intensity of disaster events has continued to increase in recent decades, encompassing both natural and non-natural disasters. In Indonesia, some of the worst disasters to occur include the earthquake, tsunami, and liquefaction in Palu and Donggala in 2018; the West Sumatra earthquake in 2009; the Yogyakarta earthquake in 2006; and the Aceh earthquake and tsunami in 2004 (1). Indonesia is a country prone to disasters because it lies along the Asia-Pacific Ring of Fire, making it susceptible to earthquakes, tsunamis, volcanic eruptions, floods, and droughts. Indonesia has experienced an average of 290 natural disasters annually over the past 30 years (2). Disaster preparedness among students is currently being promoted and encouraged in education (3). Disaster preparedness is an effort to socialize students and shape their behavior in the face of disasters. This is very important to help students understand the goals and benefits of studying disaster preparedness (4).

Disaster preparedness can shape a caring character and create a supportive environment for mitigating the negative impacts of disasters (5). Disaster nursing refers to the provision of services during a disaster. Students' knowledge and skills are essential for reducing disaster risks and providing services during emergency response to victims (6). Disaster occurrences are unpredictable, so to anticipate disasters when students are at school, it is very important to implement the Disaster Safe School Unit (Safe School Disaster Program (SSDP)) program. The implementation of the Safe School Disaster Program is regulated by the Minister of Education and Culture Regulation Number 33 of 2019 concerning the Implementation of the Safe School Disaster Program (SSDP). This activity is carried out during normal or pre-disaster situations, during emergencies, and post-disaster situations (7).

The Safe School Disaster Program (SSDP) implementation consists of 1. Enhance the capacity of resources in educational units to address and reduce disaster risks. 2. Protect investments in educational units to ensure safety from disasters. 3. Improve the quality of facilities and infrastructure in educational units to ensure safety from disasters. 4. Provide protection and safety to students, educators, and educational staff from the impacts of disasters in educational units. 5. Ensure the continuity of educational services in educational units affected by disasters. 6. Provide educational services that align with the disaster risk characteristics and needs of educational units. 7. Recover from the impacts of disasters in educational units. 8. Build the independence of educational units in implementing the Safe School Disaster Program (SSDP) (8).

The United Nations International Children's Emergency Fund shows that 41.1 % of students in Indonesia are disaster-ready, placing Indonesia fifth out of 78 countries (9). They can make a substantial contribution to raising public awareness because they are an active and imaginative age group. However, the development of disaster-responsive communities is often hampered by adolescents' lack of awareness and understanding of disaster hazards. Therefore, disaster preparedness education is a planned step to equip adolescents with the information and skills they need to handle emergencies (10). This program teaches disaster mitigation techniques, such as evacuation and the use of emergency equipment, while also raising awareness of various types of disasters. Adolescents can actively participate in this education by using participatory learning techniques, which make it easier for them to understand and apply preparedness themes in their daily lives.

This condition generates high motivation among teachers, students, and parents. As the risk of disasters increases and disaster-related incidents occur, many schools are beginning to implement various prevention and preparedness

programs (11). One effort to create a safe and supportive school environment is the Disaster-Safe Education Unit Program (Safe School Disaster Program (SSDP)) (12). This program is designed to provide a conducive atmosphere and foster inclusive learning motivation, cultivate environmental awareness, and enhance preparedness behavior for disaster occurrences. Although extensive training has been conducted and implemented across various schools, the effectiveness of this training in relation to disaster preparedness behavior remains under further investigation (13).

Therefore, this research was conducted to determine whether there is a relationship between the implementation of the Safe School Disaster Program (SSDP) and students' disaster preparedness behavior at Jember Junior High School. This education aims to enhance students' knowledge and skills in disaster preparedness, starting early in middle school. Students need to be skilled in disaster readiness. To enhance students' knowledge and skills in disaster response, it is necessary to prepare them at the secondary level through curriculum development (14). Disaster education at the secondary level is implemented only as a subject, not yet at the stage of preparing students to be competent in disaster emergency response. This study aimed to determine the implementation of the Safe School Disaster Education Unit Program and its relationship to disaster preparedness behavior among junior high school students.

METHODS

This is a quantitative correlational study aimed at determining the relationship between the implementation of the Safe School Disaster Program (SSDP) and students' disaster preparedness behavior. The approach used is cross-sectional, meaning that data collection is conducted simultaneously at one point in time for both variables.

The population in this study consists of all students in the junior high school classes, totalling 346. The sample size of 184 students was determined using the Slovin formula. The sampling technique used is simple random sampling, with all students assigned sequential numbers and randomly selected using the Spin Wheel application.

The instruments used in this study consist of two questionnaires. The first questionnaire to measure the implementation of the Disaster Safe School Program (Safe School Disaster Program (SSDP)) consists of 15 statements based on the Safe School Disaster Program (SSDP) guideline book (15) covering aspects of policy, program implementation, student participation, parental participation, as well as facilities and infrastructure. The assessment uses a Likert-scale questionnaire, with a low score of less than 60 %, a fair score of 60 %-79 %, a good score of 80 %-90 %, and a very good score of 91 %-100 % implementation. The second questionnaire measures disaster preparedness behavior, consisting of 15 statements. Disaster preparedness, with a frequency scale from 'never' to 'always'. With a low score category (less than) a value of 10-15 with code 1, medium (sufficient) with a value of 16-20 code 2, high (good) with a value of 21-25 code 3, and very good with a value of 26-30 code 4.

Both questionnaires have been tested for validity and reliability before use. Significance is considered valid for a p-value of < 0.05, which means Ho is accepted and is considered valid (the instrument is valid). For a p-value > 0.05, it is considered invalid, meaning Ho is rejected (the instrument is invalid). The instrument validity test was conducted with a sample size of 20 students. The results of the identification of the r-table value with a sample size of 30 people, at a significance level of 0.05, yielded an r-table value of 0.361. Therefore, if the calculated value obtained from the instrument validity test is $>$ 0.361, it is considered valid. The results of the validity test showed that all instrument items used by the researcher had calculated r values $>$ the r-table, except for the variable with the number of statements, which had a calculated r value of -0.71 ($p = 0.711$), indicating that the instrument was not valid.

Ethical Approval. This research has received ethical approval from the Health Research Ethics Committee (KEPK) of the Faculty of Health Sciences, Muhammadiyah University of Jember, with letter number: No. 00310/KEPK/FIKES/IV/2025.

RESULTS

General data collected includes respondents' age and gender. Meanwhile, specific data contains dependent and independent variables.

Table 1 shows that most respondents are 12-13 years old, totalling 118 students (64.1 %). It shows that the majority of respondents are female, representing 93 students (50.5 %).

Table 1. Frequency distribution of respondents' characteristics (ages and gender), students at junior high school in May 2025 (n=184)

Category	Frequency (f)	Percentage (%)
Ages (year)		
10-11	9	4.9
12-13	118	64.1
14-15	57	31.0
Total	184	100.0
Gender		
Male	91	49.5
Female	93	50.5
Total	184	100.0

Implementation of the Disaster Safe Education Unit (Safe School Disaster Program (SSDP) program.

Table 2. Frequency Distribution of Disaster Education Program Implementation and Preparedness Behavior among Students at Jember Middle School in May 2025 (n=184)

	Category	Frequency (f)	Percentage (%)
Implementation Safe	Very Good	100	54.3
School	Good	25	13.6
Disaster	Enough	42	22.8
Program (SSDP)	Not Good	17	9.3
Total		184	100.0
Disaster	Very good	157	83.7
preparedness	good	18	9.8
behavior	enough	5	2.7
	Not good	4	2.2
Total		184	100.0

As shown in Table 2, most respondents, that is, 100 students (54.3 %), believe that the implementation of the disaster-safe education unit program for students at junior high school has been carried out well, and the majority of respondents have very good disaster preparedness behavior, with 157 students (83.7 %).

The Relationship Between the Implementation of the Disaster (Safe School Disaster Program (SSDP)) and Disaster Preparedness Behavior Among Students

Table 3. The Relationship Between the Implementation of Disaster-Safe Education Unit Programs and Disaster Preparedness Behavior Among Students at Jember Junior High School in May 2025

Implementation of Safe School Disaster Program (SSDP)	Disaster preparedness behavior						
	Very good	good	Enough	Not good	Total	*p*	r
Very Good	99	19	5	2	125		
Good	18	20	3	1	42	0.001	0.623
Enough	5	4	2	1	12		
Not Good	2	2	1	0	5		
Total	124	45	11	4	184		

Table 3 indicates that most respondents stated that the implementation of the Disaster Safe School Unit (Safe School Disaster Program (SSDP)) program in schools has been very successful. This aligns with the finding that most students have improved their disaster preparedness behavior. The results of the Spearman's rho statistical test show a p-value < 0.05, which indicates a significant relationship between the implementation of the Disaster Safe School Program (Safe School Disaster Program (SSDP)) and disaster preparedness behavior. The correlation coefficient (r) of 0.623 indicates a positive relationship, though it is weak. These findings suggest that the better the implementation of the Disaster Safe School Unit (Safe School Disaster Program (SSDP)) program, the higher the disaster preparedness behavior exhibited by Jember junior high school students.

DISCUSSION

Most students at Junior high school believe that the Disaster-Resilient School Program (Safe School Disaster Program (SSDP)) has been implemented very well. This reflects a supportive and safe school environment for students. These findings align with the Health Promotion Model theory by Nola J. Pender (16), which states that a positive physical and social environment encourages the formation of healthy behaviors. El Nokali et al. (17) emphasize that teacher and parent involvement is a significant factor in the program's success. Therefore, collaboration between school students and parents is a key factor in creating a healthy learning environment and supporting students' overall development, especially in fostering students' awareness of disasters.

Our present findings show that the majority of students at Jember Middle School have demonstrated increased disaster preparedness behavior, in line with the Health Promotion Model (HPM) theory by Nola J. Pender theory. This behavior is closely related to low perceived self-efficacy as well as a lack of social control and environmental support. Wahyuning et al. (14) state that disaster preparedness behavior is more often practiced because it is considered important for fostering concern and building a resilient character ready to face disasters. Additionally, disaster-related behavior significantly impacts students' emotions. While the SSDP provides foundational knowledge, disaster preparedness is also shaped by students'

awareness, concern, and resilience. These psychosocial factors influence the psychological impact of preparedness behaviors, underscoring the need for schools to integrate emotional support and resilience-building strategies into SSDP implementation (15).

Education serves as a strategic means to introduce students to the potential of disasters and their risks, so that they will become future citizens aware of natural disasters. Disaster risk education, or, more popularly, disaster education or disaster risk education, is the process of building awareness that begins with creating knowledge, understanding, and actions that promote preparedness, prevention, and recovery. In this case, risk education refers to the process that begins with building knowledge of the environment and understanding natural phenomena and their risks, so that actions and behaviors can be calculated in emergencies (18). Therefore, risk education is a process of socialization, understanding of science (natural phenomena), and the development of safety-related skills, accompanied by increased awareness of natural disasters. Based on the present findings, there is a significant relationship between the implementation of the Disaster-Resilient School Program (Safe School Disaster Program (SSDP)) and students' disaster preparedness behavior. The better the implementation of the Disaster-Resilient School Program (Safe School Disaster Program (SSDP)), the lower the incidence of disaster preparedness (14).

This shows that a disaster-safe school environment for students plays a vital role in preparedness, and the Health Promotion Model (HPM) theory by Nola J. Pender explains that situational factors, such as school environment support, can enhance students' self-confidence to refrain from engaging in disaster preparedness and encourage their commitment to positive behaviors (19). Disaster-Resilient School Units (Safe School Disaster Program (SSDP)) serve as situational influences that foster a culture of mutual respect and reject violence. These findings are reinforced by research indicating that a non-conducive school environment increases the risk of disaster preparedness, as well as by Lombardi et al. (20), who show that school-based interventions effectively create a favorable climate.

A limitation of the research is that the implementation time for the SSDP program is relatively short, so changes in students' preparedness behavior may not yet be fully or sustainably visible. A long-term evaluation to assess the sustainability of preparedness behavior has not been conducted in depth. School culture and social support from parents or the surrounding community have not been included as reinforcing variables in the SSDP implementation model (21).

CONCLUSION

It can be concluded that the Disaster-Resilient School Program (Safe School Disaster Program (SSDP)) is not merely a policy but a concrete strategy for shaping positive student preparedness behavior and disaster resilience, and it reflects the school's commitment to ensuring students' rights and welfare. These results can serve as input for schools to strengthen the implementation of the Disaster Safe School Program (Safe School Disaster Program (SSDP)) and encourage student and parent involvement. For healthcare professionals, these findings support the importance of promoting mental health in schools. Researchers are advised to examine other factors that influence disaster preparedness, such as peer influences and parenting styles.

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