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Disaster Preparedness for Children: Systematic Literature Review Study

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ABSTRACT

Ternate City, situated on the Pacific Ring of Fire, faces frequent natural disasters, particularly volcanic eruptions from Mount Gamalama, posing significant risks to children. This study aims to address the gap in disaster education by evaluating existing programs and providing actionable recommendations to enhance children's preparedness. A systematic literature review analyzed data from databases like Scopus and Google Scholar, focusing on disaster education tailored to children in volcanic regions. The findings highlight the benefits of disaster education programs in improving children's knowledge, awareness, and resilience. Effective programs emphasize age-appropriate learning methods, community engagement, and psychological preparedness. However, gaps remain in implementation, especially concerning innovative teaching tools and comprehensive risk education. This study recommends incorporating localized cultural contexts, creative teaching methods, and the integration of disaster education into school curricula. These measures aim to empower children as active participants in disaster risk reduction, fostering a more resilient community.

Keywords: *disaster mitigation; Ternate Island; children.*

ABSTRAK

Kota Ternate terletak di Cincin Api Pasifik, sering menghadapi bencana alam, terutama letusan gunung berapi dari Gunung Gamalama, menimbulkan risiko yang signifikan bagi anak-anak. Studi ini bertujuan untuk mengatasi kesenjangan dalam pendidikan bencana dengan mengevaluasi program yang ada dan memberikan rekomendasi yang dapat ditindaklanjuti untuk meningkatkan kesiapsiagaan anak-anak di Kota Ternate. Penelitian ini menggunakan system literatur review, data dari database seperti Scopus dan Google Scholar dianalisis, dengan fokus pada pendidikan bencana yang disesuaikan untuk anak-anak di daerah vulkanik. Temuan ini menyoroti manfaat program pendidikan kebencanaan dalam meningkatkan pengetahuan, kesadaran, dan ketahanan anak-anak. Program yang efektif menekankan metode pembelajaran yang sesuai dengan usia, keterlibatan masyarakat, dan kesiapan psikologis. Namun, masih ada kesenjangan dalam implementasi, terutama mengenai alat pengajaran yang inovatif dan pendidikan risiko yang komprehensif. Penelitian ini merekomendasikan untuk memasukkan konteks budaya lokal, metode pengajaran kreatif, dan integrasi pendidikan bencana ke dalam kurikulum sekolah. Langkah-langkah ini bertujuan untuk memberdayakan anak-anak sebagai peserta aktif dalam pengurangan risiko bencana, membina komunitas yang lebih tangguh.

Kata Kunci: *mitigasi bencana; Pulau Ternate; anak-anak.*

INTRODUCTION

Ternate City, a small yet densely populated island, is particularly vulnerable to natural calamities, with a significant number of children at risk due to frequent disasters such as earthquakes, volcanic eruptions, and tsunamis due to its geographical location. Hence, comprehensive disaster education programs, particularly for children, are urgently required. Such initiatives help improve children's readiness and resilience and reduce the impact of catastrophes on them. Effective disaster education programs for children are especially crucial in Ternate City, given the rising frequency of natural catastrophes. As a result, children in Ternate City must be provided with the information and skills required to respond successfully to such events. Research has revealed that disaster preparedness among adults and children is frequently low, even in high-risk locations (Boon and Pagliano, 2015). Disaster education should be included in school curricula to improve school communities' readiness in the face of earthquake and tsunami risks (Nandi and Havwina, 2018). Furthermore, the role of critical thinking in disaster preparedness, cultural adaptation for disaster response, and earthquake disaster mitigation explanations for students are all important factors to consider when equipping children with the knowledge and skills they need to respond effectively to disasters (Nurfalah et al., 2022).

Mount Gamalama in Ternate City is a prominent stratovolcano that presents several hazards associated with eruptions, including volcanic earthquakes, sector collapse, rock avalanches, and volcanic tsunamis (Raharjo et al., 2022). The necessity for educating the population about disaster risk reduction and enhancing their preparation has been recognized due to the high activity of the volcano in North Maluku Province (Kadir and Nurdin, 2022). The challenges of volcanic crisis management on small islands such as Ternate are also the focus of research. The relationship between the repose period and the magnitude of volcanic eruptions is emphasized to improve community preparedness (Hidayat et al., 2020). Transportation infrastructure in Ternate City has an important role in disaster mitigation. Previous eruptions indicate the need for research on potential impacts and the formulation of mitigation measures. Evaluation of the relationship between repose period and eruption magnitude by Hidayat et al. (2020) contributed to the development of strategies to reduce risk and improve preparedness, with positive impacts on children's safety and well-being. The importance of disaster education programs for children in Ternate City was confirmed as a critical step to improve preparedness for potential volcanic eruptions and reduce the impact on their safety and well-being.

The key results of children's preparedness and education in catastrophe scenarios indicate that disaster education programs have a beneficial effect on children's readiness and ability to cope with disasters. Evidence has demonstrated that these programs enhance children's comprehension and awareness of potential disasters, as well as their grasp of appropriate safety protocols and evacuation paths. The research conducted by Shoji et al. (2020) emphasized the favorable impact on students' opinions of their capacity to handle catastrophe risks and identify suitable solutions in the case of an earthquake. In addition, Sujaya et al. (2023) highlighted the significance of incorporating climate change, disaster management, and natural catastrophe risks into the curriculum and teaching techniques as a means of equipping the younger generation to tackle forthcoming environmental difficulties. Despite the relevance of disaster education programs for children, there has been little empirical study on their usefulness in the context of a probable eruption of Mount Gamalama in Ternate City. Several studies have demonstrated the efficacy and advantages of disaster education programs for children; nevertheless, poor execution might raise children's fear and anxiety (Li and Zhou, 2021). The responses of children to catastrophe hazards and protective interventions are frequently used to evaluate program efficacy. According to research, disaster education programs can promote environmental awareness and resilience when applied properly (Gani et al., 2023). Disaster education could also incorporate psychological first aid for pupils (Yuwanto et al., 2017).

The study gaps underline the importance of conducting a full review and developing tailored treatments to address the unique threats posed by Mount Gamalama in Ternate City. The evaluation should take into account the long-term effects on children's resilience and psychological well-being. This study intends to

increase children's readiness in Ternate City through disaster education, particularly in light of the impending eruption of Mount Gamalama. The purpose is to discover, analyze, and enhance existing disaster education programs so that students are better prepared for probable mountain eruptions.

METHODS

This research used a systematic literature review, which was conducted utilizing a comprehensive search in multiple databases such as Web of Science, Google Scholar, Scopus, and others, using keywords such as disaster education, children, preparation, resilience, and Mount Gamalama. The search will include works published in English within the last ten years that focus on disaster education programs explicitly geared at children in volcanic eruption-prone areas, including Mount Gamalama. The search encompasses quantitative and qualitative research, as well as grey literature, such as reports and guidelines from relevant organizations.

The selected papers will be assessed for relevance to the study topics and inclusion criteria. Data from the selected articles will be retrieved and evaluated thematically to discover significant themes and patterns connected to Ternate City's disaster education initiatives, as well as their efficacy. The study results will be combined and presented in a narrative synthesis that emphasizes the strengths and flaws of current programs and suggests major recommendations for change (Table 1).

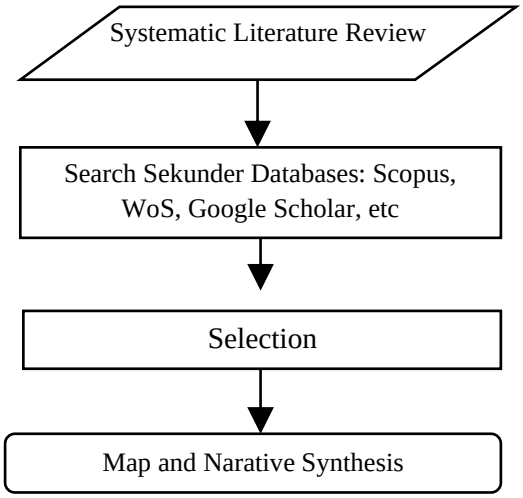

Figure 1. Literature Review Process

RESULTS

In reviewing the disaster preparedness of children in relation to Mount Gamalama's activity, it is crucial to focus on how disaster education programs are implemented rather than detailing the history of volcanic eruptions. The North Maluku Provincial Government, through the Regional Disaster Management Agency (BPBD), has issued a circular titled "Himbauan Bencana Gunung Api Gamalama," which outlines precautionary measures based on recent seismic activity. Data on Mount Gamalama's activity in January 2024 is presented in Table 1.

Table 1. Mount Gamalama Activity in January 2024

No.	Date	Type of Earthquake	Number of Time
1	January 4, 2024	Deep Vulcano Earthquake	45
2	January 1-3, 2024	Tremor Earthquake	34
3	January 1-3, 2024	Deep Vulcano Earthquake	57
4	January 1-3, 2024	Local Tectonic Earthquake	55
5	January 1-3, 2024	Distant Tectonic Earthquake	359
6	January 1-3, 2024	Flood Vibration Earthquake	6

Sources: BPDB, 2024.

Table 1 shows that Mount Gamalama's volcanic activity has changed significantly in recent days, particularly between January 1 and 5, 2024. The increase in Deep Volcanic Earthquakes (VA), with 45 events recorded on January 4 alone, along with the observed crater eruption activity, indicates heightened magmatic processes and internal pressure within the volcano. These seismic changes align with broader regional tectonic activities in the Halmahera Islands and serve as critical signals for disaster preparedness initiatives.

In this context, the fluctuations in Mount Gamalama's activity underscore the urgency of strengthening disaster education programs, particularly for children. The data highlights the need for real-time integration of volcanic activity reports into school disaster drills, ensuring that students can recognize early warning signs and respond appropriately. However, findings from this study indicate gaps in implementation, including inconsistencies in school-based evacuation simulations, limited accessibility to child-friendly educational resources, and varying levels of preparedness among educators. Addressing these gaps is crucial to enhancing children's ability to respond effectively in the event of an eruption, making disaster education a fundamental component of broader mitigation strategies in Ternate City.

DISCUSSION

In the face of variable Mount Gamalama activity, the importance of disaster mitigation education for children becomes evident. This training is critical for providing students with the necessary information and abilities for dealing with the possible threats of a mountain eruption. The efficiency of Ternate City's present disaster education programs in preparing youngsters for the anticipated eruption of Mount Gamalama is a crucial issue that must be addressed. Ternate, a volcanic island produced by Mount Gamalama's eruption, presents unique catastrophe planning concerns (Hidayat et al., 2020). The city's transportation infrastructure design includes evacuation routes for catastrophe victims, demonstrating some level of readiness (Raharjo et al., 2022).

However, the Ternate City government's crucial public policy formulation prioritizes infrastructure development, community participation, and network expansion, indicating the need for a more comprehensive disaster education program (Deni et al., 2019). Although Ternate City's current disaster education program has strengths such as evacuation routes and community involvement, there may be gaps in knowledge dissemination, communication strategies, and the use of creative and innovative learning packages that engage children. As a result, it is critical to examine the efficacy of these initiatives in preparing youngsters for a possible eruption of Mount Gamalama.

Several studies have favorably supported disaster mitigation education in Indonesia, which has been shown to lessen the impact of catastrophes and boost community resilience. Furthermore, past research indicates that educational activities outside of formal contexts, such as community-based training, have the potential to be beneficial (Hoffmann and Blecha, 2020). However, a thorough examination of disaster education programs for children revealed a lack of empirical evidence of effectiveness, indicating the need for more comprehensive assessment and modification of existing programs (Johnson et al., 2014). In this context, a detailed study is required, particularly in Ternate City, which faces the potential eruption of Mount Gamalama. This assessment should take into account key factors such as material substance, delivery mode, accessibility, inclusivity, community engagement, information dissemination efficacy, and influence on children's readiness and reaction (Amri et al., 2017).

Furthermore, the contextualization of disaster risk reduction education in Indonesia confirms the need for a comprehensive and integrated approach to addressing issues such as low levels of training, interconnectedness of social capital, previous disaster experiences, and barriers to interpreting symbols in indigenous knowledge (Abdulharis et al., 2022). By considering these factors into account, reviewing and upgrading disaster education programs in Ternate City is predicted to have a good impact, particularly in terms of enhancing children's readiness for a future eruption of Mount Gamalama.

When measuring the impact of disaster education programs, it is critical to examine the behavioral repercussions that result from them. For example, research assessing the benefits of a recently implemented disaster education program in Indonesia discovered strong

evidence of students' earthquake reactions, suggesting the potential usefulness of precisely targeted disaster education programs (Shoji et al., 2020). Furthermore, leveraging the popularity and availability of gaming platforms, such as Roblox-based tsunami survival games, can significantly contribute to the development of effective disaster education strategies for children, demonstrating the potential for innovative approaches in disaster education (Maulida et al., 2023). Overall, evaluating the effectiveness of disaster education programs in preparing children for the likely eruption of Mount Gamalama requires considering program content, delivery methods, community engagement, and long-term behavioral implications (Takenouchi et al., 2023).

Evaluating the Effectiveness of Current Disaster Education

Assessing the efficiency of disaster education is critical to ensuring the safety and readiness of populations in disaster-prone locations, particularly Ternate City. Several literature references have offered useful insights for evaluating disaster education programs and their efficacy. Kitagawa (2021) presents a conceptual framework for disaster education intending to integrate existing literature and connect it to educational concepts, thereby providing a significant theoretical foundation for a thorough understanding of disaster education and assessing its effectiveness. Djalante (2018) provides a thorough evaluation of research trends and literature on natural catastrophes, risk mitigation, and climate change in Indonesia. Although not specifically focused on analyzing the performance of disaster education programs, this reference provides a complete overview of the academic landscape linked to disaster risk reduction, which might be useful in evaluating current programs. Widowati et al. (2021) discuss primary schools' preparedness to face disasters and maintain safety, emphasizing the importance of assessing school vulnerability, which is a critical aspect in determining the effectiveness of disaster education programs, particularly in ensuring children's safety.

In this context, the research by Kitagawa (2021), Djalante (2018), and Widowati et al. (2021) give valuable insights for assessing the efficacy of existing disaster education initiatives. They give insights into conceptual frameworks, research trends, and educational institutions' readiness for catastrophe. Information from these sources can help establish a thorough assessment framework for disaster education programs in Ternate City, especially in the event of a Mount Gamalama eruption. Kitagawa's conceptual framework, in particular, helps guide the assessment process by connecting disaster education literature to educational principles, providing a theoretical foundation for evaluating the success of disaster education programs. This methodology can help measure the knowledge, readiness, and resilience of Ternate City children before and after they participate in a disaster education program. Meanwhile, Djalante's evaluation of the academic environment for disaster risk reduction might shed light on essential concepts and methodologies to examine when evaluating disaster education programs.

The Potential Consequences of Ternate City Children's Preparedness for the Mount Gamalama Disaster

The potential influence of disaster preparedness on children in Ternate City, particularly regarding Mount Gamalama, could be enormous. Children and adolescents are considered possible *"agents of change*" in disaster risk reduction activities because they may influence and improve community safety (Yeon et al., 2020). Disaster mitigation education can be effectively instilled in elementary and junior high school students by using engaging and age-appropriate methods, such as moral quandaries in comics and integrated disaster education in social studies (Hoffmann and Blecha, 2020). This educational effort intends to train the next generation of disaster responders, increase students' earthquake readiness through personal experience, knowledge, and self-efficacy, and contribute to community resilience through disaster mitigation education for elementary school children. By adopting this disaster education program, Ternate City students can have the information, abilities, and mentality required to respond successfully to the anticipated eruption of Mount Gamalama.

Children may learn more about catastrophe risks and acceptable actions by including disaster education in the curriculum and employing engaging tactics such as moral dilemmas in comics and social studies. This can boost children's knowledge, readiness, and

resilience in Ternate City, particularly in light of Mount Gamalama's possible repercussions (Warlim et al., 2022). Furthermore, these educational activities can have a larger influence on families and communities by empowering children to disseminate disaster preparation knowledge to their own families and communities (Nishiyama and Glauberman, 2022). Ternate City may establish a more resilient community capable of reacting to possible calamities, such as Mount Gamalama's eruption, by providing children with disaster preparedness information and skills (Nurfalah et al., 2022).

Recommendations to Improve Disaster Education Programs

The relevant research provides some essential recommendations for improving the effectiveness of disaster education programs in Ternate City. First, community-based disaster response teams must be established with clear roles and responsibilities in planning and implementation. Improved collaboration between local governments, NGOs, and citizens is critical in generating community disaster risk maps (Cui et al., 2018). Another option is to provide nurses with access to evidence-based disaster education and competency building. This should be included in academic and lifelong learning programs, with an emphasis on population-based outcomes for catastrophe victims (Herdiansyah et al., 2020). Disaster management education programs should better educate students about diverse natural catastrophes and increase their ability to foresee and control hazards. Teachers at the elementary and junior high school levels must include this in their regular lessons (Nagata and Kimura, 2017).

Other recommendations include implementing emergency nurse programs and training to strengthen disaster care and preparation core competencies (Park and Kim, 2017). Effective disaster education programs can avoid or reduce the effect of catastrophes and should be tailored for all parties involved. There is also a focus on building formal education programs with better requirements for nurses, as well as enhancing their disaster-related knowledge and abilities. Earthquake disaster education programs have been shown to improve children's and teenagers' disaster comprehension (Al-qbelat et al., 2022). The incorporation of health education into disaster risk reduction is also deemed crucial, as evidenced by learning after natural disasters. Education programs in disaster-prone schools can promote environmental awareness and resilience by improving policies and programs, and addressing current difficulties (Pascapurnama et al., 2018). Disaster risk mitigation in early childhood education has been found to enhance preschool quality and child outcomes (Proulx and Aboud, 2019). The significance of creating and executing ICT-based disaster prevention and mitigation education programs for the next generation was also stressed (Loke et al., 2021).

These recommendations, which include disaster response teams, nurse competencies, disaster management, and standardized formal programs, not only address immediate disaster preparedness and response needs but also prioritize long-term strategies for disaster risk reduction, mitigation, and recovery in communities. This holistic strategy seeks to guarantee that all stakeholders, including children, nurses, and health professionals, are prepared and capable of responding effectively to future catastrophic occurrences, such as the probable eruption of Mount Gamalama in Ternate City.

CONCLUSION

Educational institutions and local authorities in Ternate City must give utmost importance to and carry out extensive disaster education programs that specifically target the dangers and problems associated with the potential eruption of Mount Gamalama. It is important to customize these programs based on the age and developmental stage of children and adolescents. This will provide them with practical skills, information, and strategies to respond effectively to a disaster. Children can actively participate in meaningful experiences by using various educational techniques and materials, including posters, poetry, creative dance, and incorporating local wisdom.

It is critical to provide a caring and responsive educational environment for children and adolescents in Ternate, especially given the likely eruption of Mount Gamalama, in order to enhance disaster preparedness. This educational effort aims not only to educate children about emergency situations but also to empower them to play an active role in risk reduction and community development. By equipping children with the necessary

knowledge, skills, and attitudes to respond to catastrophes, they can become agents of change, inspiring their families and communities. The objective is for young people to not only receive information but also become ambassadors of disaster preparedness who positively influence their surroundings. Therefore, Ternate's educational institutions and municipal authorities must prioritize and implement a comprehensive disaster education program.

REFERENCE

Abdulharis, R., Handayani, A. P., Isouchi, C., and Meilano, I. (2022). Developing Community Disaster Resilience in the Lembang Fault Area, Indonesia: Lessons Learned from Japanese Experience. *Applied Sciences (Switzerland)*, *12*(3). https://doi.org/10.3390/app12031271

Al-qbelat, R. M., Subih, M. M., and Malak, M. Z. (2022). Effect of Educational Program on Knowledge, Skills, and Personal Preparedness for Disasters Among Emergency Nurses: A Quasi-Experimental Study. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *59*, 004695802211308. https://doi.org/10.1177/00469580221130881

Amri, A., Bird, D. K., Ronan, K., Haynes, K., and Towers, B. (2017). Disaster Risk Reduction Education in Indonesia: Challenges and Recommendations for Scaling Up. *Natural Hazards and Earth System Sciences*, *17*(4), 595–612. https://doi.org/10.5194/nhess-17-595-2017

Boon, H. J., and Pagliano, P. J. (2015). Disaster Education in Australian Schools. *Australian Journal of Environmental Education*, *30*(2), 187–197. https://doi.org/10.1017/aee.2015.8

BPDB. (2024). *Himbauan Bencana Gunung Api Gamalama*.

Cui, K., Han, Z., and Wang, D. (2018). Resilience of an Earthquake-Stricken Rural Community in Southwest China: Correlation with Disaster Risk Reduction Efforts. *International Journal of Environmental Research and Public Health*, *15*(3), 407. https://doi.org/10.3390/ijerph15030407

Deni, S., Rasai, J., and Saing, Z. (2019). Public Policy Analysis on Disaster Threat Due to Geo-Environmental Condition of Tugurara River in Ternate City, North Maluku Province. *International Journal of GEOMATE*, *17*(60), 211–218. https://doi.org/10.21660/2019.60.761131

Djalante, R. (2018). Review article: A Systematic Literature Review of Research Trends And Authorships on Natural Hazards, Disasters, Risk Reduction and Climate Change in Indonesia. *Natural Hazards and Earth System Sciences*, *18*(6), 1785–1810. https://doi.org/10.5194/nhess-18-1785-2018

Gani, S. A., Yusuf, Y. Q., and Yusuf, R. (2023). Implementing the Disaster Education Program at an Elementary School in the Devastating Tsunami Affected Area: A Case Study in Aceh, Indonesia. *Kasetsart Journal of Social Sciences*, *44*(3), 947–958. https://doi.org/10.34044/j.kjss.2023.44.3.33

Herdiansyah, H., Husein, S., Asrofani, F., Simamora, P., and Kholila, B. (2020). Disaster Awareness through Disaster Preparedness Education for Primary Schools. *IOP Conference Series: Earth and Environmental Science*, *519*(1), 012016. https://doi.org/10.1088/1755-1315/519/1/012016

Hidayat, A., Marfai, M. A., and Hadmoko, D. S. (2020). Eruption Hazard and Challenges of Volcanic Crisis Management on A Small Island: A Case Study on Ternate Island - Indonesia. *International Journal of GEOMATE*, *18*(66), 171–178. https://doi.org/10.21660/2020.66.ICGeo43

Hoffmann, R., and Blecha, D. (2020). Education and Disaster Vulnerability in Southeast Asia: Evidence and policy Implications. *Sustainability (Switzerland)*, *12*(4). https://doi.org/10.3390/su12041401

Johnson, V. A., Ronan, K. R., Johnston, D. M., and Peace, R. (2014). Evaluations of Disaster Education Programs for Children: A Methodological Review. *In International Journal of Disaster Risk Reduction* (Vol. 9, pp. 107–123). Elsevier Ltd. https://doi.org/10.1016/j.ijdrr.2014.04.00

1

Kadir, M. Y. A., and Nurdin, N. (2022). Global Transformation of Disaster Sciences into Risk Reduction Education System in Indonesia. *Jamba: Journal of Disaster Risk Studies*, *14*(1). https://doi.org/10.4102/JAMBA.V14I1.1257

Kitagawa, K. (2021). Conceptualising 'Disaster Education.' *Education Sciences*, *11*(5). https://doi.org/10.3390/educsci11050233

Li, X., and Zhou, S. (2021). Parental Worry, Family-based Disaster Education and children's Internalizing and Externalizing Problems During the COVID-19 Pandemic. *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*(4), 486–495. https://doi.org/10.1037/tra0000932

Loke, A. Y., Guo, C., and Molassiotis, A. (2021). Development of Disaster Nursing Education and Training Programs in the Past 20 Years (2000–2019): A Systematic Review. *Nurse Education Today*, *99*. https://doi.org/10.1016/j.nedt.2021.104809

Maulida, A., Hanif, H., Kamal, M., and Suryani Oktari, R. (2023). Roblox-based Tsunami Survival Game: A Tool to Stimulate Early Childhood Disaster Preparedness Skills. *E3S Web of Conferences*, *447*, 02003. https://doi.org/10.1051/e3sconf/202344702003

Nagata, T., and Kimura, R. (2017). Proposing A Multi-Hazard Approach to Disaster Management Education to Enhance Children's "Zest for Life": Development of Disaster Management Education Programs to Be Practiced by Teachers. *Journal of Disaster Research*, *12*(1), 17–41. https://doi.org/10.20965/jdr.2017.p0017

Nandi, N., and Havwina, T. (2018). The Preparedness Level of School Community in Handling the Earthquake and Tsunami Threats in Banda Aceh City. *IOP Conference Series: Earth and Environmental Science*, *145*(1). https://doi.org/10.1088/1755-1315/145/1/012097

Nishiyama, M., and Glauberman, G. H. R. (2022). Disaster Preparedness among Foreign Residents in a Rural Area of Japan: A Qualitative Pilot Study. *Health Emergency and Disaster Nursing*, *9*(1), 2020–0013. https://doi.org/10.24298/hedn.2020-0013

Nurfalah, I., Maryanti, R., Wulandary, V., and Irawan, A. R. (2022). Earthquake Disaster Mitigation Explanation to Prepare a Disaster Response Generation for Students in 3th-Grade of Elementary School. *ASEAN Journal of Science and Engineering Education*, *2*(2), 147–152. https://doi.org/10.17509/ajsee.v2i2.38687

Park, H.-Y., and Kim, J.-S. (2017). Factors Influencing Disaster Nursing Core Competencies of Emergency Nurses. *Applied Nursing Research*, *37*, 1–5. https://doi.org/10.1016/j.apnr.2017.06.004

Pascapurnama, D. N., Murakami, A., Chagan-Yasutan, H., Hattori, T., Sasaki, H., and Egawa, S. (2018). Integrated Health Education in Disaster Risk Reduction: Lesson Learned from Disease Outbreak Following Natural Disasters in Indonesia. *International Journal of Disaster Risk Reduction*, *29*, 94–102. https://doi.org/10.1016/j.ijdrr.2017.07.013

Proulx, K., and Aboud, F. (2019). Disaster Risk Reduction in Early Childhood Education: Effects on Preschool Quality and Child Outcomes. *International Journal of Educational Development*, *66*, 1–7. https://doi.org/10.1016/j.ijedudev.2019.01.007

Raharjo, E. P., Sarjana, S., and Safitri, M. (2022). Transportation Infrastructure Planning in Supporting Disaster Mitigation: Case Study in Mount Gamalama. *Jamba: Journal of Disaster Risk Studies*, *14*(1), 1–11. https://doi.org/10.4102/jamba.v14i1.1123

Shoji, M., Takafuji, Y., and Harada, T. (2020). Behavioral Impact of Disaster Education: Evidence from a Dance-Based Program in Indonesia. *International Journal of Disaster Risk Reduction*, *45*. https://doi.org/10.1016/j.ijdrr.2020.101489

Sujaya, K., Abdul-Haq, Z., and Imran, M. (2023). Educational Sustainability: An Anthropocenic Study in the Wake of the 2022 Floods in Pakistan. *ECNU Review of Education*.

https://doi.org/10.1177/20965311231209503

Takenouchi, K., Kawata, Y., and Tanimoto, R. (2023). Long-Term Evaluation of Disaster Education: from a Survey Across Age Groups. *Journal of Integrated Disaster Risk Management*, *12*(2), 64–90. https://doi.org/10.5595/001C.77524

Warlim, Fitria, R., Hakam, K. A., Nurbayani, S., and Supriatna, A. (2022). Disaster mitigation through Comic Moral Dilemmas for Elementary School Students. *IOP Conference Series: Earth and Environmental Science*, *1089*(1), 012068. https://doi.org/10.1088/1755-1315/1089/1/012068

Widowati, E., Istiono, W., and Husodo, A. H. (2021). The Development of Disaster Preparedness and Safety School model: A Confirmatory Factor Analysis. *International Journal of Disaster Risk Reduction*, *53*. https://doi.org/10.1016/j.ijdrr.2020.102004

Yeon, D.-H., Chung, J.-B., and Im, D.-H. (2020). The Effects of Earthquake Experience on Disaster Education for Children and Teens. *International Journal of Environmental Research and Public Health*, *17*(15), 5347. https://doi.org/10.3390/ijerph17155347

Yuwanto, L., Adi, C. M. P., & Budiman, A. F. (2017). Disaster Education Based on Psychological First-Aid for Students: Increasing Capacity Dealing with Disaster. *US-China Education Review B*, *7*(5). https://doi.org/10.17265/2161-6248/2017.05.005