

# Scopus Q2\_Improving School.pdf

*by*

---

**Submission date:** 06-Apr-2021 02:44PM (UTC+0700)

**Submission ID:** 1551732117

**File name:** Scopus Q2\_Improving School.pdf (248.92K)

**Word count:** 6874

**Character count:** 39112

# The identification of multi-hazard situations in elementary school

Improving Schools

1–13

© The Author(s) 2021

Article reuse guidelines:

[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)

DOI: 10.1177/1365480221996695

[journals.sagepub.com/home/imp](https://journals.sagepub.com/home/imp)**Evi Widowati**

Universitas Negeri Semarang, Indonesia

Universitas Gadjah Mada, Indonesia

**Wahyudi Istiono****Adi Heru Sutomo**

Universitas Gadjah Mada, Indonesia

## Abstract

This study aimed to identify various hazard risks which are related to children in schools. This study used a quantitative descriptive design. The sampling technique used was four stage stratified random sampling, with 329 elementary schools as the sample. The results identified various dangerous situations which are related to children and schools ranging from infectious diseases, natural disasters, violence against children and the dangers due to the absence of adequate safety at school. Dangers from natural disasters which could be identified were earthquake, volcano, flood, hurricane landslide, and drought as well as potential biological hazards such as contagion and caterpillar outbreak. Additionally, the dangers related to violence against children were fighting, extortion, physical violence, psychological violence, sexual violence, bullying, and stealing. Related to safety aspects at schools, there were dangerous situations caused by the activities of the children themselves which caused injuries, or other technical causes, such as fire, falling buildings/falling trees, food poisoning, and infectious diseases.

## Keywords

Children, danger identification, disaster preparedness, school-related dangers, school safety, violence prevention

## Introduction

Disasters can happen anytime and anywhere, including during school times and at school areas. Therefore, disaster risk assessment must be done by schools in order to prepare appropriate responses to minimize the loss effectively (UN, 2015; Wang, 2016). This research was aimed to identify various risks which were related to children in schools. The result of this study is expected to be able to assist schools in compiling school-based risk assessments, because how to improve school safety is an essential issue in every school system (Adolfsson & Håkansson, 2018).

---

### Corresponding author:

Evi Widowati, Universitas Negeri Semarang, Central Java, 50229, Indonesia.

Email: [eviwidowati@mail.unnes.ac.id](mailto:eviwidowati@mail.unnes.ac.id)

### *Differences in disaster definition in Indonesia and international level*

According to Law of the Republic of Indonesia Number 24 of 2007 concerning Disaster Management, disaster means ‘an event or a series of events threatening and disturbing the community life and livelihood, caused by natural and/or non-natural as well as human factors resulting in human fatalities, environmental damage, loss of material possessions, and psychological impact’ (*Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 Tentang Penanggulangan Bencana*, 2007). While the definition of disaster according to UNISDR (2009) is ‘a serious disruption of the functioning of a community or society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope with using its own resources’. The two definitions are similar, but the differences are seen in the broad impact and the emphasis on the situation which exceeds the ability of the affected community to cope by using their own resources.

### *Disasters threaten children and schools*

Various disasters have occurred in the world with children as victims which have destroyed many schools, for example the earthquake in Gujarat in 2001 which destroyed 11,600 schools and caused the deaths of more than 20,000 people of which 50% were students in schools. In an earthquake in North Pakistan in October 2005, between 17,000 and 20,000 students died because of the collapse of around 10,000 school buildings (Cambodia, 2008). One earthquake in Turkey killed 18,243 people, which included 1,387 students and 178 elementary and junior high school teachers (Ozmen, 2006). In Indonesia, the 2007 and 2009 earthquakes in West Sumatra damaged 2,800 schools. Also, in 2009, an earthquake in Tasikmalaya damaged 35 schools. In 2010, earthquakes in Mentawai destroyed seven schools and in Central Aceh in 2013 caused damage to 262 schools (BNPB, 2019; Kurniawan et al., 2016).

In Indonesia Yogyakarta is known as a city of students and is one of the iconic cities of culture in Indonesia. However, this province is also one of the most disaster-prone provinces in Indonesia including volcanic eruptions, earthquake, tornado, flood, landslide, drought, abrasion, forest, and land fire (BNPB, 2019). It is for this reason that Yogyakarta province was chosen to be the locus of this research.

### *Violence threatens children and schools*

In 2014, 37% of countries adopted the legal framework and policy to overcome violence against children in schools, and by the end of 2017 this number increased to 61% (UNICEF, 2018). Violence against children in schools can be done by school staff (principal, teachers, school administration staff, school housekeepers, security officers, school canteen officers, etc.) as well as by fellow students. One survey conducted among 3,706 students and 577 school staff members in Uganda showed that 93.3% of male students and 94.2% of elementary school girls often experienced physical violence from school staff and more than 50% reported that they experienced it in the past week. Physical violence is associated with an increased risk of poor mental health, and female students are twice as likely to result in poor educational performance. Violence in schools is a serious contributor, but so far this public health concern has not been considered to contribute to the burden of disease and poor educational performance in low and middle income environments (Devries et al., 2014, 2015). In addition to physical and/or sexual violence, bullying also occurs in schools against children. For example, out of 3,706 elementary school students in 42 elementary schools in Uganda, 29% and 34% have experienced physical and emotional violence committed by their friends, respectively (Wandera et al., 2017).

## Accidents threaten children and schools

In 2017, the U.S. Consumer Product Safety Commission (CPSC) received 13 reports of toy-related deaths, of which all victims were below 12 years. In addition, there were also injuries related to toys and household items, where from 251,700 total injuries treated in Emergency Room, an estimated 174,300 or 69% occurred among children aged 12 years or below (CPSC, 2018).

## Research methods

**Design.** This research used a quantitative descriptive design, because it aimed to represent the condition of a specific population and the data were represented quantitatively.

**Sample.** This research was conducted in Indonesia and the sampling technique used was four stage stratified random sampling. In the first stage, it used purposive sampling to choose one province which had the potential for multi-hazard threats, including both natural and non-natural disaster aspects, and Yogyakarta province was chosen. The second step was to determine the number of samples by using the Slovin formula. In the third stage, the number of elementary school samples was determined in each regency/city in Yogyakarta province proportionally. The fourth stage consisted of randomly selecting elementary school respondents in each regency/city based on the percentage of respondents. The population in this study was 1,843 elementary schools in all of the Yogyakarta province. The number of samples was determined by using a margin of error of 0.05 according to the following formula:

$$n = \frac{N}{1 + Ne^2} \text{ which was rounded to 329 elementary schools.}$$

Total respondents of this research were 329 elementary schools. The most respondents were from Sleman regency with 28% (91 schools), Gunung Kidul regency with 26% (84 schools), Bantul regency with 20% (64 schools), and Kulon Progo regency with 18% (60 schools) while the least was from Yogyakarta city for 9% (30 schools). The detailed data are presented in Table 1. The samples were randomly chosen by paper lottery, and the personnel who represented schools were school principals or someone who was appointed and understood the issue of child safety education at the school.

## Data collection

The data in this study were collected by a simple questionnaire (list of questions) to explore the factual events related with disasters that occurred at the school. The questions asked include school vulnerability, school resilience in facing multi-hazard threats, types of disasters that occurred at schools, types of violence against children at schools and types of safety hazard incidents that happened at schools. The questionnaire compiled in this study was not tested for validity and reliability. According to Azwar (2018), a questionnaire is not aimed to show psychological scale data but to show factual data/information (considered as facts and truths by the subjects) regarding various aspects, and subjects' responses to the questionnaire cannot be scored; thus, the questionnaire does not need to be tested for its reliability. Additionally, the validity of the questionnaire is shown from the clarity of the objectives and the completeness of the information shown (Azwar, 2018). Therefore, to ensure the validity of the questionnaire, the researcher compiled a questionnaire with clear instructions and simple language which was easy to understand. There was also a 60 minute explanation about the objectives while giving training related to the concepts to be explored before



1

**Table 1.** Total research respondents.

Regency/city <sup>a</sup>	Population	Design of the samples <sup>b</sup>	%
Yogyakarta city	166	$(166/1,843) \times 329 = 30$	9
Sleman regency	508	$(508/1,843) \times 329 = 91$	28
Bantul regency	361	$(361/1,843) \times 329 = 64$	20
Kulon Progo regency	335	$(335/1,843) \times 329 = 60$	18
Gunung Kidul regency	473	$(473/1,843) \times 329 = 84$	26
Total	1,843	329 <sup>b</sup>	100

<sup>a</sup>Regency/city in Yogyakarta province, Indonesia.

<sup>b</sup>Total samples of elementary schools.

the subjects filled out the questionnaire. In addition, the researcher also accompanied the subjects when completing the questionnaire, which was done to avoid bias in filling out the questionnaire and so that the researcher could respond quickly to any questions from research subjects when filling out the questionnaire.

### Data analysis

Data of this research were analyzed quantitatively by using tables of frequency distribution and percentages of the scores to the safety incidents which affected children in 329 elementary schools.

## Results

### Research subjects based on position at school

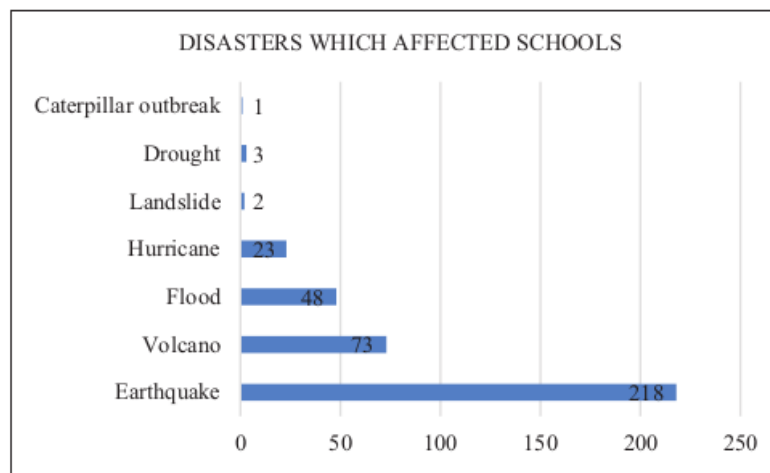
The largest number of respondents were principals with 87% (285 people), teachers with 12% (41 people) and administrative staff with 1% (three people). The majority of schools were represented by their principal because they were considered to be the most knowledgeable regarding the application of child safety education in the schools. Some schools with new principals were represented by teachers or administrative staff who oversaw the initiation program of the Disaster-Prepared School from the local government implemented at their schools.

### Research subjects based on status of the school

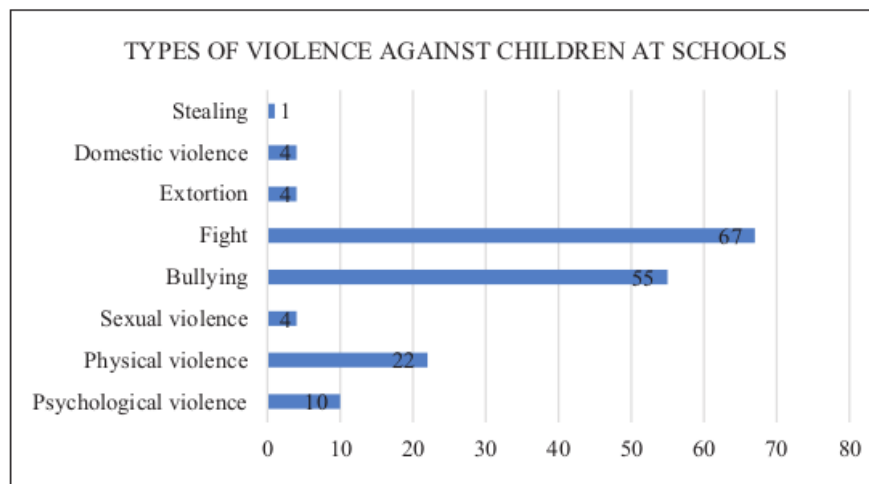
The largest number of respondents were from public elementary schools with 74% (244 schools), and private elementary schools with 20% (66 schools), while the smallest number were from Islamic elementary schools/*Madrasah* with 6% (19 schools). The results obtained were in line with the proportion of the number of schools in Yogyakarta province. The majority of elementary schools in this province are public schools while the least are *Madrasah*.

### Types of disasters that occurred at schools

From the sample of this research, some disasters which have happened in school areas and affected the children and schools were: earthquake (66% of schools), volcano (22%), flood (15%), hurricane (7%), landslide (1%), drought (1%), and caterpillar outbreak (0.3%). The data are shown in detail in Figure 1.



**Figure 1.** Disaster which affected the children and schools.



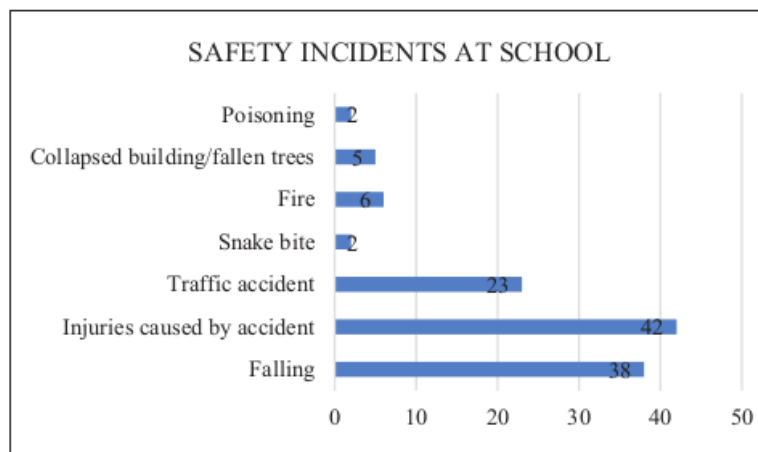
**Figure 2.** Violence against children at school.

### *Types of violence against children at schools*

From 329 school samples, the violence against children which has happened at school was namely, fighting (20%); bullying (17%) such as mocking, body-shaming, and being called by parent's name; physical violence (3%) such as being hit, stepped, pushed, pinched, and pulled; psychological violence (3%) such as being yelled, threatened, scolded, spit on; sexual violence (1.2%) such as sexual harassment and exhibitionism; domestic violence (1.2%) such as being tortured by step-mother, beaten by biological father, and abandonment; extortion (1.2%); and stealing (0.3%). The data are shown in detail in Figure 2.

### *Types of safety hazard incidents that happened at schools*

According to the respondents' answers, generally there were eight types of safety incidents at schools. The most common safety incident was falling (12%) which happened when playing,



**Figure 3.** Safety incidents which affected children at school.

during exercising, and from swing or other games, fence, trees, stairs, as well as from running; accidents at schools which caused injuries (13%) included: being hit, sprained, pinched, slipped, hit by a friend, cut by broken glass, blisters, thrown stones, broken bones, and serious injuries that must undergo surgery; accidents when students leave or come home from school (7%) included: being hit while crossing street to school, getting hit by a vehicle in front of school, and accidents while cycling to school; school fires (2%) for example: fires caused by electricity or stove installations in schools; collapsed buildings/fallen trees (1.5%) for example: the collapse of roof or ablu-tion building; snake bites (0.6%) and poisoning 0.6%. The details are shown in Figure 3.

## Discussion

### *School vulnerability*

Vulnerability is a set of conditions and/or consequences (physical, social, economic, and environmental factors) which negatively affect disaster prevention and management efforts. The vulnerability factors include: (1) Physical: strength of structural buildings (school buildings, roads, gates, fences) against the threat of disaster; (2) Social: the condition of school residents (gender, age, health, nutrition, behavior) against the threat of disaster; (3) Economy: the financial capacity of the community/parents in facing threats in their area; and (4) Environmental: the level of availability/scarcity of resources (land, water, air) and environmental damage which occurs in schools and surrounding areas. This vulnerability also includes the potential for fires in schools, among other places, due to failure to control small fires, lack of safety knowledge, incorrect electrical systems, poor housekeeping, smoking behavior in/around schools, and storing flammable materials or liquids. Vulnerability assessment is determined by examining the sociocultural, resource/environmental, infrastructure, and economic aspects (CPSC, 2018; Hassanain, 2006; Kurniawan et al., 2016; Suharwoto, Nurwin, TD, Supatma, Rudianto, et al., 2015).

Schools are also vulnerable places for other safety hazards, including physical, biological, and psychosocial threats, because the majority of school residents are children and adolescents who can easily panic and become difficult to manage if an emergency or crisis occurs (Hassanain, 2006). Education must be given a greater emphasis in the humanitarian response, because education has an essential role compared to other sectors in emergency response activities which can provide holistic benefits in disaster response. Children's protection is especially important when disasters and other



emergencies occur, because they can increase children's vulnerability. The main threats from disasters and other emergencies include: immediate danger of harm or death, physical loss, separation from family, and exploitation (violence based on gender, child labor, and human trafficking). Therefore, it is important to provide 'child-friendly spaces' in schools and elsewhere, and to have trustworthy administrators to share tasks related to safety and supervision (Suharwoto, Nurwin, TD, Supatma, Bank, et al., 2015). School-based prevention and control programs of physical, sexual, and psychological violence against children have proven to be effective (Lam et al., 2018).

In the results of this study, the schools were also able to identify several children who experienced domestic violence by their own parents. There is a strong relationship between the extent of exposure to abuse in dysfunctional households during childhood and various risk factors as the leading cause of death in adults (Felitti et al., 1998). Appropriate interventions and services are needed to meet the needs of children when there is suspicion of abuse and neglect (Bell & Singh, 2017). Accordingly, the provision of safe places, where children are protected from harassment, sexual and gender based violence is also very strategic and needs to be implemented in every school district (Halman et al., 2018).

Therefore, building school resilience to anticipate multi-hazard vulnerability is of strategic importance. This is in line with the development of a new concept in Indonesia, namely the Disaster Preparedness and Safety School program (SSSB) program, which emphasizes integrating comprehensive child safety education into the teaching and learning process. This SSSB integrates safety education for the prevention of accidents/injuries to children, child protection (physical, verbal/psychological, sexual, including bullying) in schools and disaster education (both natural and non-natural disasters) to ensure children's safety from the threat of various hazards in schools (Widowati et al., 2021).

1

### *School resilience in facing multi-hazard threats*

According to the World Bank in 2014, the education system in Indonesia is the fourth largest because it consists of 50 million students, 4 million teachers, and 355,000 schools throughout Indonesia (Kurniawan et al., 2016). Unfortunately, the current reality of the condition of schools in Indonesia is not yet completely safe and child-friendly (Anisah, 2018). The experience of the previous emergency situations should have increased the preparedness, especially for schools, because schools also have the responsibility to ensure that students are safe, during and after an emergency situation occurs (Tipler et al., 2017). Even though several schools have carried out various emergency preparedness activities, there are still many schools that may be less prepared to respond to emergencies in the future, especially if a response is needed for reunification with their families; this emergency response is very important for disaster management involving children (Aronsson-Storrier & da Costa, 2017; Tipler et al., 2017).

The aspects needed to build holistic school resilience include: aspects of policy, education and training, technical emergency, emergency communication and partnerships. Schools need policies or rules for implementing the program, for example anti-bullying policies. The schools which are located in the states which have anti-bullying laws have fewer reports of incidents of bullying in schools (up to 8.4%) than schools in states without anti-bullying laws (Nikolaou, 2017). On the policy aspect, ideally schools have some of the following for guidance: guidelines for Disaster Risk Reduction (DRR) implementation whose contents are discussed and reviewed at regular meetings with designated instructors (International Federation of Red Cross and Red Crescent Societies & UNDP, 2015; Schmidt, 2018), annual plans and budgets for evacuation exercises at least once a year and coordination with relevant stakeholders (Sakurai et al., 2018), tools or evaluation systems for school infrastructure safety, risk assessment, school security and vulnerability assessment (Chen &



Lee, 2012), technical assistance related to regular audits/assessments of school management to assist them in understanding school safety status (Sakurai et al., 2018) and studies on school vulnerability (Chen & Lee, 2012).

In the aspect of education, it is important to integrate formal and non-formal education programs into the school curriculum which are related to disaster prevention (Baytiyeh & Naja, 2014; Chen & Lee, 2012). There also must be an available DRR training which is a mandate to the school curriculum (International Federation of Red Cross and Red Crescent Societies & UNDP, 2015). The schools must provide child safety education by considering the emotional and psychological aspects of children, for example, by using a variety of approaches, both narrative or creative conversation, designing and making art, using technology for film-making, as well as showing documentary films which can help the children to absorb information both individually or collaboratively (Mutch, 2013). In addition, schools need to provide safety education materials at various levels including counseling programs designed for psychological recovery after a disaster (Chen & Lee, 2012; Hosseini & Izadkhah, 2006). It is also important to use appropriate methods of delivering messages in safety education by combining verbal explanations and creative visual images to help children memorize the contents of safety education messages, for example related to dangerous objects that can cause injury, including unsafe actions and the severity of accidents that occur (Liu et al., 2015). Furthermore, digital-based learning can be used as an alternative to provide continuous safety education. Homeroom teachers must be actively involved in teaching safety education so that the children will become more familiar with emergency protocols and able to manage emergency event procedures in the event of an actual disaster (Schmidt, 2018).

In the aspect of training, principals and teachers also should be required to obtain professional development in crisis management so that they are better prepared to face the possibility of disasters which can happen, and be trained to be able to make efforts to alleviate the situation including handling any problematic individuals (Mowen, 2015; Mutch, 2015). Schools can hold disaster preparedness training, for example, emergency evacuation training and strengthening of emergency response teams for teachers, students and parents for disaster prevention education in schools (Chen & Lee, 2012; Hosseini & Izadkhah, 2006; International Federation of Red Cross and Red Crescent Societies & UNDP, 2015). Another option is to appoint school staff for special training in emergency protocols and procedures (Schmidt, 2018).

In the technical aspects of emergency response, schools can form emergency response teams who are available at all times (O'Connor, 2013), create disaster prevention maps (Chen & Lee, 2012), as well as have more than one emergency evacuation area which are agreed on and known by everyone (O'Connor, 2013). In the aspects of emergency communication, schools are encouraged to have a list of up to six names of people who can come and pick up their children in the event of an emergency, as well as set up a system of sending messages or other communication media for all parents, so that by pressing one button it can tell the parents about what is happening in the school in the event of an emergency. The system is set up with more than one telephone number and on different networks (O'Connor, 2013). In the aspects of partnership, it is necessary to develop a cooperation between schools and community-based disaster management systems (Chen & Lee, 2012).

### *Elementary school curriculum and child safety education*

The results of identification of the contents of Elementary School curriculum in Indonesia showed there were several teaching contents in the Curriculum 2013 which have the potential to be integrated with elementary school child safety education, such as for Grade 1: myself, my hobbies, my activities, my experiences, things, animals, plants around me, and natural events; Grade 2: playing

in my neighborhood, my daily task, my school and I, taking care of animals and plants, safety at home and on the road; Grade 3: caring the surrounding animals and plants, memorable experiences, get to know the weather and season, let's play and exercise, the beauty of friendship and good behavior in everyday life; Grade 4: the beauty of togetherness, various jobs and places where I live; Grade 5: playing with the surrounding objects, events in life and living in harmony; and Grade 6: saving living things and public health (Kurikulum, 2013).

It is possible to include DRR and disaster preparedness content in the school curriculum, as has been done in several countries, such as: Bangladesh, Cambodia, Indonesia, Iran, Maldives, Laos, Nepal, Pakistan, Malaysia, The Philippines, Sri Lanka, and others. In addition, India government had initiatives to include DRR in school curriculums, for example for pre-primary classes, where disaster management can be integrated in the form of extra-curricular activities such as games and painting competitions, and to support its implementation, teacher training in the disaster management is needed (Nanda & Raina, 2019).

### *Who has a role in improving school resilience?*

The nation must take all appropriate measures including: legislative, administrative, social and educational strategies to protect children from all forms of physical or mental violence, danger of injury, neglect, abuse or exploitation, including sexual abuse while in the care of parents, legal guardians or other people who provide care for children (UNICEF, 1989). Therefore, in its practice, school resilience in disaster risk reduction requires the role of various parties, including government, parents/community, students, emergency management practitioners, and social workers. Improved public safety can be built through increasing school and community resilience, and its implementation can begin by preparing school-based emergency response procedures, evaluation system for implementing school preparedness, conducting teacher training, incorporating disaster preparedness content to children's programs and school curriculum, and increasing voluntary teaching (Aronsson-Storrier and da Costa, 2017; Johnson et al., 2014; Parsizadeh & Ghafory-Ashtiany, 2010; Tipler et al., 2016, 2017).

Innovative activities in elementary schools must be regulated and managed, in which school safety cannot be improved unless with involvement of all parties as the catalyst for environmental change, because the collaboration will be able to provide additional innovative and dynamic support for schools (Adolfsson & Alvunger, 2017; Al Ahababi, 2018). The roles of international donors and non-governmental organizations (social workers) are very important to examine the extent of the school's efforts to improve safety in their school as well as to give contributions to schools to create a safer school environment by prioritizing the welfare of students in the school environment (Vanner, 2018). It is important for overseas experts to be able to enter the disaster area, because they can contribute in carrying out DRR efforts (Trim, 2004). As an example, the role of NGOs/social workers in providing information about preparedness in dealing with natural disasters, social disasters or other emergencies can be obtained through the local, regional, national, and international Red Cross websites (Kapucu, 2008). In addition, there are also efforts to assist students, parents and the community in order to have positive perceptions to support a safe and secure learning environment both physically and psycho-socially for the children (UNESCO, 2012). Equally important, schools need to improve the communication with parents to ensure school safety (Wingate et al., 2018).

Communities need to be actively involved in promoting the application of local risk assessments and disaster preparedness programs in schools and higher education institutions to ensure that the community is aware and responsive to disasters. Community involvement can be done among other efforts by promoting community-based training initiatives which consider the role of social workers to increase the local capacity in reducing and coping with disasters until the



recovery phase. Community involvement and social workers with local wisdom can produce more satisfying output (Kusumasari & Alam, 2012; Nanda & Raina, 2019). One example is the disaster management and emergency preparedness in Timor-Leste which is coordinated by the government, international institutions and local organizations. They divided the main roles among all the involved parties. Government's role was to develop an emergency management mechanism, international organizations' role was to assist producing a series of disaster management manuals, and local organizations' role, such as the Red Cross, was to provide support for the implementation of government emergency procedures through the Integrated Community Based Risk Reduction (ICBRR) program. In the institutional framework of disaster management, several NGOs (social workers) work together with the government for disaster preparedness. Many services become the important components, which can be provided by social workers for schools to improve the social, emotional, and behavioral health of students (Andrews et al., 2020). The participation of social workers in preparedness programs contributes significantly to sustainable development (Cook et al., 2018; Shah Alam Khan, 2008). On the other hand, media involvement is also very important in promotional efforts to stimulate a culture of disaster resilience and encourage community involvement (UNISDR, 2005).

Concerning school violence, boys often become the victims of physical punishment or bullying. In 2017, the dimensions of gender violence against girls and boys increased and became the concern for international protection organizations. UNICEF (2018) has collaborated on child protection with a number of international partners, including global partnerships to help achieve the target of the global SDGs to end violence against children.

### *Research limitations*

This research was a preliminary study in the research road map for the development of a measurement tool for the assessment of child safety education in schools. This research was essential to be done before designing the research protocol to develop a measurement instrument, since this study could portray the magnitude of the problem (multi-hazard based scenario) of disasters/dangers which actually happened in elementary schools in Indonesia to show the dire urgency and to underscore the immediate need to develop a school assessment tool for a comprehensive program to outline a guideline for the Disaster Preparedness School.

### **Conclusions**

This research identified various types of hazards including physical, biological, and psychosocial dangers in schools which have the potential to endanger the welfare of children's lives. The disasters were varied from natural disasters, violence against children, and the dangers caused by the absence of adequate safety aspects in school. Dangers due to natural disasters included earthquakes, volcanoes, floods, hurricanes, landslides, drought, and potential biological hazards such as infectious disease and caterpillar outbreaks. The dangers which were related to violence against children included fighting, extortion, physical violence, psychological violence, sexual violence, and bullying as well as extortion and stealing. Additionally, the dangers related to safety aspects at schools, whether caused by children's activities or other technical causes that caused injuries, included among others: fire, collapsed buildings/fallen trees, and food poisoning at school.

The existence of these multi-hazard threats creates a situation where the school is unable to work alone to overcome the threats. Schools need the supportive role of various parties to build a school resilience system, such as government, NGOs, universities, communities, and social workers to assist in various DRR programs, which include aspects of preparedness for natural disasters, child protection services and safety education aspects for children in schools.

## Acknowledgements

The author would like to express the highest gratitude to Universitas Negeri Semarang and Universitas Gadjah Mada.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## References

- Adolfsson, C.-H., & Alvunger, D. (2017). The nested systems of local school development: Understanding improved interaction and capacities in the different sub-systems of schools. *Improving Schools, 20*(3), 195–208. <https://doi.org/10.1177/1365480217710874>
- Adolfsson, C.-H., & Håkansson, J. (2018). Evaluating teacher and school development by learning capital: A conceptual contribution to a fundamental problem. *Improving Schools, 22*(2), 130–143. <https://doi.org/10.1177/1365480218784039>
- Al Ahabbi, N. M. (2018). Key stakeholders' perceptions about school improvement strategies in UAE. *Improving Schools, 22*(2), 113–129. <https://doi.org/10.1177/1365480218817983>
- Andrews, J. H., Cho, E., Tugendrajch, S. K., Marriott, B. R., & Hawley, K. M. (2020). Evidence-based assessment tools for common mental health problems: A practical guide for school settings. *Children & School, 42*(1), 41–52. <https://doi.org/10.1093/cs/cdz024>
- Anisah, N. (2018). *Model Sekolah Aman Bencana Dalam Upaya Mewujudkan Pendidikan Karakter di MIN 1 Bantul*. Universitas Islam Negeri Sunan Kalijaga Yogyakarta.
- Aronsson-Storrier, M., & da Costa, K. (2017). Regulating disasters? The role of international law in disaster prevention and management. *Disaster Prevention and Management, 26*(5), 502–513. <https://doi.org/10.1108/DPM-09-2017-0218>
- Azwar, S. (2018). *Penyusunan Skala Psikologi* (2nd ed.). Pustaka Pelajar.
- Baytiyeh, H., & Naja, M. K. (2014). Can education reduce Middle Eastern fatalistic attitude regarding earthquake disasters? *Disaster Prevention and Management, 23*(4), 343–355. <https://doi.org/10.1108/DPM-12-2013-0219>
- Bell, M. M., & Singh, M. I. (2017). Implementing a collaborative support model for educators reporting child maltreatment. *Children & School, 39*(1), 7–14. <https://doi.org/10.1093/cs/cdw041>
- BNPB. (2019). *DIBI*. Retrieved March 13, 2019, from <http://dibi.bnpb.go.id/>
- Cambodia, E. I. of. (2008). *Impact of disaster on the education sector in Cambodia* (Consultati). Asian Disaster Preparedness Center.
- Chen, C., & Lee, W. (2012). Damages to school infrastructure and development to disaster prevention education strategy after Typhoon Morakot in Taiwan. *Disaster Prevention and Management: An International Journal, 21*(5), 541–555. <https://doi.org/10.1108/09653561211278680>
- Cook, A. D. B., Suresh, V., Nair, T., & Foo, Y. N. (2018). Integrating disaster governance in Timor-Leste: Opportunities and challenges. *International Journal of Disaster Risk Reduction, 35*, 101051. <https://doi.org/10.1016/j.ijdrr.2018.12.013>
- CPSC. (2018). *Toy-related deaths and injuries calender year 2017*. CPSC.
- Devries, K. M., Child, J. C., Allen, E., Walakira, E., Parkes, J., & Naker, D. (2014). School violence, mental health, and educational performance in Uganda. *Pediatrics, 133*(1), e129–e137. <https://doi.org/10.1542/peds.2013-2007>
- Devries, K. M., Knight, L., Child, J. C., Mirembe, A., Nakuti, J., Jones, R., Sturgess, J., Allen, E., Kyegombe, N., Parkes, J., Walakira, E., Elbourne, D., Watts, C., & Naker, D. (2015). The Good School Toolkit for reducing physical violence from school staff to primary school students: A cluster-randomised



- controlled trial in Uganda. *The Lancet Global Health*, 3(7), e378–e386. [https://doi.org/10.1016/S2214-109X\(15\)00060-1](https://doi.org/10.1016/S2214-109X(15)00060-1)
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine*, 14(4), 245–258. [https://doi.org/10.1016/s0749-3797\(98\)00017-8](https://doi.org/10.1016/s0749-3797(98)00017-8)
- Halman, P. G., van de Fliert, E., Khan, M. A., & Shevellar, L. (2018). The humanitarian imperative for education in disaster response. *Disaster Prevention and Management: An International Journal*, 27(2), 207–214. <https://doi.org/10.1108/DPM-10-2017-0252>
- Hassanain, M. A. (2006). Towards the design and operation of fire safe school facilities. *Disaster Prevention and Management: An International Journal*, 15(5), 838–846. <https://doi.org/10.1108/09653560610712775>
- Hosseini, M., & Izadkhan, Y. O. (2006). Earthquake disaster risk management planning in schools. *Disaster Prevention and Management: An International Journal*, 15(4), 649–661. <https://doi.org/10.1108/09653560610686595>
- International Federation of Red Cross and Red Crescent Societies, & UNDP. (2015). *The checklist on law and disaster risk reduction (Pilot Vers)*. IFRC & UNDP.
- Johnson, V. A., Ronan, K. R., Johnston, D. M., & Peace, R. (2014). Implementing disaster preparedness education in New Zealand primary schools. *Disaster Prevention and Management*, 23(4), 370–380. <https://doi.org/10.1108/DPM-09-2013-0151>
- Kapucu, N. (2008). Culture of preparedness: Household disaster preparedness. *Disaster Prevention and Management: An International Journal*, 17(4), 526–535. <https://doi.org/10.1108/09653560810901773>
- Kurikulum. (2013). Indonesia: Kementerian Pendidikan dan Kebudayaan.
- Kurniawan, L., Muttmainnah, L. St., Hamzah, A., & Rozita, E. (2016). Inisiasi Sekolah/Madrasah Aman Bencana The Initiation of Safe School from Disaster. *Jurnal Riset Kebencanaan Indonesia*, 2(2), 106–116.
- Kusumasari, B., & Alam, Q. (2012). Local wisdom-based disaster recovery model in Indonesia. *Disaster Prevention and Management: An International Journal*, 21(3), 351–369. <https://doi.org/10.1108/09653561211234525>
- Lam, S., Zwart, C., Chahal, I., Lane, D., & Cummings, H. (2018). Preventing violence against children in schools: Contributions from the Be Safe program in Sri Lanka. *Child Abuse and Neglect*, 76, 129–137. <https://doi.org/10.1016/j.chiabu.2017.10.016>
- Liu, H.-F., Lin, F.-S., & Chang, C.-J. (2015). The effectiveness of using pictures in teaching young children about burn injury accidents. *Applied Ergonomics*, 51, 60–68. <https://doi.org/10.1016/j.apergo.2015.04.013>
- Mowen, T. J. (2015). School safety. In: J. D. Wright (Eds.), *International encyclopedia of the social & behavioral sciences (Vol. 21, 2nd ed., pp. 107–111)*. Elsevier Ltd. <https://doi.org/10.1016/B978-0-08-097086-8.45081-6>
- Mutch, C. (2013). “Sailing through a river of emotions”: Capturing children’s earthquake stories. *Disaster Prevention and Management*, 22(5), 445–455. <https://doi.org/10.1108/DPM-10-2013-0174>
- Mutch, C. (2015). The role of schools in disaster settings: Learning from the 2010–2011 New Zealand earthquakes. *International Journal of Educational Development*, 41, 283–291. <https://doi.org/10.1016/j.ijedudev.2014.06.008>
- Nanda, R., & Raina, S. K. (2019). Integrating disaster risk reduction in school curriculum: A vision statement by a joint working group of university and medical teachers. *International Journal of Disaster Risk Reduction*, 33, 495–497. <https://doi.org/10.1016/j.ijdr.2018.09.011>
- Nikolaou, D. (2017). Do anti-bullying policies deter in-school bullying victimization? *International Review of Law and Economics*, 50, 1–6. <https://doi.org/10.1016/j.irle.2017.03.001>
- O’Connor, P. (2013). Pedagogy of love and care: Shaken schools respond. *Disaster Prevention and Management: An International Journal*, 22(5), 425–433. <https://doi.org/10.1108/DPM-10-2013-0176>
- Ozmen, F. (2006). The level of preparedness of the schools for disasters from the aspect of the school principals. *Disaster Prevention and Management: An International Journal*, 15(3), 383–395. <https://doi.org/10.1108/09653560610669873>
- Parsizadeh, F., & Ghafory-Ashtiany, M. (2010). Iran public education and awareness program and its achievements. *Disaster Prevention and Management: An International Journal*, 19(1), 32–47. <https://doi.org/10.1108/09653561011022126>

- Sakurai, A., Bisri, M. B. F., Oda, T., Oktari, R. S., Murayama, Y., & Affan, M. (2018). Exploring minimum essentials for sustainable school disaster preparedness: A case of elementary schools in Banda Aceh City, Indonesia. *International Journal of Disaster Risk Reduction*, 29, 73–83. <https://doi.org/10.1016/j.ijdr.2017.08.005>
- Schmidt, J. (2018). Notes on national earthquake education programs in Israel. *Procedia Engineering*, 212, 1265–1272. <https://doi.org/10.1016/j.proeng.2018.01.163>
- Shah Alam Khan, M. (2008). Disaster preparedness for sustainable development in Bangladesh. *Disaster Prevention and Management: An International Journal*, 17(5), 662–671. <https://doi.org/10.1108/09653560810918667>
- Suharwoto, G., Nurwin., TD, N., Supatma, R., Dirhamsyah., Rudianto., Jayanti, E. D., Mahulae, A., Taufik, A., Elvera, D., Kertapati, I., S, KP., Bhaswara, N., Sari, D., Hidayati, N., Meiwanty, I., Nurhalim, E., Ngurah, I., Muzaki, J., Hardjoko, M., Tebe, Y. (2015). *Modul 2 pilar 2 - manajemen bencana di sekolah*. Kementerian Pendidikan dan Kebudayaan & UNICEF.
- Suharwoto, G., Nurwin., TD, N., Supatma, R., Dirhamsyah., Rudianto., Jayanti, E. D., Mahulae, A., Taufik, A., Elvera, D., Kertapati, I., S, KP., Bhaswara, N., Sari, D., Hidayati, N., Meiwanty, I., Nurhalim, E., Ngurah, I., Muzaki, J., Hardjoko, M., Tebe, Y. (2015). *Modul 3 Pilar 3-Pendidikan Pencegahan dan Pengurangan Risiko Bencana*. Kementerian Pendidikan dan Kebudayaan & UNICEF.
- Tipler, K., Tarrant, R., Johnston, D., & Tuffin, K. (2017). Are you ready?: Emergency preparedness in New Zealand schools. *International Journal of Disaster Risk Reduction*, 25, 324–333. <https://doi.org/10.1016/j.ijdr.2017.09.035>
- Tipler, K. S., Tarrant, R. A., Johnston, D. M., & Tuffin, K. F. (2016). New Zealand ShakeOut exercise: Lessons learned by schools. *Disaster Prevention and Management*, 25(4), 550–563. <https://doi.org/10.1108/DPM-01-2016-0018>
- Trim, P. R. J. (2004). An integrative approach to disaster management and planning. *Disaster Prevention and Management*, 13(3), 218–225. <https://doi.org/10.1108/09653560410541812>
- UN. (2015). *Sendai framework for disaster risk reduction 2015-2030* [Conference session]. The Third UN World Conference (pp. 1–37), Sendai, Japan. UNISDR.
- Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 Tentang Penanggulangan Bencana, Pub. L. No. Nomor 24 Tahun 2007, 1 (2007). Indonesia.
- UNESCO. (2012). *Monitoring and evaluation guidance for school health (Part 1)*. UNESCO.
- UNICEF. (1989). *The United Nations convention on the rights of the child*. UNICEF.
- UNICEF. (2018). *Annual report 2017*. UNICEF. <https://www.unicef.org/reports/unicef-annual-report-2017>
- UNISDR. (2005). *Hyogo framework for action 2005-2015: Building the resilience of nations and communities to disasters* [Conference session]. World Conference on Disaster Reduction (pp. 1–22), Kobe, Hyogo, Japan.
- UNISDR. (2009). *2009 UNISDR terminology on disaster risk reduction*. United Nations International Strategy for Disaster Reduction (UNISDR). [www.unisdr.org](http://www.unisdr.org)
- Vanner, C. (2018). ‘This is a competition’: The relationship between examination pressure and gender violence in primary schools in Kenya. *International Journal of Educational Development*, 62, 35–46. <https://doi.org/10.1016/j.ijedudev.2018.02.001>
- Wandera, S. O., Clarke, K., Knight, L., Allen, E., Walakira, E., Namy, S., Naker, D., & Devries, K. (2017). Violence against children perpetrated by peers: A cross-sectional school-based survey in Uganda. *Child Abuse and Neglect*, 68, 65–73. <https://doi.org/10.1016/j.chiabu.2017.04.006>
- Wang, J.-J. (2016). Study on the context of school-based disaster management. *International Journal of Disaster Risk Reduction*, 19, 224–234. <https://doi.org/10.1016/j.ijdr.2016.08.005>
- Widowati, E., Istiono, W., & Husodo, A. H. (2021). The development of Disaster Preparedness and Safety School model: A Confirmatory Factor Analysis. *International Journal of Disaster Risk Reduction*, 53(102004), 1–14. <https://doi.org/10.1016/j.ijdr.2020.102004>
- Wingate, S. E., Postlewaite, R. R., Mena, R. M., Neely-barnes, S. L., & Elswick, S. E. (2018). Parent knowledge of and experiences with response to intervention. *Children & School*, 40(3), 163–172. <https://doi.org/10.1093/cs/cdy010>

# Scopus Q2\_Improving School.pdf

---

## ORIGINALITY REPORT

---

3%

SIMILARITY INDEX

%

INTERNET SOURCES

3%

PUBLICATIONS

0%

STUDENT PAPERS

---

## PRIMARY SOURCES

---

1

Evi Widowati, Wahyudi Istiono, Adi Heru Husodo. "The development of Disaster Preparedness and Safety School model: A Confirmatory Factor Analysis", International Journal of Disaster Risk Reduction, 2021

Publication

3%

---

Exclude quotes On

Exclude matches < 2%

Exclude bibliography On

# Scopus Q2\_Improving School.pdf

---

## GRADEMARK REPORT

---

FINAL GRADE

**/0**

GENERAL COMMENTS

**Instructor**

---

PAGE 1

---

PAGE 2

---

PAGE 3

---

PAGE 4

---

PAGE 5

---

PAGE 6

---

PAGE 7

---

PAGE 8

---

PAGE 9

---

PAGE 10

---

PAGE 11

---

PAGE 12

---

PAGE 13

---