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Implementation of Emergency Response System in Elementary School as an Effort to Increase Safety Culture from an Early Age

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Abstract

Children are included in a vulnerable group that must be protected, both from the threat of natural disasters, non-natural disasters or social disasters. School is a place for children to spend a lot of time. Disaster events can occur anywhere and at any time, including at school and during school hours, so schools must have an adequate emergency response system to ensure the safety of all its citizens. The purpose of this study is to identify problems that exist in schools related to the implementation of the disaster response system and formulate indicators for the initiation of initial activities for implementing the emergency response system in elementary school. The research design uses a qualitative descriptive research. The results of identifying problems in Elementary School Y show that school has not implemented an emergency response and disaster mitigation system, but teachers' knowledge regarding multi-hazard mitigation is also still low. The conclusions obtained are that schools can apply initial activity initiation indicators for the implementation of an emergency response system including: preparation of an emergency response team complete with duties and roles, preparation of SOPs for emergency response at school, training and simulation of disaster mitigation, preparation of evacuation maps, installation of evacuation directions, determination gathering points, emergency response signs, installation of emergency response facilities at least Light Fire Extinguishers/APAR and instructions for their use, as well as developing a network of cooperation with related parties.

Keywords: initiation, activity, emergency response system, elementary school

INTRODUCTION

Schools have a role that not only teaches knowledge to their students but also protects the safety and health of students while they are at school (Hutasoit & Widowati, 2017; Novalita & Widowati, 2018; Widowati, Husodo, & Istiono, 2020; Widowati, Istiono, & Husodo, 2021; Widowati, Istiono, & Sutomo, 2021; Widowati, Koesyanto, & Sugiharto, 2018). On the other hand, children are included in the category of vulnerable groups, such as being vulnerable to disasters, accidents or acts of violence that can threaten their safety (Bowes et al., 2019; Widowati, Hendriyani, et al., 2018; Widowati, Koesyanto, et al., 2018). Therefore, children especially in elementary schools need to gain knowledge and understanding of all potential hazards that can threaten their safety both at school and in the surrounding environment, because providing safety education as early as possible can contribute to preventing accidents, both those with minor impacts or up to disability and death (Widowati, Koesyanto, et al., 2018). In addition, at the age of a child it is easier for someone to learn and absorb information so that it is considered appropriate to be given safety education (Jatmiko, 2012; Widowati, Hendriyani, & Nugroho, 2019; Widowati, Koesyanto, et al., 2021). Especially for children of primary school age to form the basis for the development of thinking skills which will influence the formation of a culture of safety in the future (Widowati, Hendriyani, et al., 2018).

Currently safety education in Indonesia is still not focused on new promotive and preventive aspects and is still limited to disaster education with a massive risk paradigm given to children and not all schools in

Indonesia are able to meet standards as child-friendly schools. This requires the role of all parties, especially the government in efforts to reduce disaster risk and other safety risks to children (Anak, 2015; Indonesia, 2018; Jatmiko, 2012; Suharwoto, Nurwin, TD, Supatma, Bank, et al., 2015; Suharwoto, Nurwin, TD, Supatma, Dirhamsyah, et al., 2015; Suharwoto, Nurwin, TD, Supatma, Rudianto, et al., 2015), including in special schools because they still have low capacity in dealing with disasters (Novalita & Widowati, 2018). On the other hand, the school is one of the seven facility objects that must receive special attention in preventing the large number of victims and damage caused by natural disasters, because this place is very attached to community activities every day. Where children, teachers, and employees spend a minimum of 6 hours at school (Ristianto, 2019). On the other hand, the current condition of schools in Indonesia is not completely safe and child-friendly (Anisah, 2018). This is quite different from developed countries, where the majority of schools have carried out various emergency preparedness activities such as developing plans, conducting drills and providing hazard education to students. (Tipler, Tarrant, Johnston, & Tuffin, 2017). Therefore this study aims to identify problems that exist in schools related to the implementation of the disaster response system and formulate activity indicators as an initial initiation step for implementing an emergency response system in elementary schools.

METHOD

This study uses a qualitative descriptive research design. The process of identifying problems in Elementary School Y in Semarang City was carried out through direct field observations related to safety facilities and infrastructure in schools, interviews with school principals and filling out questionnaires with 19 teachers. While the activity indicators for the initial initiation of the implementation of the emergency response system in elementary schools were obtained through a literature study. This activity has obtained approval from the Health Research Ethics Committee of Universitas Negeri Semarang Number: 192/KEPK/EC/2023 May 12, 2023.

RESULTS AND DISCUSSION

Description of Respondents' Characteristics

Table 1. Table of Respondents Characteristics

No	Characteristics of Respondents	∑	%
1	Gender		
	Male	7	36,8
	Female	12	63,2
2	Position		
	Teacher	18	94,7
	Principles	1	5,3
3	Working duration		
	<5 years	15	78,9
	≥ 5 years	4	21,1
4	Training Status		
	Have received safety training	0	0
	Haven't received training	19	100
	Total	19	100

Based on the characteristics of the respondents, it is known that there are more female respondents than males, namely 12 people or 63.2%. The job description shows that almost all of the respondents were teachers, namely 18 people (94.7%) and 1 person served as school principal. On the other hand, the description of tenure characteristics shows that most of the respondents had tenure of <5 years, namely 15 respondents (78.9%) and as many as 4 respondents (21.1%) had tenure of ≥5 years. Meanwhile, based on the status of safety or disaster mitigation training, it shows that all respondents, namely as many as 19 people (100%) have never received adequate multi-disaster safety and mitigation training. They have only ever received training and simulations related to earthquakes.

Analysis of pretest and posttest scores

Table 2. Pretest and Posttest Score Description

No	Score	∑	%
1	*Pretest*		
	<70	16	84,2
	≥70	3	15,8
2	*Posttest*		
	<70	0	0
	≥70	19	100
Total		19	100

Based on table 2 it can be seen that the majority of respondents had a pretest score of <70, namely 16 people (84.2%) and respondents who had a posttest score of ≥70 were 3 people (15.8%). While the results of the posttest showed that there were no respondents who had a posttest score of <70 and all respondents had a posttest score of ≥70.

An overview of the implementation of the emergency response system in school

From the results of direct field observations and interviews with school principals, it can be seen that the results of problem identification in schools related to the implementation of the existing disaster response system are as follows.

The Need for emergency response training: *....nah ini, yang belum pernah. Dulu pernah sekali tentang gempa bumi kalau nanti ini misal jadi pengabdian bisa di jadikan kek pelatihan ini nggih, karena guru-guru perlu tau...*

(well this, which has never been. There was once about an earthquake, if later on this, for example, as a service can be made into this kind of training, because teachers need to know...)

Disaster response simulation: *... dulu pernah simulasi bersama anak nanti kita kumpulnya dimana pernah satu kali.. (I used to do a simulation with our students, where can we meet once?)*

Emergency Response Team: *...belum ada dulu..(not there yet..)*

MoU: *...belum ada, karena kita MoU dengan Puskesmas karena ada anak bermain jatuh, yang kecil – kecil gitu lah kalau untuk bencana belum ada... termasuk belum pernah MoU dengan Damkar....(there isn't yet, because we have an MoU with the Community Health Center because there are students playing falling, the small ones don't have an MoU for disasters yet... including there has never been an MoU with Local Firefighters Agencies....)*

Safety facilities: *... Ada fasilitas 1 alat pemadam kebakaran, belum pernah di perbarui dan diapa-apakan dari sejak beli, karena belum ada timnya. Dan belum di manfaatkan dengan baik...(There is a facility for 1 Light Fire Extinguisher, it has never been used and has been neglected since it was purchased, because there is no team yet. And not used properly...)*

From the results of the interviews it can be seen that school do not yet have an adequate emergency response system, both teams, SOPs, safety facilities or infrastructure, adequate disaster training and simulation, partnerships or cooperation and also very minimal knowledge, it seems that they do not understand emergency response procedures including procedures for using and filling Light Fire Extinguishers/APAR and how to calculate the minimum number of APAR needed at school as an effort to anticipate fire emergency incidents at school, because school has laboratory activities. Apart from the results of the interviews, the results of field observations made can also be seen that the school does not yet have a

good evacuation system, determination of gathering points and emergency communications.

Description of the Results of the Establishment of an Emergency Response System in School

From the results of identifying problems in Elementary School Y in Semarang City, the next step is to carry out a literature study so that several relevant activity indicators can be implemented in schools as the initiation of initial activities to improve the implementation of the emergency response system in schools, namely: preparation of an emergency response team, structure organization complete with duties and roles, preparation of SOPs for emergency response at school, training and simulation of disaster mitigation, preparation of evacuation maps, installation of evacuation directions, determination of gathering points, signs for emergency response, installation of emergency response facilities at least a Light Fire Extinguisher/APAR and instructions its use and the development of a network of cooperation with related parties. As presented in Table 3.

Table 3. Overview of Design Problems, Solutions and Indicators

PROBLEM	SOLUTIONS	INDICATOR OF SUCCESS
The school does not yet have an emergency response team, so the duties and roles of each are unclear when an emergency occurs.	Formation of an emergency response team. Training for the emergency response team regarding the introduction of what an emergency is, the types and what to do during an emergency as well as the tasks and roles of each team.	Emergency response team. Organizational structure of the emergency response team. Job description of each team. Increasing the knowledge of the emergency response team regarding their duties and roles in schools.
The school does not yet have an SOPs for emergency response, therefore there are no standard procedures that must be carried out when an emergency occurs.	Preparation of SOPs for emergency response. Dissemination of SOPs preparation for emergency response at schools.	Availability of SOPs for emergency response in schools. Availability of SOPs for emergency or hazards communication in schools. Increasing the knowledge of teachers, staff, school management and students regarding emergency response procedures in schools.
Schools do not yet have an adequate evacuation system, therefore during an emergency it has not been tested whether schools are able to evacuate all school members quickly and safely.	Making an evacuation map. Making evacuation directions. Determination of point of gathering.	Availability of an evacuation map. Evacuation directions are available. Have determined the meeting point. There are signs or signs where to gather. There are all disaster response signs in school.
Low understanding and skills for fire fighting even though the school has laboratory activities.	Firefighting training for school firefighting teams, teachers, staff and students. Availability of APAR in the school. There is an adequate schedule for inspection and maintenance of APAR.	Increasing the knowledge of school firefighting teams, teachers, staff and students regarding firefighting techniques. They are able to use APAR properly and correctly. Fire extinguishers are available in schools. There is an adequate APAR inspection and maintenance system in place.
The implementation of disaster management in schools is still inconsistent, so assistance from related parties is needed.	Collaboration with parties related to disaster management in schools.	Collaboration with the local Community Health Center, Hospital, Indonesian Red Cross (PMI), Regional Disaster Management Agency (BPBD), Fire Service Agency and local Police.

Based on the results of these observations and interviews, it can be seen that Elementary School Y does not yet have an adequate emergency response system to ensure the safety and health of students at school, especially in emergency situations. Elementary School Y does not yet have an emergency response team, both its team, organizational structure and job descriptions as well as not having SOPs for emergency response, partnerships with supporting agents from outside the school concerned, training and disaster simulations are inadequate and safety facilities and infrastructure are not yet all adequate and in accordance with safety standards. This shows that schools are not fully capable of providing safety guarantees to their students and teachers, especially during emergencies.

In disaster mitigation, the lack of awareness of available resources and the need for teacher training is the biggest challenge in efforts to optimize existing resources. Therefore, increasing the use of resources such as: using web-based technology for teacher training, integrating disaster preparedness messages into children's programs, continuous evaluation systems, including disaster education content as a prerequisite

in the curriculum, and adding voluntary teaching as a one of the national strategies for integrating disaster education curricula is important to do (Indonesia, 2018; Johnson, Ronan, Johnston, & Peace, 2014; Widowati, Husodo, Istiono, & Lazuardi, 2019).

Implementation of an emergency response system should be carried out on the basis of internal needs and awareness on the part of the school, because most school disaster preparedness activities driven by external parties are not continued by schools due to a lack of ownership, institutional arrangements and funding (Sakurai et al., 2018). Teachers have an important role in building school resilience for disaster mitigation because teachers can be involved to mitigate risk factors in the environment (Dwiningrum, 2017). Disaster mitigation is important, especially on objects that are closely related to children's activities, because children are the most vulnerable to natural disasters and can suffer the most lasting negative impacts (Caruso, 2017). Disaster mitigation can be developed by developing local wisdom that exists somewhere (Kusumasari & Alam, 2012) and to increase its effectiveness, it can develop networks with related agencies such as the Education Office and the Disaster Management Agency (Schmidt, 2018).

CONCLUSION

Based on the results of this study, it was found that several indicators of initial initiation activities that could be implemented in schools were: preparation of an emergency response team complete with organizational structure, duties and roles, preparation of SOPs for emergency response and emergency communication at school, training and simulation of disaster mitigation, preparation of evacuation maps, installation evacuation directions, determination of gathering points, signs for emergency response, installation of emergency response facilities at a minimum of Light Fire Extinguishers/APAR and instructions for their use and maintenance, and development of a network of cooperation with related parties. This indicator needs to be applied together or integrated with teaching materials or teaching media in the curriculum or school activities both intra-curricular, co-curricular and extra-curricular.

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