

Article

Disasters and the Role of the Local Community: Focused on the Support System for disaster Safety Vulnerable Group

Jeong Mi Baek

Incheon Studies Institute, Incheon National University, 119, Academy-ro, Yeonsu-gu, Incheon, Republic of Korea
jeongmi90@hanmail.net; Tel.: +82-10-7769-8879

Abstract: The purpose of this study is to present the role of the local community for supporting the disaster safety vulnerable class. To do this, first, the concept and current status of the disaster safety vulnerable class were examined. Second, the meaning and type of local community were presented. In addition, the role of local communities to respond to disasters in the event of a disaster safety situation is presented in an introductory way through overseas cases. This is as follows. First, the detailed status of the types of local communities, characteristics and capabilities of functional members of each region should be identified. Second, specific information on the current status of disaster safety vulnerable groups in the local community is needed. Third, it is necessary to diagnose and evaluate regional disaster safety vulnerabilities. This should be pre-ceded by a vulnerability analysis on the current status of the region's disaster safety vulnerable class. Fourth, it is necessary to create and share a manual on support for the disaster safety vulnerable class in the local community.

Keywords: Disaster Safety Vulnerable Group; Local Community; Diagnosis and Evaluation

1. Introduction

Recently, interest in the disaster vulnerable has increased with corona. In the case of Corona, the impact of a disaster is not the same for everyone, and it appears differently depending on the individual, region, and country. In other words, there are people or classes who suffer more damage from disasters, and because of this, disasters themselves occur equally to everyone, but the results are different. Disasters cause more physical, economic, social, and psychological damage, and this is called disaster inequality.

In this regard, Fuceri et al (2021) said that the corona aggravated income inequality more than the financial crisis and economic recession, and there are studies on the racial imbalance of corona victims in the United States (Hooper et al, 2020; Mutter, 2020). In addition, the death of three family members in the basement of a villa due to heavy rain in the metropolitan area in August 2022 also shows that the impact of the disaster is unequal.

Disaster damage is caused by a combination of physical, social, environmental and economic causes. Accordingly, there are people or classes that are more vulnerable to disasters. In this way, we express people or classes more vulnerable to disasters in various ways, such as the disaster vulnerable and the disaster safety vulnerable class. Due to globalization, aging, and polarization, the number of people vulnerable to disaster safety continues to increase. With the risk of various natural and social disasters increasing, such as the increased risk of infectious diseases such as corona, the increased risk of various natural disasters due to climate change, and the global economic crisis, the disaster safety vulnerable class is exposed to these disasters and the negative It is highly likely to be affected, so more active support policies and measures are needed.

In particular, the disaster safety vulnerable class needs help from others in each stage of disaster response, and above all else, the role of the community is more important than

anything else. Therefore, this study aims to suggest the role of the community and activation plan for the disaster response of the disaster safety vulnerable class.

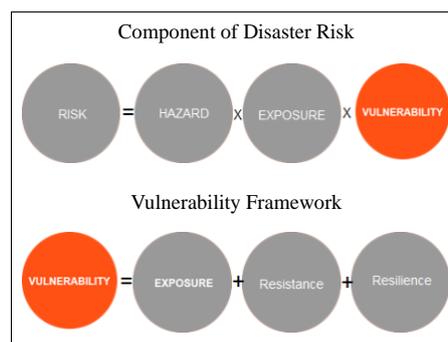
2. Understanding of Disaster Safety Vulnerable Group

1.1. Basic Discussion on Disaster Safety Vulnerable Group

Vulnerability is one of the elements constituting the concept of disaster risk. The risk due to disaster is the occurrence of hazards in a specific time and space, exposure to hazards, and the vulnerability of the society. is the result of (Figure 1). In other words, the degree of risk due to a disaster is determined by the degree of hazard, the degree of exposure, and the degree of vulnerability. Meanwhile, according to UNDRR, vulnerability is determined by physical, social, economic, or environmental factors or processes that increase the susceptibility of individuals, communities, assets, or systems to the effects of risks (UNDRR, <https://www.undrr.org/terminology/vulnerability>)

On the other hand, vulnerability is determined and explained by exposure, resistance, and resilience. Exposure is the property and population at risk, and resistance is measures to prevent, avoid, or reduce loss, and resilience. refers to the ability to return to a previous state or achieve a desired state after a disaster (Westen, <http://cdmea.org>).

Figure 1. Meaning of the Vulnerability



※ Source: Birkman et al(2013); UNDRR(<https://www.preventionweb.net>); Westen(<http://cdmea.org>)

The class with vulnerability to disasters, which is the subject of this study, is used in various terms such as disaster vulnerable, safety vulnerable, disaster vulnerable, safety vulnerable, and disaster safety vulnerable, and various definitions are given by scholars (Table 1). Article 3 of the 「Framework Act on Disaster and Safety Management」 in Korea uses the term safety vulnerable class, and defines the safety vulnerable class as those who are vulnerable to disasters due to physical, economic and social factors such as children, the elderly, the disabled, and the low-income class.

In this study, it is intended to be unified and used as the Disaster Safety Vulnerable Class, which encompasses not only disasters but also various safety situations, and has a strong meaning of cause and process rather than the result of a phenomenon (Kim Dong-ju, 2021). Continuing, the definition of the disaster safety vulnerable class follows the definitions of Jang Han-na (2016) and Kim Dong-ju (2021), which comprehensively stipulate the causes and factors of vulnerability in disaster safety. According to this, the disaster safety vulnerable class has limitations in risk observation, cognitive ability, information acquisition (acquisition), communication, and speech ability, risk avoidance behavior and evacuation behavior ability, etc. in the event of a disaster safety situation. It refers to people or classes who need help from others due to their vulnerability due to cultural and environmental factors (Kim Dong-ju, 2021; Jang Han-na, 2016). This includes the low-income class such as basic livelihood security recipients, the elderly, the disabled, children

and adolescents, pregnant women, critically ill patients with reduced mobility, patients with physical and mental diseases, registered foreigners living in Korea, visitors such as foreign tourists, multicultural families, and geographically isolated people.

Table 1. Concepts of Disaster Safety Vulnerable Class

Researcher	Terms	Concept and Scope
National Disaster Management Research Institute(2013)	Vulnerable people	<ul style="list-style-type: none"> • Persons or classes who are incapable of protecting themselves from safety-threatening hazards or removing risk factors, are prone to damage from disasters and accidents, or have difficulty in recovering from damages received
Hong(2015)	Weak people to safety	<ul style="list-style-type: none"> • A person or class that has a lower ability to protect themselves from risks and remove risk factors than a person or class of average ability that constitutes society, is more likely to be damaged by disasters and accidents, or has difficulty in recovering from damages received.
Jang(2016)	People Vulnerable to Disaster	<ul style="list-style-type: none"> • There are limitations in risk observation/cognitive ability, information acquisition (acquisition)/communication/speaking ability, risk avoidance behavior and evacuation behavior ability, etc., and vulnerability to physical, geographical, social, cultural, and environmental factors, etc., requiring the help of others.
Kim, et al(2017)	Weak people to disaster	<ul style="list-style-type: none"> • People who need help from others because it is difficult to properly judge the situation and respond promptly in the event of a disaster
Lee(2018)	Vulnerable Groups	<ul style="list-style-type: none"> • Classification of the scope of the safety vulnerable group: the socially disadvantaged in terms of economic, environmental, and physical aspects
Kim & Kwon(2021)	Disaster Vulnerable Groups	<ul style="list-style-type: none"> • Classes that are more likely to be exposed to economic, social, and environmental risks and have a harder time recovering from the risks after a disaster than the general class
Kim, Noh, &Yang(2021)	Disaster-safety Vulnerable class	<ul style="list-style-type: none"> • Classes that are a priori and cognitively vulnerable to disasters and safety • Classes with vulnerabilities or insufficiency characteristics that are relatively damaged by disasters in the process of disaster prevention, response, and recovery
Kim(2021)	Class Vulnerable to Disaster Safety	<ul style="list-style-type: none"> • Those who cannot economically maintain a basic safety environment, who are physically unable to quickly evacuate and respond to disasters on their own in the event of a disaster, or who are vulnerable to disasters due to environmental factors
Framework act on the management of disasters and safety(Korea)	Vulnerable Groups to Disaster	<ul style="list-style-type: none"> • Persons vulnerable to disasters due to physical, social, and economic factors, such as children, the elderly, the disabled, and the low-income class

In other words, the disaster safety vulnerable class refers to people or classes who need help from others because they cannot perform necessary response activities at each stage of prevention, preparation, response, and recovery due to economic, physical, and social factors when a disaster safety situation occurs.

As a representative example, in the response stage, those who cannot evade or evacuate on their own due to physical factors such as physical disabilities and need help from others can be considered as vulnerable to disaster safety. This can be explained by each response step and factor. This structured concept can help prepare customized support plans by specifying the vulnerability factors and causes of the disaster safety vulnerable class in each stage of disaster response in the future.

On the other hand, if the factors of the disaster safety vulnerable class are specified, the economic disaster safety vulnerable class includes basic livelihood security recipients and the next upper class. The physical disaster safety vulnerable class is a class that is physically and physically unable to respond due to various reasons, and includes the elderly, the disabled, infants and children, pregnant women, critically ill patients, and medical/chemical dependents. And social disaster safety vulnerable groups include the environmental, cultural, and geographical factors presented above, such as foreigners (residents and visitors), multicultural families, the homeless, and geographically isolated people.

In addition, vulnerability to disaster situations may appear overlapping due to complex actions of physical, social, and economic factors. For example, if you are a recipient of basic livelihood security, are elderly, have physical disabilities, and have a vulnerable living space, you may be vulnerable to all types of disasters, including social disasters such as various fires and natural disasters such as heavy rain, typhoons, and heat waves. It is necessary to specify and clarify the factors and the targets according to each cause and factor

1.2. Status of Disaster Safety Vulnerable Group

Based on the concept of disaster safety vulnerable class above, let's look at the current status of representative disaster safety vulnerable class for each factor. Representatively, the disaster safety vulnerable class due to economic factors is the basic livelihood security recipient, the disaster safety vulnerable class due to physical factors is the elderly, the disabled, and the disaster safety vulnerable class due to social factors are foreigners and multicultural households. In addition to this, there are various classes, but here, we would like to take a look at the class that can statistically grasp the current status.

First, looking at the number of basic livelihood recipients by economic factors, from 1,394,000 in 2012 to 2,360,000 in 2021, about 1 million people increased over 10 years, and the share in the total population also increased from 2.7% to 4.3%. On the other hand, the increase in the number of households receiving basic livelihood security is remarkable, doubling in 10 years from 820,000 households in 2012 to about 1.64 million households in 2021. From this, it can be seen that the number of households receiving basic living security recipients is one-person households. The increase in the number of single-person households receiving basic livelihood security means that it is becoming increasingly difficult to recover economically by one's own efforts.

Second, both the elderly and the disabled, who are vulnerable to disaster safety due to physical factors, are on an increasing trend for 10 years from 2012 to 2021. The number of seniors has almost doubled over 10 years, from 5.98 million in 2012 to 9.27 million in 2022. The elderly population also increased from 11.7% in 2012 to 18% in 2022. In other words, as of 2022, one out of five people in the total population can be regarded as an elderly person. The number of people with disabilities also decreased from 2.51 million in 2012 to 2.49 million in 2015, and then continued to increase, reaching 2.64 million in 2022, an increase of more than 100,000 over 10 years.

Third, foreigners and multicultural households can be cited as the class vulnerable to disaster safety due to social factors, which can be vulnerable to disaster safety due to linguistic factors and cultural factors as foreigners. The number of registered foreigners increased from 1.71 million in 2015 to about 2.22 million in 2019, before the corona, and then slightly decreased due to the corona, but reached 2.13 million in 2021, with more than 2 million foreign residents living there. Tourists are excluded here, meaning foreigners

residing in Korea for a long time. Multicultural households also increased from 960,000 in 2016 to 1.12 million in 2021, with more than 1 million households being multicultural. In particular, foreigners have difficulty accessing disaster safety information due to language reasons, which makes it difficult to respond quickly and appropriately in case of a disaster (Kim Young-hee et al., 2015).

Disaster and safety vulnerable groups such as basic livelihood recipients, the elderly and the disabled, foreigners and multicultural households are increasing due to polarization, aging, and internationalization, and the need for systematic and practical support strategies for these various types of disaster safety vulnerable groups is being emphasized.

3. Understanding the Local Community

A local community can be defined as a group of residents who pursue common values and goals while closely interacting with each other with a common social and emotional bond based on a certain area (Ministry of Public Administration and Security, 2017). Maclver (1917) finds the characteristics of community in locality and common value. Many scholars have suggested various ways about the concept of local community, but in general, locality, interaction, and common bond correspond to the three elements that make up the concept of local community (administration and administration). Ministry of Security, 2017).

Such a local community presupposes a series of organized activities that share the purpose and value of its members for the sustainable development of the community, and develop and practice social capacity to realize the purpose and value.

These local communities function as an alternative to voluntary solutions to the government's inadequate response to welfare, education, and safety issues. Although various unpredictable social problems occur frequently, the government is intensifying residents' anxiety by failing to take immediate action as well as fundamental prevention. As the principle of market economy, which emphasizes efficiency and economy in various fields such as welfare, education, environment, and safety, was emphasized, equity and interest in the underprivileged, underprivileged areas, and the next upper class increased. In order to solve these community problems, the role of the local community is being emphasized more and more.

Depending on the criteria of the local community, it can be categorized as follows. Here, we will examine the standards and types presented by the Ministry of Public Administration and Security (2017). First, it can be divided into a managerial model, a partnership model, and a citizen governance model according to the residents-government relationship. Second, it is divided into government-led and private-led types according to the main body, and the government-led type can be further divided into the central government-led type and the local government-led type, and the private-led type can be divided into the self-supporting type and the residents-expert partnership type. Third, depending on the form of organization, there are enterprise-type local communities, collaboration-type local communities, and grassroots movement-type local communities. Fourth, depending on the nature of the business, it can be classified into a financial business type, a grassroots movement type, and a corporate type. Finally, depending on the purpose of the project, there are regional industry type, sharing economy type, regional education type, regional welfare type, cultural history type, regional safety type, life maintenance type, environmental ecology type, and multicultural support type.

For disaster safety resilience, it is one of the important influencing factors of the local community, and this is also true for the disaster safety response of the disaster safety vulnerable class.

4. Local community revitalization plan to support the disaster safety vulnerable class - introductory discussion

I would like to present some introductory suggestions on how to revitalize the local community for the support of the disaster safety vulnerable class.

First, a detailed analysis of local communities in each region is needed. This starts with a detailed understanding of the current status of the type of community, its function, and the characteristics and capabilities of its members.

Second, it is necessary to secure detailed information on the disaster safety poor class in the region. Information on the types and specific status of the local disaster safety vulnerable class is needed. To this end, clarification of the concept and scope of the disaster safety vulnerable class should be given priority.

Third, it is necessary to diagnose and evaluate regional disaster safety vulnerabilities.

It is necessary to refer to the vulnerability measures in Queensland, Australia. Indicators that should be considered in defining target groups and conducting risk assessments of vulnerable people, e.g. access to events, lack of warning about events, people living in affected areas, working and working. It covers both those who are on the road and those who are traveling. Those with limited financial resources include pension and benefit recipients and low-income workers, including non-regular and part-time workers.

On the other hand, the protective factors needed for the disaster safety vulnerable group are the individual's health and welfare state, including psychological coping ability, well-being, and the amount of resources that people can draw to achieve a purpose or shared goal. access to and understanding of local community knowledge, access to and understanding of local community knowledge, appropriate shelter, personal safety and property and It is secure, the ability to protect one's livelihood financially. Therefore, support for these factors is needed (Queensland government, 2016).

Fourth, it is necessary to create and share a manual for disaster safety vulnerable support for local communities. It is necessary to analyze in detail the adverse factors for each response stage of the disaster safety vulnerable class and prepare a support strategy for them. It should be noted that the target range and vulnerable factors of the disaster safety vulnerable class by disaster type are different. In other words, since the vulnerable groups and vulnerable factors for natural disasters such as heavy rains and earthquakes and disasters caused by diseases such as infectious diseases are different, support measures need to be presented through detailed analysis⁶. Conclusions

In conclusion, the central government should implement active support and response measures to protect the vulnerable populations, promote policies, and improve crisis management communication to ensure a safe community, slow the spread of COVID-19, and alleviate the anxiety of the national population.

Further, identifying an evidence-based method to understand and address the psychological and social influences of COVID-19, such as excessive fear (or apathy or adequate attention) and discrimination, is crucial [128–130]. Analysis of public anxiety and danger awareness will provide insight regarding future risk factors for policy makers and assist in the optimization of potential and sustainable public health communication strategies [131–133].

Figure 2. Tips for Evaluating Vulnerable Populations



Source: Florida Division of Emergency Management

Lastly, it is necessary to establish cooperative governance between the local government and the local community, such as information sharing and opinion collection on the current status of the local community, and clarifying the role of each subject (Juho Lee, 2018). In the process of building governance, it is necessary to prepare guidelines so that policies suitable for demand can be prepared by identifying the current status of demographic characteristics of the region (Lee Ju-ho, 2018). A list of active supporters is prepared to enable evacuation support in the event of a disaster. For example, Kumamoto City establishes an evacuation support support plan according to Article 49 Paragraph 10 of the Framework Act on Disaster Countermeasures and Kumamoto City Regional Disaster Prevention Plan. The 'List of Supporters for Evacuation Action Re-quired' is prepared and stored by neighborhood associations in Kumamoto City, so that the list can be provided to relevant persons, such as evacuation support, only in the event of a disaster or an emergency that may occur. Performs information delivery functions such as confirmation of the safety of the person, support for moving to a safe place such as a designated evacuation center, evacuation preparation information to applicants requiring evacuation action, and reporting of information obtained during evacuation support activities (Kumamoto city homepage, <http://city.kumamoto.jp>).

References

1. Birkman, Joern, Omar Dario Cardona, Martha Liliana Carreño Tibaduiza, and Alex H. Barbat. 2013. Framing Vulnerability, Risk and Societal Response: The MOVE Framework. *Natural Hazards*. 67(2): 193-211.
2. Central Safety Management Committee. 2019. The 4th National Safety Management Basic Plan(2020-2024).
3. Furceri, D., P. Loungani, J. David Ostry, P. Pizzuto. 2021. The Rise in Inequality after Pandemics: Can Fiscal Support Play a Mitigating Role? IMF Working Paper.
4. Hong, Won Hwa. 2015. Analysis of Research Trends to Improve Disaster Response Capability of Safety Vulnerable People. *Korean Institute of Architectural Sustainable Environment and Building Systems*. 9(4): 6-13.
5. Hopper, Monica Webb, Anna Maria Naples, Eliseo J. Perez-Stable. 2020. Covid-19 and racial/ethnic disparities. *Jama*. 323(24): 2466-2467.
6. Jang, Hanna. 2016. A Study on the Establishment on Safety Management System for People Vulnerable to Disaster. *Journal of Governance Studies*. 11(2): 1-24.
7. Kim, Chang Jin, Eun Kyung No & Gi Geun Yang. 2021. Disaster-safety Vulnerable Class Derivation of Priority Factors for Disaster Resilience. *Crisisonomy*. 17(1): 1-20.
8. Kim, Do Hyung, Jeong Il Ra, Seong Su Byun, & Jae Eun Lee. 2017. Plans to support the vulnerable in case of large-scale disasters. *Hope Bridge Research Report*.
9. Kim, Dong Joo. 2021. A Brief Study on the Safety Rights of the Class Vulnerable to Disaster Safety. *Inha Law Review*. 24(3): 109-141.
10. Kim, Shin Hye and Seol A Kwon. 2021. Risk Issue Analysis of Disaster Vulnerable Groups -Focusing on Cases of Children and Pregnant Women. *The Journal of the Korea Contents Association*. 21(7): 291-303.

11. Kim, Younhee and Hyeon-Suk Lyu. 2015. An Empirical Study on Disaster and Safety Information Needs for Foreigners in South Korea. *Crisis and Emergency Management: Theory and Praxis*. 11(3): 151-176.
12. Korean Statistical Information Service. <http://kosis.kr>
13. Kumamoto city homepage. About Kumamoto-shi evacuation action required supporter support plan. https://www.city.kumamoto.jp/hpKijj/pub/detail.aspx?c_id=5&id=11091&class_set_id=3&class_id=531
14. Lee, Ju Ho. 2018. Improvement of Disaster-Safety Support Policies for Vulnerable Groups at Social Welfare Institutions. *Contingencies and Crisis Management Review*. 2(2): 47-65.
15. Mutter, John. translated Jang Sang Mi. 2021. *The Disaster Profiteers*. Paju: Dongnyok.
16. National Disaster Management Research Institute. 2013. *Developing Research Contents for Safe Living of Vulnerable People*.
17. National Fire Agency Press Release. 2023.1.31. National Fire Agency, 'Strengthen the fire safety net for the elderly': 56% of fire deaths in 2022 will be over the age of 60.
18. Queensland Government. 2016. People with vulnerabilities in disasters: A framework for an effective local response. https://www.qld.gov.au/data/assets/pdf_file/0022/55327/supporting-people-with-vulnerabilities-framework.pdf.
19. *Safety Journal*. 2023.2.13. The government systematically manages damage to the safety-vulnerable class... designation of national statistics. (<https://www.anjunj.com/news/articleView.html?idxno=36150>).
20. UNDRR, <https://www.preventionweb.net/understanding-disaster-risk/component-risk/vulnerability>.
21. UNDRR, <https://www.undrr.org/terminology/vulnerability>.
22. Westen, C.J. 5.3 Vulnerability. <https://www.cdema.org/virtuallibrary/index.php/charim-hbook/methodology/5-risk-assessment/5-3-vulnerability>.