

Exploring the Roles of Flood Disaster Workers in Flood Disaster Management: A Narrative Review

Tengku Syuhada Elissa Tengku Adam Azli, Noremy Md Akhir,
Surendran Rajaratnam

Centre for Psychology and Human Well-being Research, Faculty of Social Sciences and
Humanities, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia
Corresponding Author Email: noremy@ukm.edu.my

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Abstract

Effectiveness of flood disaster management is the ability to reduce the serious implications of disasters to every level of society in Malaysia. Therefore, the involvement of flood disaster workers from government agencies, non-governmental organizations, and volunteers is appropriate and important through joint cooperation, starting in the phases before, during, and after the disaster. This is because proactive planning and communication not only helps to control the impact of the flood situation that may occur but also reduces the risk to flood communities and the workload to disaster workers that may reduce the number of victims, economic losses, health deterioration, and security threats. However, most of the experiences of flood disaster cases in Malaysia have significant weaknesses in terms of planning, communication, and serious involvement, especially between flood disaster workers, community leaders, and volunteers. Therefore, the review of this article is related to the roles of flood disaster workers of various sectors in flood disaster management. The methodology used is through a literature search from the Google Scholar and ResearchGate databases. The final number of journal articles selected are 10 research studies. The themes that emerged from this review were flood disaster preparedness, flood psychoeducation, flood disaster response, relief support at evacuation centres, psychosocial support among flood disaster workers, and post-flood disaster recovery. Hence, comprehensive planning in disaster management between agencies and authorities involved is crucial for effective risk management.

Keywords: Agency Collaboration, Disaster Management, Flood Disaster Preparedness, Flood Disaster Response, Psychosocial Support

Introduction

Flood disasters lead to a decline in the well-being of life that affects human health and safety, environmental destruction, and economic recession (Nurul Atikah Zulkepli & Nor Diana Mohd Idris, 2022) and even cause lasting trauma after a disaster when it occurs over a long period of time such as uncontrollable and unexpected conditions (Umeda et al. 2018). In order to

reduce the risk of floods, collaboration between disaster management agencies is one of the most crucial for disaster management that is planned through joint discussions to produce more effective implementation on an ongoing basis. In addition, flood disaster officers not only respond immediately to disasters to rescue but also play a role in providing humanitarian aid during disasters such as food aid, health assistant, and shelter to affected victims (Asgary & Lawrence, 2014).

Flood disaster workers are made up of professionals in the field of health, volunteers, as well as front-line workers at disaster area. This group is a group of people who are vulnerable to witnessing extraordinary events, listening to the grief of flood victims, and witnessing serious incidents, as well as being exposed to traumatic and critical incidents continuously to carry out their responsibilities and roles, which has invited disaster workers to experience secondary trauma or vicarious trauma (Ireland et al., 2022; Pearlman & McKay, 2008). In Malaysia, flood disaster workers are consulted based on Instruction No. 20 from the National Security Council which is a rescue agency consisting of the Malaysian Special Search and Rescue Team (SMART), the Royal Malaysian Police (PDRM), the Malaysian Fire and Rescue Department (JBPM), the Malaysian Armed Forces (ATM), the Malaysian Ministry of Health (KKM), the Malaysian Civil Defence Force (APM), aid and rehabilitation agencies and voluntary bodies such as the Public Works Department (JKR), the Information Department, the Social Welfare Department (JKM), the Malaysian People's Volunteer Association (RELA), Tenaga Nasional Berhad (TNB), Telekom Malaysia Berhad (TM), Bulan The Malaysian Red Crescent (BSMM), as well as agencies of statutory bodies, private parties, volunteer organizations and private individuals (Directives National Security Council of Malaysia, 1997).

The role of flood disaster workers is not limited to actions during floods only because it is important to also be involved in mitigation planning, post-disaster recovery, public awareness of the dangers of floods, safety training, helping the resilience of flood communities, as well as mental and physical preparation and training among disaster workers to face it well. In addition, disaster workers also are responsibility to the community when involved in the post-disaster flood relief process, such as providing psychosocial support to victims in need (Hasanah Che Ismail & Asrenee Ab Razak, 2020). According to Nurul Ashikin and Nakamura (2020), the challenges faced by disaster workers in the role of providing help and support to flood victims are a difficult job when experiencing shortages in terms of manpower, logistics, and material, working in a stressful and risky environment. Therefore, the emotional and mental stress experienced by flood disaster workers needs to be emphasized and highlighted more issues in Malaysia. A study related to the functionality of flood disaster workers is important to be carried out and evaluated as an effort to provide a clearer picture of their functionality as well as the challenges they go through to carry out their respective responsibilities to the community. Therefore, through this narrative study, it is able to better highlight the role of flood disaster officers in Malaysia to encourage future studies that focus on issues related to flood disaster workers in more depth.

Methodology

This study produced a narrative study using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) technique, which means that data collection is the result of in-depth systematic literature review. The PRISMA technique guarantees high accuracy in qualitative research (Flemming et al., 2018), systematic quality recognized by

every researcher in the field of social science by using the help of accurate and relevant keywords based on the objectives of the study through several processes (Gilath & Karantzas, 2019). Among the stages of the process are identification, screening, qualification, and inclusion (Zainudin & Iksan, 2019).

Next, a literature review using Google Scholar and ResearchGate databases to obtain articles, journals, and documents that are related to the context of the study. From the results of the search, the article literature is in the range year of 2014 to 2024 by using the keywords "agency cooperation," "disaster management," "flood disaster response," "flood preparedness," and "flood psychosocial support" throughout the search and data collection process. Figure 1 shows the literature review selection process through a careful and systematic process before the in-depth review process were carried out.

Based on Figure 1 below, there are 147 articles found in the Google Scholar and ResearchGate databases in total. After all of them have been checked and evaluated based on their compatibility with the study, the selection process is done carefully and systematically. The selection of studies is limited to Malay and English articles only. Besides, the data used were fully using based on 10 selected articles. The abstract of each selected article is evaluated for its level of suitability and relevance through the assistance process that focuses on elements of flood disaster officers in disaster management, inter-agency cooperation, disaster preparation, and disaster response. Finally, an in-depth survey process was carried out to meet the main objectives of the study.

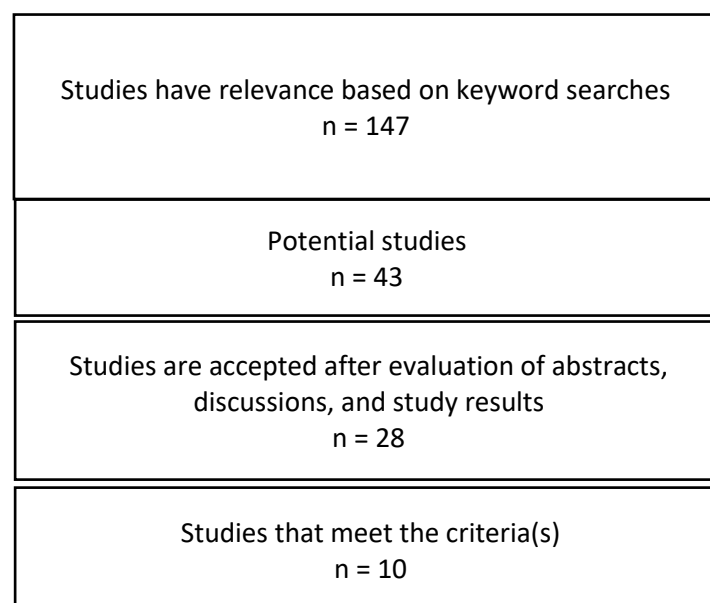


Figure 1: Research article selection process

Findings and discussion

Based on a total of 147 studies, it was found that only 10 studies were suitable based on the research criteria that had been identified. There are several themes that have emerged from past surveys from Azman et al. (2016), Siti Nurul Annisa Temrin & Azahan Awang et al. (2017), Puteri Fadzline Muhamad Tamyez et al. (2019), Cheong, et al. (2019), Nurul Ashikin Mabahwi & Nakamura (2020), Nor Faiza et al. (2016), Ahmad Zafran Shahrul Azhar et al. (2021), Nurin

Izati Arzemi et al. (2022), Lam & Chow (2022), and Nur Fathira Aimi Mansor et al. (2023). Among the themes obtained are flood disaster preparedness, flood psychoeducation, flood disaster response, support at evacuation centres, psychosocial support among flood disaster workers, and post-flood disaster recovery.

Preparedness of Flood Disaster

Flood disaster management covers various stages before, during, and after a flood disaster occurs, which must be followed by all the disaster workers of every agency involved. At the initial stage, cooperation between flood disaster response workers is important to ensure that disaster management is more coordinated and effective. This is because each agency plays an important role based on their respective expertise and professionalism. Planned flood disaster preparedness is aimed at the optimal use of resources, adequate manpower planning to cover a disaster event, and avoiding duplication of tasks. In a study conducted by Ahmad Zafran Shahrul Azhar et al. (2021), Nurul Ashikin Mabahwi & Nakamura (2020), and Puteri Fadzline Muhamad Tamyez et al. (2019), it was shown that the role of flood workers requires good cooperation between agencies for the implementation of an action plan to act in disaster management to reduce risk from various aspects to the community and workers that involved. According to Nurul Ashikin and Nakamura (2020), a total of 27 employees of disaster management agencies who are attempting to carry out disaster planning cooperation have identified a number of physical constraints that exist between them. These include enforcement power, manpower and logistics, insufficient funding, joint involvement, and communication. They also found that each issue that arises is relevant because they are not aware that they are invited to participate in management preparations, but that these need to be reviewed and re-examined by the government, the authority in charge. This is the case since flood disaster workers' primary responsibility is to assist their respective agencies in strategically addressing to help the community.

In addition, the cooperation of flood disaster workers in making preparations with training to deal with floods so that efficient actions can be taken by workers while the incident is happening. The study conducted by Ahmad Zafran Shahrul Azhar et al. (2021) explains some of the exercises carried out by workers and volunteers when facing a flood disaster, are the flood disaster evacuation exercises, gathering exercises and determining some locations to gather, emergency preparation exercises at the disaster site happened, and swimming training saved flood victims.

Next, the role played by disaster workers at the preparedness level is to raise awareness through lectures, flood hazard workshops, as well as flood risk reminders to the community (Nurul Annisa Temrin & Azahan Awang et al., 2017). Based on a study by Cheong et al. (2019), there is a statement that the flood disaster among the Malaysian Army Infantry Officers was a preparation how to respond during the flood efficiently and effectively.

Therefore, by making preparations through cooperation and communication from various flood disaster agencies consisting of diverse task forces capable of facing flood disasters well when each flood disaster worker reaches a level of readiness that is encouraging as a result of joint cooperation in making flood preparedness plans.

Psychoeducation of flood

Psychoeducation is one of the effective actions at the initial stage by fostering awareness and knowledge about the importance of flood disaster management that is planned for effective results in risk reduction for the community. Based on a study conducted by Cheong et al. (2019), the preparations made by the Malaysian Army to carry out their responsibilities with commitment in flood disaster management when deepening and learning methods to act, the importance of effective methods of acting, and awareness of safety on duty aspects. The importance of education and awareness for flood disaster worker (personnel) is to provide protection to them from experiencing deep risks from the aspect of physical and mental well-being because it can affect their daily lives either during and after duty.

Besides, flood disaster workers do not exclude volunteers from being involved as functional workers in carrying out their responsibilities to the community, especially in terms of providing humanitarian aid. Based on the study of Ahmad Zafran Shahrul Azhar et al. (2021), volunteers are exposed to various types of support and training assistance and nurtured awareness of the importance of appropriate action methods when a flood disaster occurs. In addition, the study also stated that volunteers were given and taught resilience methods while carrying out tasks in order to protect their well-being from experiencing significant and long-lasting psychological effects.

In addition, a study conducted by Nur Fathira Aimi Mansor et al. (2023), said that disaster management refers to aspects of knowledge, action, and steps that involve various agencies working together to create a risk management strategy as a preparatory action to face a flood disaster that covers supervision, responsibility, and effective recovery. Among them is the awareness campaigns about flood management strategies that require cooperation from related agencies such as the Malaysian Irrigation and Drainage Department to foster awareness among residents and communities to face flood disasters.

The knowledge and exposure of flood disaster officers by representing their respective agencies by involving to the local community, which affects through awareness of the importance of active actions when floods happen to them. Furthermore, it is important for flood disaster workers to understand the appropriate actions according to the needs of a situation based on the action plans from the actual flood simulation program and safety training.

Flood Disaster Response

Disaster workers act as the front-line responders to flood incidents to rescue and provide assistance to the affected groups immediately. Therefore, the disaster workers have the role of delivering early warnings before the expected flood disaster occurs by constantly monitoring the risk areas from time-to-time, especially during the monsoon season that hits Malaysia every year. According to a study conducted by Nor Faiza et al. (2016), the flood worker (officials) involved in giving early warnings to the residents are the Malaysian Meteorological Department, the Malaysian Irrigation and Drainage Department, the Malaysian Remote Sensing Centre, and the Department of the Environment.

In addition, the role of flood disaster workers is also by giving flood emergency warnings is supported by Nurin Izzati et al. (2022), who related the actions of the workers to

warn the victims who may be affected by the flood and at the same time send an emergency message to them to take action to save their lives.

Based on the study of Azman et al. (2016), at the stage when a disaster occurs, officers are directly involved in rescuing victims from flood areas to safe places, such as temporary relocation places. This is so because disaster workers play a very important role during flood disasters to rescue them from crisis situations and provide other emergency aid support such as immediate medical treatment services, food resources, and psychosocial support, especially to those who have experienced trauma like trapped in flood areas in long hours. The support and assistance given by the disaster workers is to save the lives of the victims and help them to cope with the crisis. Therefore, a comprehensive and planned approach among flood disaster workers is an important thing to constantly improve for the implementation of more effective actions, especially at the stage before and during the flood.

Relief Support at Evacuation Centres

Flood disaster workers should always be prepared for any possible flood event at anytime and anywhere. In order to cover the preparations, the disaster officers are ready with various types of assistance that are not limited only to rescue victims during floods. Among the aid distributed by flood disaster workers are health aid, food aid, and other basic aid to flood victims, especially at temporary evacuation centres or temporary flood shelters. Humanitarian aid is also not obtained simply from the government only because the involvement of non-governmental organizations, volunteers, and individuals also extends help and support to cover the deficiencies that exist to help the continuation of the well-being of the victims through the initial disaster workers involved (Lam & Chow, 2022) In addition, psychosocial support provided through various types of support kits is very helpful to those in need when there is, such as food kits, health kits, worship kits, clothing kits, education kits, and kits to save their valuable things properly.

Support in the form of material donations and social support is essential for all groups affected by floods, including those involved in supporting and helping flood workers, who can be known as flood rescuers. Hence, the involvement of disaster workers during flood disasters is very helpful and functional to the community.

Psychosocial Support among Flood Disaster Workers

Apart from providing help and support to flood victims, flood workers also play an important role among them to ensure their mental and emotional well-being is under control. This is because, officers are always faced with critical environmental situations such as destroyed surroundings, physical fatigue and secondary stress will affect their well-being and health. Therefore, psychosocial support is seen as an effective method used among officers to be resilient in order to carry out their duties more effectively. According to the study of Cheong et al. (2019) which is specific guidelines of disaster workers to be followed and obey as is an important plan to protect workers while on duty. Therefore, psychosocial support modules are important to be carried out effectively for flood disaster workers in Malaysia such as counselling service support, management stress, intervention and emotional management workshop.

Post Flood Recovery

Post-flood recovery support plays an important role in helping victims deal with the traumatic effects of the flood tragedy, emotional instability, as well as stress affecting the psychological effects. Based on a study by Lam & Chow (2022), among the support given by disaster workers to victims is psychosocial support such as cleaning process in their residential areas and logistical support that aims to help restore their daily lives as usual as giving physical and social support directly and indirectly. Therefore, post-physical recovery support from flood disaster workers affects the mental and emotional recovery of flood victims to be resilient to life after the disaster.

Table 1

Theme Findings from Selected Studies

Themes	Writers	Content of Study Findings
Flood disaster preparedness	(Ahmad Zafran Shahrul Azhar et al., 2021)	The collaborative involvement of government, non-governmental, and community leaders to work together to reduce disaster risk
	(Nurul Ashikin Mabahwi & Nakamura, 2020)	The results of the study show that the importance of the cooperation of 27 agencies involved in the flood disaster is important to have good communication.
	(Siti Nurul Annisa Temrin & Azahan Awang et al., 2017)	Lectures, campaign and workshops on flood hazards, as well as flood risk warnings from staff to flood communities.
	(Puteri Fadzline Muhamad Tamyez et al., 2019)	The need for cooperation between various parties (task agencies) in providing humanitarian aid to flood victims.
	(Cheong et al., 2019)	The training and morale preparedness among the Malaysian Army roles as flood disaster workers to face the flood disaster
Flood psychoeducation	(Cheong et al., 2019)	The preparation and planning of the Malaysian Army to commit to the flood response.

	(Ahmad Zafran Shahrul Azhar et al., 2021)	Training as a measure to prepare for flood disasters.
	(Nur Fathira Aimi Mansor et al., 2023)	Flood management education and disaster management courses
Flood disaster response	(Nor Faiza Mohd Tohit et al., 2020)	Responsibilities of officers to flood early warning system to immediate response.
	(Nurin Izati Arzemi et al., 2022)	The role of officers carrying out the delivery related to flood early warning.
	(Azman et al. 2016)	Involvement of agencies for the preservation of the lives of flood victims.
Relief support at evacuation centres	(Lam & Chow, 2022)	Non-governmental organization workers provide health (medical) and food assistance.
	(Nur Fathira Aimi Mansor et al., 2023)	Help from NGOs in flood areas.
	(Azman et al. 2016)	Support through the provision of basic needs kits and food aid.
Psychosocial support among flood workers	(Cheong et al., 2019)	An appropriate procedure to protect the officer when carrying out the roles.
Post-flood disaster recovery	(Lam & Chow, 2022)	Cooperate in helping flood victims clean their homes after the flood.

Conclusion

In conclusion, this article was produced with the best possible effort to examine past studies that are related to the role of flood disaster workers in Malaysia at various levels of disaster flood management. whether from the government, non-government, or volunteers. Based on a narrative review of this article, five themes have been produced, which include flood disaster preparedness, flood psychoeducation, flood disaster response, relief support at evacuation centres, psychosocial support among flood disaster workers, and post-flood disaster recovery. The involvement of flood disaster workers in Malaysia plays a very important role in the phases before, during, and after the disaster, which can lead to the implications of their psychosocial well-being either directly or indirectly. Although the issue of flood disasters is not new among the local community, the well-being awareness and

importance of involvement of flood disaster workers is still at a low level and has a clear gap in Malaysia. Therefore, it is hoped that studies related to the issue of flood disaster workers will be diversified so that the planning and implementation of flood disaster management can be done more effectively with the active involvement of flood disaster workers when the interests of their well-being are met.

Conflict of Interest

The researcher does not have any conflict of interest during the conduct of this narrative study.

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