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Civil-Military Coordination for Health Response to Urban Disaster in Malaysia: Document Analysis

Nurhan Norris Ma[1], Aida Jaffar [2], Halyna Lugova[3], Badrul Hisham Abd Samad[4], Mohd Rashidi Abdul Salam[1], Ambigga Krishnapillai[2]

[1]Humanitarian Assistance and Disaster Relief Research Centre, Universiti Pertahanan Nasional Malaysia, Wilayah Persekutuan Kuala Lumpur 57000, Malaysia, [2]Primary Care Unit, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia, Wilayah Persekutuan Kuala Lumpur 57000, Malaysia, [3]Faculty of Medicine and Health Sciences, University College Sedaya International (UCSI), Bandar Springhill, Mukim Jimah, 71010 Port Dickson, Negeri Sembilan, [4]Community Medicine Unit, Faculty of Medicine and Defence Health, Universiti Pertahanan Nasional Malaysia, Wilayah Persekutuan Kuala Lumpur 57000, Malaysia

Corresponding Author Email: ambigga@upnm.edu.my

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Abstract

Civil-military coordination remains pivotal during health response in disasters. This study examined the existing civil and military documentation on the health response to urban disasters and assessed the extent of interagency coordination for urban disasters among health and health-related agencies in Kuala Lumpur. A total of 25 papers were finally examined by the READ approach for document analysis using qualitative content analysis and focused on the functions of different organizations such as the Ministry of Health, Malaysian Armed Forces, and National Disaster Management Agency, Fire and Rescue Department, Malaysia Civil Defense Force, Social Welfare Department and the National Security Council. The Ministry of Health emerged as the leading agency with the most comprehensive set of documents (n=11) covering various aspects of disaster health response. The Malaysian Armed Forces also contributed two documents focusing on civil-military collaboration during the COVID-19 pandemic. The key themes addressed in these documents encompassed civil-military collaboration, health response, communication, emergency medical services, coordination, and command and control. The findings highlighted the necessity for enhanced documentation and coordination processes. Suggestions encompassed the implementation of uniform procedures, improving education and instruction, and promoting coordinated preparation to strengthen the efficiency of disaster response. Future research should investigate the practical obstacles to implementing policies and the effects of policy evolution on Malaysia's ability to withstand urban disasters, with the goal of strengthening its resilience.

Keywords: Civil-Military Coordination, Health Response, Urban Disaster, Malaysia, Disaster Management, Document Analysis

Introduction

Disasters require swift action and closed communication crossways to various public health and military health organizations. In the event of a disaster, health outcomes such as mortality and morbidity are often measured and used as indicators for disaster resilience and preparedness (Chan & Ho, 2018). However, strategic, operational, and tactical issues persist in practice, such as when and how civilian responders to disasters should engage with the military to achieve humanitarian goals (Cook et al., 2020). Inter-organizational collaboration is commonly stated as a key component of effective emergency response to mitigate the risks and consequences of extreme events such as natural disasters (Michaud et.al., 2019). The direct and indirect influences of disasters on public health and healthcare systems highlight the importance of the health sector in all phases of the disaster management cycle (Lugova et.al., 2020).

The disaster management cycle involves 1) mitigation 2) preparedness 3) response and 4) recovery phases. The priorities of the health sector in preparedness for disasters include health needs assessment, mass fatality management, the safety of the health facilities, emergency medical and human resources mobilization, provision of hygiene and sanitation needs, measurement of inequalities in health, etc. (Randolph et al., 2019). With the growing risk of disasters in Malaysia, it is critical to establish an organization dedicated specifically to disaster management. In 2015, NADMA was established to manage and coordinate operations among various government departments, host communities, and non-governmental organizations (NGOs) (Noraini & Khairul, 2018).

Three levels of scale constitute Malaysia's framework for disaster management, with every level represented by a respective committee. At the first level, the District Disaster Management Committee handles disasters, categorized as events which remain contained and do not extend to other areas. This committee coordinates various activities, such as allocating human resources, equipment, and supplies. At the second level, larger-scale disasters that have the potential to spread to other areas are handled by the State Disaster Management Committee, which augments the provision of relief to the affected area with additional financial, material, and human resources. At the third level, the provision of humanitarian relief is the responsibility of the federal government, and it applies to situations when disasters are categorized as complex, that is when they exacerbate existing challenges and have the potential to affect other countries (NADMA, 2016).

Under the National Security Council Directive No.20 (2012) to improve disaster management and control, the incident sites are divided into three zones: Red Zone, Yellow Zone, and Green Zone. The area in the immediate vicinity of the incident site is known as the "Red Zone," and it is accessible only by specially trained rescue teams from the following agencies: The SMART, FRDM, MAF, MOH, and others, while other agencies with specialize expertise assist these main rescue teams. The Control Post on Scene and posts for the main rescue agencies are in the Yellow Zone, which surrounds the Red Zone. Reinforced by assistance from the MCDF and other agencies with specialized expertise, the Yellow Zone serves as a support area for the main rescue teams. The Green Zone, surrounding the Yellow Zone, is reserved for relief and

recovery by governmental agencies, non-profit organizations, and other entities. The Media Management Center, Victims Family Center, Counseling Center, Food Store, and Morgue are among the crucial facilities located in this area. Based on the disaster's severity, the Disaster Operation Commander establishes the distance between zones and oversees organizing search and rescue operations within the affected areas. Only those with permission can enter these zones, and the PDRM, or RELA, oversee security and movement within them.

Following the classification of the recent COVID-19 pandemic as a Public Health Emergency of International Concern (PHEIC) by the World Health Organization (WHO), many countries leveraged military personnel to assist with a range of essential tasks. These included setting up field hospitals in France, Russia, and Serbia, as well as providing protective gear and enforcing lockdowns in South Africa, Spain, and Italy. In several countries, such as Indonesia and the Philippines, the armed forces supervised the entire pandemic response. Despite their reputation as a last choice, military forces have been recognized as the preferred choice in humanitarian crises health emergencies, and pandemic preparedness. Their amplified role aligns with the global trend of increased military participation both in global health policy and health-related activities within defense policy (Horne, 2021).

When a crisis response takes longer than expected, the armed forces are frequently called upon for assistance. Although disaster management is not one of the armed forces' primary missions, they are commonly deployed as part of disaster response efforts due to their possession of all necessary equipment, resources, and manpower (Halizahari et.al, 2021). Non-war missions, including deployment in a variety of crisis scenarios, have demonstrated the infantry unit’s adeptness in successfully responding to calamities. They are self-contained, possessing a complete structure, adequate equipment, trained employees, and highly mobile and reliable aid available when required (Ridzuan et.al., 2018).

Kuala Lumpur, the capital and largest metropolis in Malaysia, spans a total area of 243.65 square kilometers, making it highly inhabited and the country's busiest city. The city currently grapples with flooding, transportation congestion, and urban heat island effects (Rani et.al, 2020). As evidenced by flooding events in 2014 and 2017, and the COVID-19 pandemic in 2020-2023, the military's involvement in future humanitarian operations is likely to rise and remain crucial to the Malaysian government's national strategic objectives (Yusof, 2020). Guidelines for military engagement, both within and beyond military contexts, in global health are often lacking, as are structured opportunities for military and civilian organizations to engage with one another.

With a population of 46 million people, Malaysia's urbanization rate is predicted to reach 85 percent by 2040. Urbanization pressures, extreme climate conditions, and environmental degradation contribute to an increase in the frequency of disasters, leading to a higher number of victims, casualties, and infrastructure damage. Therefore, evaluating underlying risks, improving disaster preparedness, and developing a disaster-resistant urban community in vulnerable areas are all imperative (Sardi et.al., 2019).

Government entities in flood-related matters face challenges such as limited authority, inadequate enforcement power, lack of cooperation and collaborative risk-sharing, insufficient funding, scarcity of assets and staff, and communication barriers (Mabahwi et.al.,

2020). A recent study by Sulaiman et. al (2019) identified three major issues including reluctance to share information during multi-agency crisis response, absence of a unified platform for information sharing, and lack of trust among involved parties. In disaster response efforts, ineffective information sharing and coordination among agencies can negative impact collective decision-making and actions.

Additionally, a lack of coordination can result in various issues, such as improper deployment of first responder resources and delayed evacuations, ultimately leading to crisis escalation and increased casualties (Sulaiman et.al., 2019). Hence, the aim of the study was to identify and analyse existing civil and military documentation on the health response to urban disasters and to assess the extent of interagency coordination for urban disasters among health and health-related agencies, particularly in the context of urban disasters in Kuala Lumpur.

Methods

This study employed qualitative content analysis to analyse data gathered from document reviews. The goal of using content analysis is to generate a deep understanding of the content being analysed, and to identify key themes, patterns, and insights that can inform broader understandings of the research question being investigated. The authors used search terms related to the research question for document selection. The search terms encompassed broad concepts such as urban disaster, health response, Standard Operating Procedures (SOP), and civil-military coordination. Inclusion and exclusion criteria were established, including a publication date range from 2000 to 2022 and relevance to the research question, ensuring the adequacy of the collected data and its ability to cover a broad spectrum of perspectives.

The search was conducted through Google Scholar and the websites of all organizations involved in health response during urban disasters. In total, 56 documents were obtained. The READ approach Dalgish (2020) was selected for document content analysis due to its systematic process, aligning with the study's objective of comprehensively analysing documents. The READ approach involves the following steps: (1) data identification, (2) data extraction, (3) data examination, and (4) summarization of findings. Achieving data saturation, a common objective in qualitative research, was ensured through the thorough examination of a diverse range of documents obtained through both open-source databases and physical acquisition.

The study team comprises academic and professional experts in disaster management, particularly in health response. Documents were collected to assess the effectiveness of existing regulations, policies, and mechanisms related to multi-sectoral health response to urban disasters and emergencies. Data collection involved web-based searches for documents and obtaining physical copies from relevant stakeholders and agencies involved in health response to urban disasters, including the FRDM, DBKL, MAF, MCDF, MOH, NSC, NADMA, PDRM and JKM. The roles and responsibilities of these entities were identified and documented. The applied READ approach to document analysis is illustrated in **Figure 1**, which depicts the various phases of the analysis process, including data identification, extraction, examination, and summarization of findings. Each phase is accompanied by

relevant numerical data, providing insights into the progression of the document analysis process and the number of documents added, excluded or analysed at each stage.

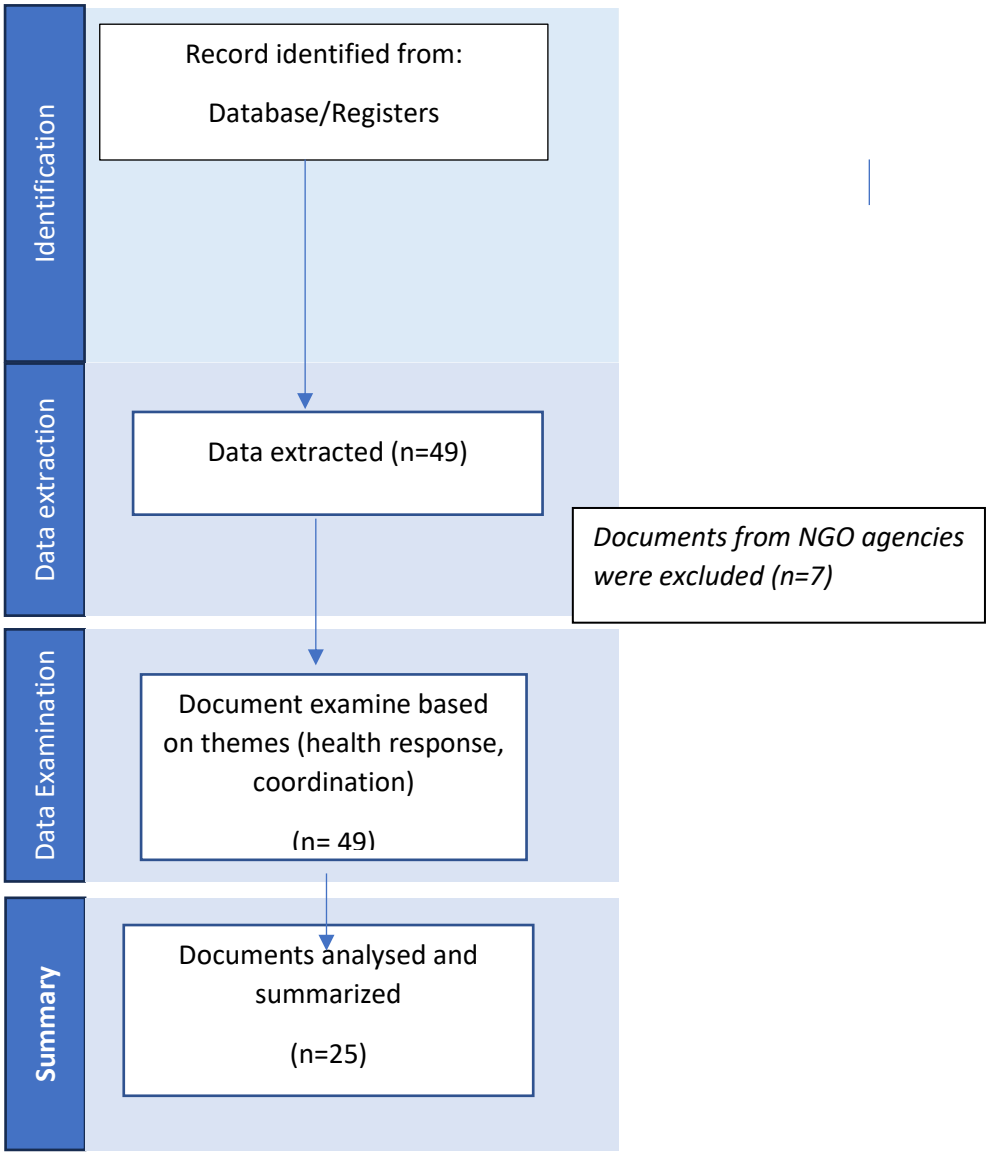

Figure 1. READ Approach of Document Analysis

Results

In total, 56 documents were obtained. Of these, 49 SOPs, documents, manuals, and directives were selected for the study after excluding seven documents from NGOs dealing with health responses to urban disasters, as the study focused on documents from governmental agencies. Finally, 25 documents outlining the duties and responsibilities of various Malaysian public authorities in response to public health emergencies were included. These documents cover natural disasters, man-made disasters, and biological occurrences **(Table 1).**

The documents analyzed (n=25) were from the following agencies: MCDF (n=2), MOH (n=11), Fire and Rescue Department (n=3), MAF (n=2), NADMA (n=2), KL City Hall (n=2), Social Welfare Department (n=1), and NSC (n=2). The analysis identified several key themes related to health responses to disasters: civil-military collaboration, health response, communication

during disasters, emergency medical services, coordination, and command and control **(Table 2).**

The results of the content analysis are as follows

Provision of Civil-Military Collaboration

This theme appears in the documents from the MOH, MAF, NADMA, and NSC. These documents elaborate on integration of the military in disasters management to enhance resource mobilization and operational efficiency.

Provision of Health response

Documents from the MCDF, MOH, NADMA, and NSC emphasize the roles and responsibilities in ensuring public health during disasters. These include strategies for disease prevention, health education, and continuity of healthcare services.

Provision of Communication During Disaster

Effective communication during disasters is addressed in the documents from the MCDF, MOH, Fire and Rescue Department, MAF, NADMA, and NSC. These guidelines stress the importance of timely and accurate information dissemination to the public and coordination among responding agencies.

Provision of Emergency Medical Services

The theme is presented in the documents from the MCDF, MOH, MAF, NADMA, and NSC. They outline protocols for providing immediate medical care, triage procedures, and emergency medical logistics.

Provision on Coordination

Coordination is a critical theme in the documents from the MCDF, MOH, Fire and Rescue Department, MAF, NADMA, KL City Hall, Social Welfare Department, and NSC. These documents detail mechanisms for inter-agency coordination and resource sharing to ensure an effective disaster response.

Provision of Command and Control

This theme appears across documents from the MCDF, MOH, Fire and Rescue Department, MAF, NADMA, KL City Hall, Social Welfare Department, and NSC. Command and control structures are crucial for maintaining order and ensuring a coordinated response during disaster scenarios.

Discussion

Civil-military coordination is particularly relevant for the health sector, as military involvement has historically been a part of counterinsurgency strategies. The integration of military support in public health emergencies is increasingly viewed as essential for national stability. The Highland Towers Condominium incident in Kuala Lumpur, which occurred in December 1993, involved the catastrophic collapse of one of the three 12-story buildings, resulting in the deaths of 48 people. This tragedy exposed significant deficiencies in disaster coordination practices and regulatory oversight, leading to widespread public outcry and demands for improved disaster management. During the incident, the Malaysian Armed

Forces played a crucial role in the rescue and recovery operations, highlighting the need for effective civil-military coordination, which subsequently led to the formulation of the NSC Directive No. 20, establishing a comprehensive framework for disaster management in Malaysia (Hassandi, 2014).

The NSC has developed two key documents focusing on disaster response, including protocols for civil-military coordination. These documents provide guidelines for readiness, immediate response, and recovery, emphasizing emergency medical services, resource allocation, and inter-agency coordination. NADMA, as the central agency, oversees the implementation of disaster management policies, ensuring compliance with regulations and efficient response at all levels. However, gaps remain, such as the absence of documentation on civil-military collaboration from the PDRM and other key responders, highlighting areas for improvement.

For Kuala Lumpur, disaster management is structured across three levels: district, state, and national. As the capital city of Malaysia, Kuala Lumpur holds a unique status that necessitates a comprehensive and multi-tiered approach to disaster management. The city's role as a political, economic, and cultural hub means that disasters here can have far-reaching implications, potentially escalating to international levels. Consequently, the highest level of disaster management, the national level, is involved to ensure robust coordination and resource allocation. Despite this significant role, Kuala Lumpur City Hall lacked documentation on civil-military coordination at the time of this study, indicating a potential area for policy enhancement (National Security Council, 2012)

As expected, the MOH emerged as the leading agency with the most comprehensive set of documents (n=11) covering various aspects of disaster health response. These include civil-military coordination, health response, emergency medical services, communication, coordination, command, and control. The MAF also contributed significantly with two documents focusing on civil-military collaboration, notably through initiatives such as the GKVSTF established during the COVID-19 pandemic
(Mahmood et.al., 2021)

The findings from this study have several significant implications for policy and practice in disaster management. Firstly, the development of standardized protocols for civil-military coordination is crucial to ensure consistency and efficiency in disaster response efforts. Secondly, establishing comprehensive training programs for disaster response personnel across various agencies will significantly enhance readiness and operational coordination. Thirdly, encouraging integrated planning and coordination among all disaster management stakeholders is essential to prevent resource duplication and enhance overall response effectiveness. Lastly, improving documentation practices across all relevant agencies, including those currently lacking such records, will provide a more comprehensive and cohesive framework for disaster management. By addressing these key areas, policymakers and practitioners can significantly improve disaster response and management outcomes

Conclusion

To summarize, the analysis reveals a robust framework for disaster management in Malaysia, yet also underscores the need for continuous improvement in coordination and documentation practices. Enhancing civil-military collaboration and ensuring comprehensive,

up-to-date documentation across all relevant agencies will be crucial for improving disaster response effectiveness. Due to the evolving nature of disasters and the increasing frequency of climate change-related disasters, all relevant authorities must foster coordination to minimize disaster impact, particularly in urban areas. Coordination among all major disaster management players fosters better understanding and awareness among professionals and agencies through command, communication, control, and coordination. The coordinated approach significantly aids in maximizing resource allocation, preventing duplication of efforts, reducing or avoiding potential disaster losses, ensuring prompt and appropriate aid to disaster victims, and achieving rapid and effective results.

Further research should focus on exploring the practical implementation of disaster management policies, identifying barriers to effective coordination, and developing strategies to address these challenges. Additionally, examining the impact of recent disasters on policy evolution and response mechanisms will provide valuable insights for continuous improvement in this field. By addressing these recommendations, Malaysia can enhance its resilience to urban disasters, ensuring better preparedness and a more effective response to future emergencies.

Table 1
Summary of documents analyzed using the READ approach.

No.	AGENCY	SCOPE OF SERVICES IN RELATION TO HEALTH RESPONSE TO URBAN DISASTERS	NAME OF THE DOCUMENT/STANDARD OPERATING PROCEDURE/GUIDELINES	YEAR OF PUBLICATION	TYPES OF HAZARDS
1.	Malaysia Civil Defence Forces	The manual details civil defence roles in emergency management, SOPs for services, and disaster response, but lacks agency coordination and military involvement mechanisms	Disaster Management and Operations Division, Malaysian Civil Defense Department. (2011). Operating Procedures of the Malaysian Civil Defense Department (Volume 2). Malaysian Civil Defense Department	2011	Man-Made & Natural Disasters
2.	Malaysia Civil Defence Forces	The document details health response within ICS, emphasizing the Medical Plan (ICS 206), health and safety briefings, and Incident Action	Syed Baharom, S. A. S., Sardi, T. Dr. M. F., Muslim, K., & Muslim, F. (2022). Pengenalan Incident Command System (ICS). Selangor: Bahagian Pengurusan Latihan, Angkatan	2022	Man-Made & Natural Disasters

		Plan (ICS 215A) for safety analysis.	Pertahanan Awam Malaysia		
3	Malaysia Armed Forces	The document outlines civil-military health coordination for disaster response, including assessing health threats, supporting local infrastructure, providing supplies, primary care, environmental health services, command by senior health officers, and coordinating with NGOs and international organizations.	Medical Battalion (Provisional). (2009). The Royal Medical and Dental Corps (RMDC).	2009	Man-Made & Natural Disasters
4.	Malaysia Armed Forces	The "Armed Forces Medical and Technical Instruction" (AFMATI) outlines civil-military coordination in disaster relief, focusing on medical battalions' roles, primary care, aerophysiology training, veterinary, rehabilitation, and mental health services, and collaboration with civilian agencies to ensure effective	Division of Health Services. (2011). Armed Forces Medical and Technical Instruction PKAT Volume 1 (Part 1-2). Malaysian Armed Forces Headquarters	2011	Man-Made & Natural Disasters

		emergency response and military readiness.			
5.	National Disaster Management Agency	The health response includes immediate protective actions, individual decontamination, and medical support. The Ministry of Health establishes medical bases, provides emergency services, public health and psychosocial support, distributes radiation medication, and ensures long-term health monitoring and recovery efforts post-disaster.	National Disaster Management Agency. (2021). Standing rules of operations for the handling of nuclear and radiological disasters. Prime Minister's Department, Putrajaya.	2021	Man-made Disaster
6.	National Disaster Management Agency	Provision of public health intervention and emergency health response to biological events	National Security Council. (2012). MKN Instruction No. 20 (Revision): National Disaster Management Policy and Mechanism. Prime Minister's Department.	2012	Man-Made & Natural Disasters
7	Ministry of Health	The document outlines a structured health response for mass casualty incidents, detailing hospital activation, field management, roles of medical coordinators,	Disease Control Division Surveillance Branch. (2015). Disaster management plan (Mass Casualty Incident Sub-Module). Ministry of Health Malaysia.	2015	Man-Made & Natural Disasters

		emergency communication via MECC, national and state-level coordination, and victim evacuation to provide immediate care and efficiently assess public health threats.			
8.	Ministry of Health	The Ministry of Health Disaster Management Plan 2015 outlines health crisis management, disaster identification, reporting channels, and coordination mechanisms. It includes guidelines like the National Influenza Pandemic Preparedness Plan and MySED, focusing on structured responses and efficient communication for public health threats.	*Ministry of Health Malaysia. (2015). Ministry of Health Disaster Management Plan 2015.*	2015	Man-Made & Natural Disasters
9.	Ministry of Health	*The "National Influenza Pandemic Preparedness Plan" includes enhanced surveillance, timely access to vaccines and antivirals, public health measures,*	*Ministry of Health Malaysia. (2006). National influenza pandemic preparedness plan*	2006	Biological

		quality medical care, effective communication, and coordinated planning to minimize morbidity, mortality, and social disruption during a pandemic.			
10.	Ministry of Health	**The Haze Health Management Action Plan includes continuous epidemiological surveillance, equipping health facilities with protective gear, issuing public health advisories, activating crisis centers, and training healthcare workers to ensure coordination and preparedness during haze events to mitigate health impacts**	**Ministry of Health Malaysia. (2020). Haze Health Management Action Plan**	2020	Man-made
11.	Ministry of Health	The Crisis and Disaster Management Plan at the Ministry of Health Malaysia prioritizes optimal care for disaster victims, addressing diverse impacts, and managing response challenges. It	**Ministry of Health Malaysia. (2015). Crisis and Disaster Management Plan at the Ministry of Health Malaysia. Ministry of Health Malaysia.**	2015	Natural and man-made

		includes psychosocial teams for policy support, situational assessment, and assistance at various levels.			
12.	Ministry of Health	The document provides references for incident management and safety regulations to enhance response capabilities.	**Ministry of Health Malaysia. (2019). Internal Emergency and Disaster Incident Action Plan for Ministry of Health Malaysia Hospitals. Ministry of Health Malaysia**	2019	Natural and man-made
13.	Ministry of Health	The document emphasizes coordinating resources, sharing information, and conducting daily briefings for effective crisis management. It highlights monitoring pharmacy staff stress, ensuring their well-being, and planning for recovery and continuity of services post-crisis, including staff duty rearrangements and training exercises.	Pharmacy Services Division, Ministry of Health Malaysia. (2016). Crisis and Disaster Management Plan for Pharmacy Services (Edition 1 Year 2016).	2016	Natural and man-made
14.	Ministry of Health	The MYSED II (2017-2021) emphasizes preparedness and effective response to public health emergencies through	Ministry of Health Malaysia. (2017). Malaysia Strategy for Emerging Diseases (MySED) II (2017–2021) National Strategic Work Plan. Ministry of Health Malaysia	2017	Natural and man-made

		surveillance, risk assessment, and response systems. It focuses on timely information dissemination to healthcare providers, developing an all-hazards response plan, resource mapping, and managing multiple threats for robust national readiness			
15.	Ministry of Health	**The document details coordination mechanisms for managing CBRNe incidents, including the Incident Command System (ICS), Medical Emergency Command Centre (MECC), inter-agency collaboration, continuous surveillance and reporting by CPRC, and public health activities, ensuring structured and collaborative management.**	Ministry of Health Malaysia. (2018). Disaster Management Plan - CBRNe Sub Module.	2018	Technological disaster
16.	Ministry of Health	**The document outlines flood disaster coordination across national, state, district, and health clinic**	**Ministry of Health Malaysia. (2009). Flood Management Guidelines (Health). Putrajaya: Environmental Health Unit, Non-Communicable Diseases**	2009	Natural disaster

		levels. Responsibilities include preparation, real-time management, and post-disaster recovery, ensuring efficient health services, safety, and resource management through structured committees and detailed operational activities.	**Branch, Disease Control Division.**		
17.	Ministry of Health & Armed Forces	The Greater Klang Valley Special Task Force Playbook outlines a structured COVID-19 coordination mechanism, emphasizing existing networks, adaptive workforce, crisis command center, KPIs, multi-sector expert involvement, and local adaptations for efficient pandemic respon	**Mahmood, J., Nordin, R., Faiesall, S. M., & Mohd Zainal, K. (2021). Greater Klang Valley Special Task Force Playbook.**	2021	Biological
18.	Department of Social Welfare Malaysia	The document "PTO Bencana 2018(2)" does not explicitly define "health response.	Ministry of Women, Family, and Community Development. (2018). Peraturan Tetap Operasi Pengurusan Bencana Jabatan Kebajikan Masyarakat (Pindaan 2018). Ministry of Women, Family, and	2018	Natural disaster Man Made Disaster

			Community Development		
19.	Fire and Rescue Department of Malaysia	The document primarily focuses on the Fire and Rescue Department of Malaysia's operational procedures during firefighting and rescue operations. It outlines roles, responsibilities, and coordination mechanisms for different command levels. Specific health responses during emergencies are not detailed; instead, the emphasis is on the operational aspects of firefighting and rescue missions	Malaysian Fire and Rescue Department. (2014). Standing Order of the Director General Number 3 of 2014: Instructions for the Implementation of Tasks of the Operation Commander. Malaysian Fire and Rescue Department Headquarters.	2014	Natural disaster Man Made Disaster
20.	Fire and Rescue Department of Malaysia	The document outlines EMRS health response protocols, focusing on emergency medical care for firefighters and victims, transport to medical facilities, coordination with other agencies, health monitoring, equipment maintenance, and documentation. EMRS teams perform triage,	Malaysian Fire and Rescue Department. (2014). Director General's Letter of Instruction Number 2 of 2014: Uniform Operating Procedures - Emergency Rescue and Treatment Services with EMRS Machinery. Malaysian Fire and Rescue Department Headquarters.	2014	Natural disaster Man Made Disaster

		provide medical interventions, and ensure readiness and hygiene during and after operations, ensuring comprehensive care and effective response.			
21	Fire and Rescue Department of Malaysia	**The document details STORM's health response, emphasizing paramedic care, stocked medical kits, training, and operational guidelines for disaster preparedness and effective medical response during operations.**	Malaysian Fire and Rescue Department. (2012). Uniform Operating Procedures (POS): Operation of STORM. Malaysian Fire and Rescue Department, Fire and Rescue Operations Division.	2012	Natural disaster Man Made Disaster
22.	Kuala Lumpur City Hall	The document details mobilizing emergency rescue squads and clean-up crews, raising community awareness of heat wave risks, implementing multilingual early warning systems, and enhancing post-disaster education access to support disaster risk reduction and resilience	**Kuala Lumpur City Hall. (2021). Kuala Lumpur Climate Action Plan 2050. City Planning Department.**	2021	Natural disaster Man Made Disaster
23.	Kuala Lumpur City Hall	The document provides guidelines for health response, including	Kuala Lumpur City Hall. (2021). Emergency Action Plan Guidelines (External).	2021	Natural disaster Man Made Disaster

		establishing protocols, preparing medical teams, coordinating with hospitals, supplying first aid and medical supplies, setting up temporary facilities, and emphasizing communication strategies to inform the public about health risks and available services during emergencies			
24.	Malaysian National Security Council	The document outlines that the Ministry of Health (KKM) provides emergency medical services, treats injuries and manages chronic diseases, ensures maternal health in evacuation centers, and conducts health education campaigns to prevent disease outbreaks	National Security Council. (2011). Standing Rules for Tsunami Disaster Management Operations. Putrajaya: Prime Minister's Department.	2011	Natural disaster
25	Malaysian National Security Council	The document outlines a detailed earthquake disaster response plan, emphasizing immediate medical services, public health measures, psychological	National Security Council. (2011). Standing Rules for Earthquake Disaster Management Operations. National Security Council.	2011	Natural disaster

		support, and temporary health facilities. It stresses coordination among health agencies and mandates regular training for responders to ensure efficient and effective health service delivery during emergencies			

Table 2
Summary of Document Analysis Based on Identified Themes

No.	Agency	Number of Documents	Provision of Civil-Military Collaboration	Provision of Health response	Provision of Communication During Disaster	Provision of emergency medical services	Provision on coordination	Provision of Command & Control
1	Malaysia Civil Defense Force	**2** [1], [2]	-	+	+	+	+	+
2	Ministry of Health	**11** [7],[8],[9],[10],[11],[12],[13], [14],[15],[16],[17]	+	+	+	+	+	+
3	Fire & Rescue Department	**3** [19],[20],[21]	-	-	+	-	+	+
4	Malaysia Armed Force	**2** [3],[4]	+	-	+	+	+	+
5	NADMA	**2** [5],[6]	+	+	+	+	+	+
6	Kuala Lumpur City Hall	**2** [22],[23]	-	-	-	-	+	+
7	Social Welfare Department	**1** [18]	-	-	-	-	+	-
8	National Security Council	**2** [24],[25]	+	+	+	+	+	+
TOTAL DOCUMENTS		**25**	**4**	**4**	**6**	**5**	**9**	**8**

Abbreviations

MOH -Ministry of Health Malaysia

NADMA -National Disaster Management Agency

MAF -Malaysia Armed Forces

RELA -Malaysia Volunteers Corps Department

MCDF -Malaysia Civil Defence Force

FRDM -Fire and Rescue Department of Malaysia

DBKL -Kuala Lumpur City Hall

JKM -Department of Social Welfare Malaysia

NSC -Malaysian National Security Council

PDRM -Royal Malaysia Police

SMART -Special Malaysian Disaster Assistance and Rescue Team

GKVTF -Greater Klang Valley Special Task Force

Declarations
Ethical approval for this study was obtained from the local committee responsible for evaluating and approving research studies (JKEP:7/2023), ensuring compliance with both the Declaration of Helsinki and national legislation outlining ethical research guidelines and standards**.**

Consent For Publication
Not applicable.

Availability of Data and Material
All the data included in this manuscript is available upon request.

Competing Interests
The authors declare that they have no competing interests.

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Authors' Contributions
All the authors designed the research. Nurhan Norris Ma and Mohd Rashidi Abdul Salam performed the data collection and analysis. Aida Jaffar, Halyna Lugova, Ambigga Krishnapillai and Nurhan Norris Ma performed the interpretation of the data and created the initial manuscript draft. Aida Jaffar, Halyna Lugova, Ambigga Krishnapillai, Nurhan Norris Ma and

Badrul Hisham Abd Samad wrote the manuscript. All authors read and approved the final manuscript.

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