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RAPID ASSESSMENT OF CRITICAL FACILITIES TO EARTHQUAKE DISASTER: HOSPITAL PREPAREDNESS IN WEST JAVA PROVINCE, INDONESIA AND ITS IMPLICATIONS FOR DISASTER RISK COMMUNICATION

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ABSTRACT

Hospitals as critical health facilities, play an important role in the economic and psychological healing of the community following a disaster. Hospitals are crucial because they save lives in the afflicted community, and they must be able to endure dangers and continue to function during and after a disaster. Using a questionnaire survey, this study examines the earthquake preparedness of hospitals in West Java Province. The questionnaire consists of four pillars of hospital preparedness in terms of structural, non-structural, functional, and human resources that include six parameters, and 24 indicators. This research uses lessons from the potential earthquake risk in the southern part of West Java to analyze the level of disaster preparedness as well as the gaps for these hospitals in West Java regions. This status and the gaps serve as a starting point for determining how to enhance preparedness and resilience to future catastrophic earthquake disaster threats through disaster risk communication.

Keywords:
critical health facilities, earthquake, hospital, preparedness, West Java, disaster risk communication

1. INTRODUCTION

Healthcare facilities play a significant part in the economic and psychological rehabilitation of disaster-impacted people and are especially vital because of their involvement in saving lives. Their mission is to not only give medical assistance but also to save people in the event of a calamity. Hospitals, as one type of health facility in cities, must be able to endure dangers and continue to operate. Destruction of these facilities impedes relief and recovery efforts, as demonstrated by the following examples.

The December 2004 Earthquake and Tsunami in Aceh impacted greatly in many ways, one of them was the loss of invaluable human and physical resources, which affected the healthcare industry more than other sectors (Carballo et al, 2005). The magnitude of the earthquake and the Tsunami's consequences varied depending on factors such as the region's physical terrain, the force of the waves when they impacted the beach and the amount to which the waves entered the shoreline. In Indonesia, the most badly affected country, the Earthquake and Tsunami destroyed 30 out of 240 health facilities, severely damaged 77, and caused moderate damage to an additional 40 (Center of Excellence in Disaster Management and Humanitarian Assistance, 2018). The loss of health staff was particularly significant, and in a country with a limited number of physicians,

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nurses, and midwives, the deaths (or still missing status) of as many as 700 out of 9800 health workers was a significant blow to the healthcare system and people it served (Country presentation of Republic of Indonesia, 2005). The fact that 30% of the region's midwives perished or went missing already jeopardizes safe maternity and infant care (Affal, 2005). The above example made World Bank forecasts that the health sector in Indonesia suffered losses of roughly $91.9 million, with a total cost of $131.14 million expected for health facility repair (Bappenas and World Bank, 2005a and 2005b). Furthermore, the 2011 Great East Japan Earthquake and Tsunami (GEJET) in Tohoku, Japan. The catastrophe caused the entire and partial collapse of 11 hospitals in three prefectures (Iwate, Miyagi, and Fukushima) (World Bank, 2012). The loss of healthcare facilities emphasizes therefore the massive investments required for disaster preparedness that includes risk communication.

Addressing the above, highly natural disaster risk nations were gathered at the Third UN World Conference in Sendai, Japan, on March 18, 2015. It is the outcome of stakeholder consultations initiated in March 2012 and inter-governmental negotiations from July 2014 to March 2015, supported by the United Nations Office for Disaster Risk Reduction at the request of the UN General Assembly (UNDRR, 2015). At that UN conference, nations agreed on the Sendai Framework for Disaster Risk Reduction 2015-2030. The Sendai Framework is the successor instrument to the Hyogo Framework for Action (HFA) 2005-2015: Building Disaster Resilience in Nations and Communities. The HFA was conceived to provide additional impetus to the global work under the 1989 International Framework for Action for the International Decade for Natural Disaster Reduction, the 1994 Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness, and Mitigation and its Plan of Action, and the 1999 International Strategy for Disaster Reduction.

The Sendai Framework is based on features that provide continuity with the work done by states and other stakeholders under the HFA, as well as several innovations requested during discussions and negotiations. Many observers have recognized the most noteworthy changes as a strong emphasis on disaster risk management as opposed to disaster management, the definition of seven global targets, the reduction of disaster risk as an expected outcome, a goal focused on preventing new risk, reducing existing risk and strengthening resilience as well as a set of guiding principles, including primary responsibility of states to prevent and reduce disaster risk, all-of-society and all-of-state institutions engagement. In addition, the scope of disaster risk reduction has been broadened significantly to focus on both natural and man-made hazards and related environmental, technological, and biological hazards and risks; highlighting that health resilience is strongly promoted throughout.

The Sendai Framework also articulates the following: the need for improved understanding of disaster risk in all its dimensions of exposure, vulnerability and hazard characteristics; the strengthening of disaster risk governance, including national platforms; accountability for disaster risk management; preparedness to “Build Back Better”; recognition of stakeholders and their roles; mobilization of risk-sensitive investment to avoid the creation of new risk; resilience of health infrastructure, cultural heritage and work-places; strengthening of international cooperation and global partnership, and risk-informed donor policies and programs, including financial support and loans from international financial institutions (UNDRR, 2015).

This Sendai Framework for Disaster Risk Reduction has seven targets and one of them is to substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030 (UNDRR, 2015). The imminent collapse of healthcare facilities in the above global earthquake disasters emphasizes the massive investments required for disaster preparedness. However, advancements in hospital technology are sometimes rendered inoperable owing to structural breakdowns at a time when these crucial installations are required to save the lives of catastrophe victims. Even when hospital facilities are structurally sound, the capacity to give help during times of greatest need is weak. Inadequate beds, a shortage of medical and support staff,

equipment, and facilities, or a rise in the number of patients requiring medical treatment might all be reasons. It is critical to safeguard and strengthen these facilities.

Hospitals are frequently connected with disaster response, but they have a greater role in safeguarding the safety of their especially vulnerable clients (PAHO/WHO 2005). An examination to investigate the adequacy of preparedness in Japan's Osaka Prefecture was performed by Kai, Ukai, and Ohta (1994). They discovered that none of the 265 hospitals surveyed could meet the disaster preparedness criteria, which included sufficient electricity, gas, water, food, and medical supplies in the event of a disaster. Followingly, Mulyasari et al (2013) surveyed hospitals in Tohoku and Nankai regions post-2011 GEJET and found that most respondent hospitals have functional preparation, which is important during a disaster's emergency phase; but the other three pillars of preparedness—structural, non-structural-,-and human resources—need to be enhanced. The frequency of disaster occurrences recorded throughout the world has decreased in the previous decade, but the number of people directly and indirectly impacted by disasters, as well as the expenses associated with them, is increasing (Laframboise and Loko 2012). This necessitates safer hospitals in cities all around the world.

Therefore, down to that issue, this research attempts to contribute to reducing such damages to health facilities/hospitals as one of the critical infrastructures by examining their preparedness including risk communication in high earthquake risk regions such as Indonesia. During an emergency or disaster, the relationship between hospital disaster preparedness and risk communication is crucial. Effective risk communication is critical to ensure that hospitals can appropriately respond to emergencies and offer needed care to the impacted population. In short, hospital disaster preparedness and risk communication are closely intertwined. Effective risk communication is essential to support the hospital's preparedness efforts, ensuring that hospitals can provide critical care, information, and support during emergencies and disasters while maintaining the safety and well-being of patients, staff, and the community. Widyantoro and colleagues (2020) have researched the relocation of earthquakes reported by Indonesia's Bureau for Meteorology, Climatology, and Geophysics (BMKG) and inversions of global positioning system (GPS) data indicate distinct seismic gaps to the south of the island of Java including in the southern part of West Java. These gaps might be linked to future megathrust earthquake sources in the region. This implies that it is imperative to assess the preparedness of the health facilities such as hospitals in West Java Province, Indonesia that is susceptible to earthquakes and probable tsunamis.

Disaster Impacts to Hospital Preparedness and Risk Communication

In Indonesia, the 2004 Indian Ocean Tsunami badly impacted 61 percent of Aceh's hospitals, causing their ability to function to come to a standstill in the crisis circumstances. (United Nations, 2009). The adverse effect of disasters on the health sector produces secondary disasters because of damage to health facilities, particularly hospitals. The post-disaster consequences for hospitals vary depending on various aspects, including the kind of disaster, the susceptibility and capacity of the health system, and risk-related situations. In a recent 2022 earthquake in Cianjur region of West Java, it was noted by the local disaster management agency (BPBD Kabupaten Cianjur) that there were 2,043 injured victims and 61,908 people were displaced, while 56,320 houses were damaged with material losses, with details of 22,241 houses being heavily damaged, 11,641 houses being moderately damaged and 22,090 houses being lightly damaged. Other public facilities were also affected, including 31 schools, 124 places of worship, three health facilities, and thirteen office buildings (BNPB, 2022).

According to United Nations (2009), hospital failure to cope with disaster has enormous societal consequences, such as the effect on public morale caused by the deaths of the sick, elderly, and children in hospitals during disasters, as well as the failure of emergency services when they are most needed. In addition, PAHO/WHO (2003) identifies further socioeconomic implications on the health sector, such as the expense of treating victims, sanitation, and epidemiological

interventions, as well as other repercussions on the provision of health care following a disaster, can as well together create societal concerns and spark political discontent. Furthermore, in terms of delivering medical services, ADPC (2009) argues that the coordination system led by hospitals is critical to providing effective medical care in a catastrophe event. When multiple agencies deal with medical emergency patients, a lack of coordination combined with conflict among agencies frequently results in enormous time loss, waste of resources, duplication, and uncoordinated and inappropriate response, which is the root cause of inefficiency and further deteriorates the coordination level between partners. Lastly, the complexity and occupancy of hospitals have put them in the spotlight for disaster preparedness.

PAHO (2000) states that hospitals are vulnerable to natural disasters due to their complexity and high occupancy. For example, important supplies such as medication, splints, bandages, and so on, as well as necessities like electricity, water, medical gases, oxygen, and so on, are critical and in danger during disaster occurrences. As a result of significant earthquakes, spilled chemicals and broken gas cylinders might cause fires as reported in affected hospitals of the 2005 Kobe Earthquake in Japan. Thus, during a disaster, healthcare facilities should be occupied 24 hours a day, seven days a week by medical and support personnel, patients, visitors, and patients who require an uninterrupted vital power supply for life-sustaining equipment (PAHO 2000). External sectors also have an impact on hospital operations. For example, roads and bridges damaged by an earthquake might impede Emergency Medical Services (EMS) in impacted areas if hospitals can only be reached by land transportation. Other sectors' functionality is critical for hospitals to remain operating amid calamities.

In conjunction with the disaster impacts on health facilities, several research and global efforts have recently addressed the risk of catastrophe for hospitals. Research conducted by Bissell et al (2004) on the usefulness of healthcare preparedness in disaster response illustrated data on fatalities and survival rates to emergency preparation levels in two earthquakes in California, one in Armenia, and one in Kobe, Japan. The earthquakes in California killed fewer people than the earthquakes in Kobe and Armenia. Mulyasari et al (2013) as has been mentioned earlier, had as well investigated hospital preparedness in Tohoku and Nankai regions, in Japan. It came out that only one out of 4 dimensions of preparedness were fulfilled, while the other 3 dimensions need improvement.

Several initiatives have been launched around the world to improve health sector preparedness for disasters, including the Hyogo Framework for Action 2005-2015 (UNISDR 2005), the 2008-2009 World Disaster Reduction Campaign (United Nations 2009), and the Asian Disaster Preparedness Center's document Safe Hospital: The Key to Deliver Effective Emergency Medical Services (ADPC 2009). Despite these attempts, the United Nations (2009) stated that healthcare facilities, ranging from major sophisticated hospitals to rural clinics, are nevertheless located in disaster-prone areas in several regions of the world. In Japan, the GEJET had a tremendous impact on hospitals and social welfare programs. Around 80% of hospitals in Fukushima, Miyagi, and Iwate Prefectures were destroyed or badly damaged (World Bank 2012) and that is also including the devastated major hospitals in West Java regions in Indonesia due to 2022 Cianjur Earthquake.

The above examples highlight the points that health facilities being of critical infrastructures, such as hospitals, need to be prepared and withstand disasters to be able to provide medical services for survivors and it is a great momentum where risk communication plays a great role. The relationship between hospital preparedness and risk communication is critical for efficient disaster response and management. Effective risk communication is inextricably linked to hospital earthquake preparedness. It entails distributing information, educating stakeholders, coordinating response activities, and encouraging community involvement to establish a complete and coordinated strategy for earthquake preparedness and response in healthcare settings.

Disaster Preparedness of Health Facilities as Critical Infrastructure

A unique definition of a safe hospital for disasters was stated by PAHO/WHO (2012), a "safe hospital" is a facility whose services remain accessible and functioning at maximum capacity and within the same infrastructure immediately following a natural disaster. Followingly, as stated by Mulyasari et al (2013), an adequately equipped hospital (safe hospital) should not collapse in disasters, endangering patients, and personnel; but should continue to function and offer services as a crucial community resource when it is most needed. A hospital should have contingency plans and an operating network in place. Their study explored the four pillars of hospital preparedness in Japan based on the Hospital Safety Index (HSI) approach based on PAHO/WHO (2008) and the evaluation of vulnerability aspects at hospitals to guarantee that hospitals satisfy these requirements and are prepared for disasters. These vulnerabilities, referring to PAHO and WHO, are hospital components that are illustrated as vulnerable to possible dangers such as earthquakes (PAHO/WHO 1996, 2003; WHO 2007). Mulyasari et al (2013) have summarized these hospital's vulnerabilities when disasters strike and classified them in each account preparedness. These are the following:

Firstly, buildings' susceptibility includes design, material resilience, and physical vulnerability, which determine the capacity of hospitals to endure unfavorable natural disasters. The breakdown or collapse of a small structural or architectural feature causes both financial and human damage (Structural and Non-Structural Preparedness). To be able to serve patients, health institutions must operate 24 hours a day, seven days a week at around 50% of their service capacity. Any catastrophe will increase the number of possible patients, raising their risk level; and because it will be unable to handle both normal treatment and the demand produced by emergency circumstances, waiting lists for patients in need of regular care will become longer. Patients are also vulnerable to a decrease in service supply because of damaged and/or partially evacuated or nonoperational facilities (Functional Preparedness). In terms of hospital beds, in the days following a catastrophe, the supply of hospital beds will commonly decrease as demand rises owing to the injured's emergencies (Functional Preparedness). Medical and support personnel casualties can result in significant losses for the country impacted by a disaster, adding to the total economic burden. Outsourcing must be used temporarily to avoid collateral loss in response capability (Functional Preparedness). Damage to non-structural materials (such as equipment, furnishings, architectural aspects, and medical supplies) can often be severe and exceed the cost of structural parts. Even if the damages are minor, they might be severe enough to cause hospitals to close their doors (Functional Preparedness). Furthermore, the basic lifelines and services of which hospitals rely on lifelines and other basic services such as electricity, water and sanitation, communications, and waste management and disposal to function. Not all healthcare institutions have backup emergency services; when one of these services is disrupted, the functioning of the entire facility suffers (Functional Preparedness).

Lastly, in terms of human resources (Human Resources Preparedness), Rebmann et al (2009) mentioned that in addition to their physical limitations, hospitals have restrictions on the number of human resources (experts) they may employ to manage an unexpected spike in the number of persons who could want the service at that moment concerning disasters. Thus, the four pillars of hospital disaster preparedness; namely (i) structural preparedness, (ii) non-structural preparedness, (iii) functional preparedness, and (iv) human resources preparedness are divided into six parameters and 24 indicators. These hospital preparedness parameters and indicators were thus developed and used by Mulyasari et al (2013) when they researched hospitals in Sendai and Nankai regions post-2011 GEJET. Currently, it is utilized to assess the hospitals' preparedness for earthquakes in West Java regions and is illustrated in Table 1.

Table 1. Hospital preparedness parameters and indicators

Hospital Preparedness	Vulnerability Elements	Parameter	Indicator
Structural Preparedness *(The ability of the buildings' structure to withstand hazard events: the location of the building, materials, design)*	Buildings	Building	1. Earthquake-resistant and fire-resistant building construction. 2. Inspection of the performance of building structures against seismic damage to determine the type and level of damage and to determine whether it is appropriate to repair/strengthen the building structure. 3. Inspection of natural hazard locations 4. Examination of geological conditions 5. Availability of space for emergency evacuation
Non-structural Preparedness *(The ability of the buildings' non-structural elements to withstand hazard events (equipment, partition, walls, ceilings, windowpanes, and so on)*	Equipment and Facilities	Management of potentially dangerous drugs/chemicals/substances	1. Medicines/chemicals/potential hazardous 2. substance management 3. Material Safety Data Sheets (MSDS) standards
Functional Preparedness *(The ability of the hospital to operate properly: accessibility, hospital beds, necessary supplies available on-site, basic lifeline service, safety measures)*	Patients Hospital Beds Basic Lifeline and Service Equipment and Facilities	Supplies of Hospital Facilities during Emergency Response situations	1. Medical equipment for emergency medical services 2. Stockpiling on medicines for emergency services 3. Tent for emergency medical services 4. Generator Set for electricity reserve supplies 5. Reserve Clean Drinking Water Supply 6. Reserve food supplies 7. Emergency Bed (Folding Bed) 8. Availability of Triage Tags
		Communication	1. Emergency medical information system

Hospital Preparedness	Vulnerability Elements	Parameter	Indicator
			2. Other communication tools/devices for emergency
		Transportation	1. Available space for Helipad (non-land transportation route) 2. There is easy access to the hospital and exit 3. Medical Rapid Response Team available
Human Resources *(The existence and the ability of medical staff, such as doctors, nurses, and laboratory technicians to prepare for hazardous events)*	Medical and Support Staff	Disaster Preparedness of Medical and Support Staff	1. Availability/implementation of education/training for emergency medical services 2. Implementation of disaster risk reduction training for hospital staff/workers, patients, and visitors 3. Availability of a Medical Rapid Response Team Framework that functions when an emergency occurs, such as during a disaster

Source: Mulyasari et al (2013)

2. METHODS

The research of hospital preparedness for earthquakes in West Java Province is advancing quantitative descriptive methods to assess rapidly the disaster preparedness of hospitals. A questionnaire survey was developed based on the four-pillar hospital disaster preparedness as illustrated earlier, adopted from Mulyasari et al (2013) that is based on Hospital Safety Index adjusted from PAHO/WHO (2008), to collect data from selected hospitals in West Java region that are susceptible to earthquake risk (West Bandung Regency, Cianjur Regency, Tasikmalaya Regency, Sukabumi Regency, Garut Regency, Ciamis Regency, and Pangandaran Regeny). The types of hospitals that were selected for rapid disaster preparedness are Type B and C. According to the definition of the Regulation of the Ministry of Health of Republic Indonesia No. 340/MENKES/PER/III/2010 about The Classification of Hospital (Ministry of Health, 2010); hospitals type B and C both have organizational management, service standards, Standard Operating Procedures (SOP), Hospital Management Information Systems *(Sistem Informasi Manajemen Rumah Sakit/SIMRS),* hospital by-laws and Medical Staff by-laws. Both types operate 24 hours by 7 days with emergency services and are equipped with medical specialists and facilities as well as providing 100 to 200 sick beds for patients stationed in hospitals. Foremost, both types of hospitals own non-clinical support services consisting of Laundry/Linen services, Catering Services/Kitchen, Facilities for Engineering and Maintenance, Waste Management, Warehouse, Ambulance, Communication, Burial of bodies, Firefighting, Medical gas management,

and Clean Water Storage. Concerning the above criteria, these types of hospital are therefore providing room for improvement in their disaster preparedness and risk management and communication.

Table 2. Hospital preparedness parameters and indicators

No.	High Earthquake Risk Region	Total Number of Existing Hospitals Type B/C
1	Sukabumi Regency	7
2	West Bandung Regency	6
3	Cianjur Regency	5
4	Garut Regency	5
5	Tasikmalaya Regency	2
6	Ciamis Regency	4
7	Pangandaran Regency	1
Total Number of existing Hospitals Type B/C		30

3. RESULTS AND DISCUSSIONS

Results

All 30 hospitals were surveyed and 23 hospitals out of 30 have responded from the seven earthquake prone areas. Results of this rapid assessment of hospital preparedness to earthquake based on the survey that comprised the four pillars of the preparedness with its six parameters and 23 indicators has shown anonymously in all the regions prepared: unless to Structural and Human Resources Preparedness. In terms of Buildings, more than 70% of hospitals in West Java have carried out regular inspections to determine the suitability of building structures that should not easily collapse; however, more than 65% of hospitals in West Java have not carried out an earthquake risk assessment study and a feasibility study to investigate the condition of the structure and ground foundation before these hospitals are being built (Figure 1). This is a foremost important basic step of an effort for hospital's preparedness to earthquake, before any collateral other hospital's parameters are being prepared to withstand earthquakes.

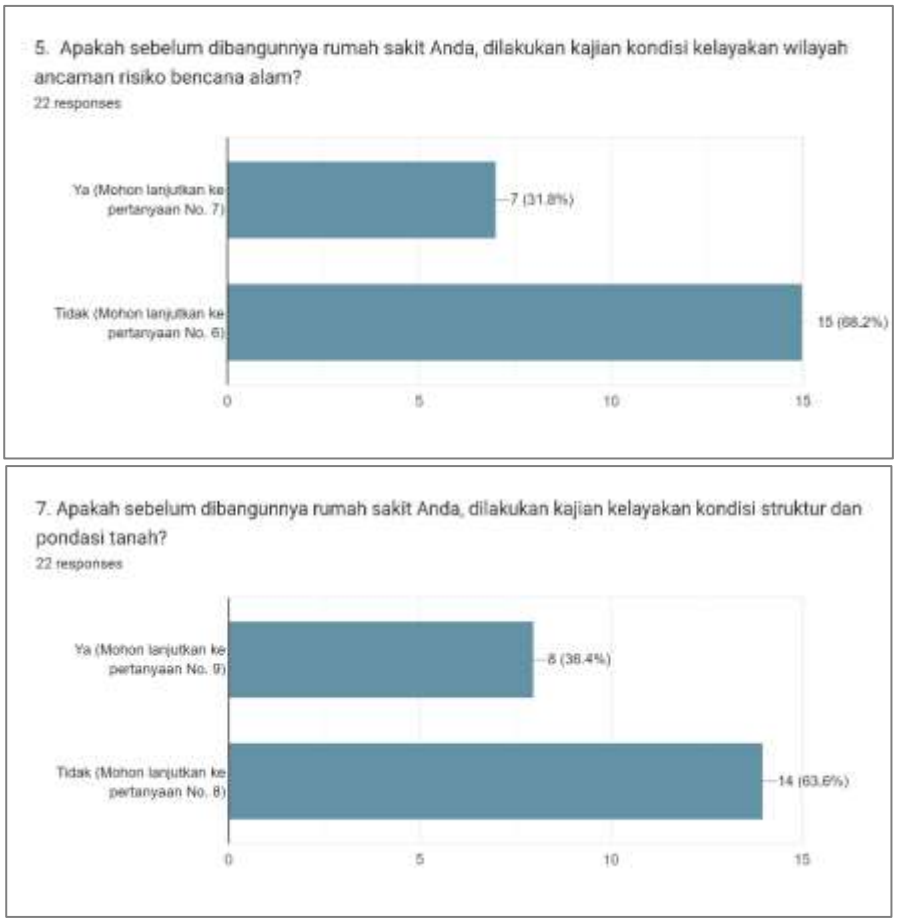
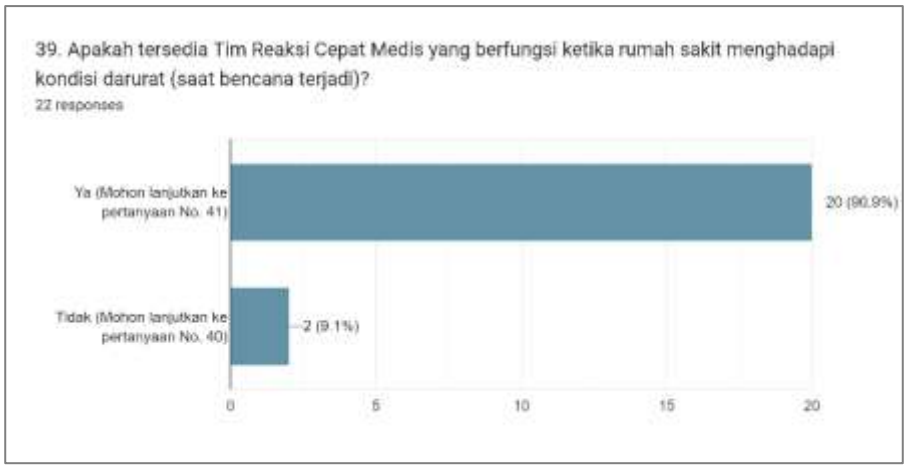


Figure 1. Structural Preparedness, in terms of earthquake resistant hospital buildings

In terms of disaster preparedness of medical and support staffs, almost 90% of the surveyed hospitals have a Medical Rapid Response Team those functions when the hospital faces an emergency, such as when a disaster occurs, holds training for medical services in dealing with emergency conditions and holds disaster risk reduction training for staff/workers hospitals and patients and hospital visitors in dealing with emergency conditions. But all these have not been operationalised regularly, except twice or at least once a year (Figure 2). This is an absolute a minimum amount of capacity building that underlines the weak earthquake disaster risk reduction and mitigation and implies to inadequate hospital emergency response plans and their risk communication framework that will be discussed specifically in the discussion section.



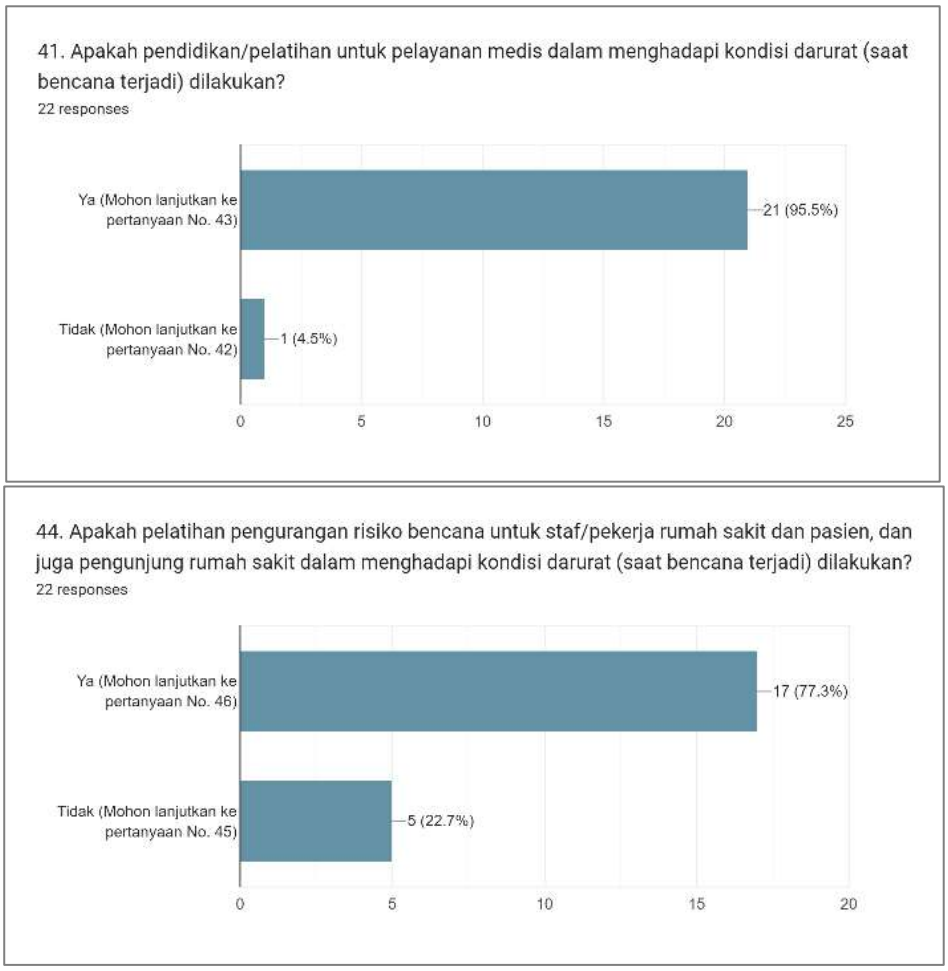


Figure 2. Human Resources Preparedness, in terms of disaster preparedness of medical and support staffs

Discussion

Pinpointing the rapid assessment of hospital preparedness to earthquakes in the case of health facilities in West Java Province has the implications for disaster risk communication framework that tailored to capacities of each hospital. These encompasses such as follow:

In terms of emergency response planning, hospitals must have extensive emergency response plans in place that are specially designed to deal with the effects of earthquakes. Risk communication is critical for ensuring that all staff members understand their roles and duties during an earthquake and are properly educated to respond. In terms of public awareness and education, risk communication is informing the public about earthquake hazards in a specific area and providing advice on what to do before, during, and after an earthquake. Hospitals play an important role in distributing this information to the community in order to improve overall readiness. In terms of hospital staff training, training hospital staffs in earthquake response techniques requires effective risk communication. This involves hospital communication strategy, collaboration with outside organizations, and clear directions for managing patient care and safety during earthquake occurrences. In terms of early warning system, risk communication is critical for disseminating earthquake warnings and alarms. To be able to undertake preparedness procedures and protect the safety of patients, staff, and infrastructure; hospitals must receive quick and accurate information regarding seismic (earthquake) activities. Furthermore, the link between hospital disaster preparedness and risk communication lies in terms of coordination

with emergencies. Coordination between hospitals and emergency services is strongly supported by risk communication. Effective communication ensures that hospitals have knowledge of available resources, that they may request assistance when necessary, and that they can work seamlessly with other healthcare institutions and emergency services. In terms of community engagement and partnerships, hospitals frequently participate in community awareness campaigns and develop relationships with local authorities, public health agencies, and emergency management groups to engage in risk communication. This partnership improves the community's overall resilience to earthquakes. In terms of crisis communication plans, hospitals should have solid crisis communication protocols in place that meet a variety of events, including earthquakes. These plans detail communication strategies for internal and external stakeholders, media engagements, and the delivery of essential information during and after an earthquake. As part of their preparedness measures, hospitals invest in earthquake-resistant infrastructure. Communicating the hospital's physical structure's safety features and resilience is an important component of risk communication to create trust in both the hospital's personnel and the community for infrastructure resilience. There is also a relationship between hospital disaster preparedness and risk communication in terms of patient and hospital visitor communication. During earthquakes, hospitals must efficiently communicate with patients and visitors. This includes explicit instructions on evacuation protocols, safety precautions, and preparedness, as well as any potential effects on ongoing medical treatments. And after a disaster, post-event communication and recovery play a significant influence. Risk communication extends to the post-event phase, during which hospitals convey recovery activities, available services, and any potential health hazards linked with earthquake aftermath. The above illustrates the important link and implications of hospital disaster preparedness and risk communication.

4. CONCLUSION

This paper has discussed hospital preparedness and its implications for disaster risk communication, mirroring the rapid assessment of preparedness of hospitals in high earthquake disaster risk regions of West Java Province. In the event of an earthquake disaster, hospital staff must act quickly and effectively to satisfy the requirements of the impacted people. Hospitals must create, implement, and maintain an efficient emergency medical response strategy constantly that includes risk communication. For the first couple of days after an earthquake, communities and affected areas cannot rely on outside sources of urgent medical attention or humanitarian relief to address their medical requirements. Therefore, as critical health facilities, hospitals are the beacon in the "dark time" that shall guide people for health and safety. Furthermore, knowing the definition of an earthquake, its aftereffects, and the standard worldwide terminology used, is crucial for medical and paramedical teams reacting to earthquakes and treating casualties appropriately. Therefore, the four pillars of hospital preparedness and risk communication are paramount and undeniable for critical health facilities that are located in high earthquake-risk regions.

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