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Earthquake Disaster Management Preparedness Analysis at Anutapura Regional Hospital, Palu City

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ABSTRACT

The problem found at Anutapura Regional Hospital is that earthquake disaster preparedness is not yet effective due to the hospital's occupational health and safety organizational structure not being updated since 2020 and lack of special training for the team to deal with earthquake disasters. This qualitative case study aims to analyze the organization, mobilization and activation of human resources in earthquake disaster preparedness at Anutapura Regional Hospital, Palu City. In-depth interviews and observations were conducted with key informants, including the hospital director, emergency/disaster preparedness coordinator, and secretary of the occupational health and safety team. The results showed that the organizational structure has been updated in 2023 with defined roles and responsibilities, but monitoring and evaluation mechanisms need improvement to ensure teamwork efficiency and effectiveness. The hospital is constrained in training the team, with no special training available for earthquake disasters, although some internal training has been conducted. Personnel selection is based on competencies aligned with emergency response tasks, focusing on managerial expertise and emergency certification. However, the team is not yet independent with members from various units, resulting in suboptimal implementation. The placement process follows general procedures without special assignments for emergencies, and performance evaluations are not conducted regularly. Anutapura Regional Hospital should implement a special training program that includes earthquake disaster management strategies to enhance preparedness.

INTRODUCTION

Based on data from the Center for Research on the Epidemiology of Disasters in 2022, there were 387 natural disasters recorded worldwide, slightly exceeding the average of 370 events from 2002 to 2021. All types of disasters also almost reached the average level in the last two decades. In 2022, the death toll reached 30,704, three times higher than the previous year, but still below the average death toll from 2002-2021 of 60,995, influenced by several major disasters such as the Haiti

earthquake in 2010 which caused 222,570 deaths. In comparison, the death toll in 2022 was almost double the average from 2002-2021, which reached 16,011 deaths. 2022 also recorded three significant earthquakes, including earthquakes in Afghanistan and Indonesia, two of the ten deadliest disasters. In addition, the Fukushima earthquake also caused economic damage of US$8.8 billion, making it the fourth largest economic impact event.[1]

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), various events have occurred throughout 2019, including natural disasters. Starting from floods, volcanic eruptions, storms, tornadoes, landslides to earthquakes. Even so terrible, the natural disasters claimed many lives. According to UNESCO data in 2019, an 8.2 SR earthquake struck about 280 kilometers southeast of Kodiak Island, Alaska. A powerful earthquake struck southwestern Mexico. The tremors caused buildings in the Mexican capital, Mexico City, to shake. Then the epicenter of the 7.2-magnitude earthquake was near the city of Pinotepa de Don Luis, in the state of Oaxaca, said the US Geological Survey as reported by the BBC. The epicenter of the earthquake was 24.6 km underground.[2]

Indonesia is a country that has a high level of vulnerability to disasters, when viewed from a geographical, climatological and demographic perspective. Indonesia's geographical location between two continents and two oceans actually provides good economic potential, but at the same time increases vulnerability to disasters. Several factors that cause disasters in Indonesia include geographical, climatic, and geological conditions, which make Indonesia prone to earthquakes, tsunamis, volcanic eruptions, landslides, flash floods, droughts, extreme weather and abrasion which can also trigger forest fires. With these conditions in Indonesia, the 2021 World Risk Index places Indonesia in 38th position out of 181 countries most vulnerable to disasters in the world.[3]

According to the United Nations-International Strategy for Disaster Reduction (UN-ISDR) in 2018, Indonesia is the third most vulnerable country to earthquakes in the world. According to the National Disaster Management Agency in 2018, in the last 15 years (2004-2018) in Indonesia there have been 240 large-scale earthquakes and 7 earthquakes with a magnitude of 6.5 Mw rocked Pidie Jaya Regency, Aceh. On September 28, 2018 in Palu Donggala, Central Sulawesi which affected more than 4 million people's lives. On June 3, 2021 an earthquake rocked 4 regions in Indonesia, namely in Sabang City, Aceh with a magnitude of 5.2 Mw, in Ternate, North Maluku with a magnitude of 6.1 Mw, and South Manokwari City with a magnitude of 4.6 Mw. This condition is caused by the existence of Indonesia tectonically as a meeting place for three of the world's tectonic plates (Eurasia, Indo-Australia and the Pacific), volcanically as an active volcanic path known as the Pacific ring of fire.[4]

The history of disasters in Indonesia shows an increasing number of disaster events and victims that are increasingly high and complex. This indicates the need for a disaster preparedness system. Disaster management is a series of efforts to reduce disaster risks, including reducing the risk of disasters, disaster prevention activities, emergency response, and rehabilitation.[5]

A natural disaster is a dangerous event that can occur in all locations on the earth's surface and threatens or disrupts people's lives and livelihoods caused by natural factors or non-natural factors or human factors resulting in human casualties, environmental damage, property losses, and psychological impacts. Natural disasters have various variations and can occur suddenly, one of which is an earthquake.[6]

An earthquake is a natural event in which there are vibrations on the ground surface due to the movement of the earth's plates, volcanic activity, or building collapse. Earthquakes can occur suddenly and without regard to time, occur at any time of the year, and cause sudden adverse impacts and provide little warning of the danger that will occur.[7]

According to the Indonesian Disaster Risk Index (IRBI) from the National Disaster Management Agency (BNPB), Central Sulawesi has an IRBI score of 146.07 (2021) or a province with a high disaster risk class. Meanwhile, at the district and city levels that have a high risk class are: Palu City, IRBI 168.25; Donggala Regency 166.75; Morawali Regency 174.82; North Morowali Regency 174.82;

Bangkep Regency 163.20; Banggai Laut Regency 163.20; Toli-Toli Regency 159.20; Buol Regency 149.60.[8]

Palu and the Central Sulawesi region are areas that often experience tectonic earthquakes because they are located on the Palu-Koro Fault line. The Palu-Koro Fault is an active fault that stretches from northwest to southeast, crossing the Central Sulawesi region. Seismic activity in this area is caused by the interaction between the Indonesian Plate-Australia and the Eurasian Plate that runs along the Palu-Koro fault. In addition, this area is also crossed by the Matano fault which is located in South Sulawesi and close to Lake Matano. The Matano fault is also an active fault and is the boundary between the Indonesia-Australia Plate and the Sunda Plate. The area around the Matano Fault has a significant history of earthquakes. This geographical condition causes Central Sulawesi Province to often experience earthquakes that can cause damage and trigger tsunamis, and can even cause soil liquefaction due to strong earthquake shocks.[9]

Based on data from the Central Sulawesi Health Service, the 7.4 SR earthquake, tsunami and liquefaction on September 28, 2018, especially in 4 affected regencies/cities, namely Palu City, Donggala Regency, Sigi Regency and Parigi Moutong Regency, claimed 2,685 lives, mass burial (tsunami/liquefaction) of 1,016 people and missing 710 people and more than 4,438 people were injured. The displaced population reached 172,635 people spread across 122 evacuation points in Palu City, Sigi Regency, Donggala Regency and Parigi Moutong Regency. Based on BNPB records, material losses experienced from the earthquake, tsunami and liquefaction disaster reached IDR 18.48 trillion. The impact of the earthquake was also seen significantly in various hospitals in Palu and its surroundings, both in terms of structure and functional services. Of the total 7 hospitals affected by the earthquake, 5 hospitals suffered moderate damage, and 2 hospitals suffered severe damage. One of the hospitals that suffered severe damage was the Anutapura Regional Hospital, whose 5-story AMC (Anutapura medical center) building, the building structure broke and collapsed, causing fatalities.

Anutapura Hospital is one of the important health facilities in Palu City and its surroundings because it provides crucial medical services. This hospital is often referred to by people from the surrounding areas because it is the closest hospital to the local community. As a result of the earthquake and tsunami on September 28, 2018, this hospital was severely damaged, with many parts of the building destroyed or severely damaged, hampering the hospital's ability to provide the health services needed by the community. Therefore, after the disaster, recovery and reconstruction efforts were carried out to help Anutapura Hospital to be able to operate again and serve the community. In this recovery process, the government, non-governmental organizations, and international organizations also played an active role in supporting the recovery of hospitals and other health infrastructure in Palu City. Anutapura Hospital is a symbol of hard work and the spirit of struggle to rebuild Palu City after the disaster. Recovery efforts include physical repairs to the hospital, restoration of medical facilities, and restoration of the availability of adequate medical personnel to provide optimal health services to the community.

Based on the Disaster Preparedness Planning Guidelines by the Indonesian Ministry of Health, it is explained that the main purpose of compiling the Disaster Preparedness Planning Guidelines in the Hospital Disaster Plan is to improve hospital preparedness in dealing with internal and external disasters in the hospital. In order to achieve this goal, the hospital must have a specific goal to prepare a plan that includes: a. organization; b. communication system; c. mobilization and activation of human resources; d. evacuation and transportation system; e. logistics preparation; f. operational work procedures (when the hospital is completely paralyzed, sending teams and when the hospital receives mass casualties).[10]

Research on disaster preparedness in hospitals was also conducted by Simanjuntak et al., (2021) at RSU Al Aziz Rantauprapat using qualitative research with a study design case. The results of the study showed that the implementation of the Hospital Disaster Plan at RSU Elpi Al Aziz Rantauprapat was quite good because this hospital already had a hospital disaster prevention and

response organization which involved several hospital installations. The existing Emergency Operation Plan has followed the minimum service standards of a class B hospital, but the quantity of facilities and infrastructure still needs to be improved because the Specific Operation Plan does not meet the existing standards. Disaster management guidelines at RSU Elpi Al Aziz already exist, but there are still some staff at RS Elpi Al Aziz who do not understand and understand disaster preparedness.[3]

The results of a preliminary study in May 2023 at RSUD Anutapura, Palu City by conducting interviews and observations of the K3 staff of the hospital as part of the disaster preparedness team. The results of the initial interviews that had been conducted showed that disaster preparedness at RSUD Anutapura was still not running effectively because there were two main influencing factors. The first is, the organizational structure of the K3 team at the Anutapura Hospital has not been updated since 2020 due to the change of the Hospital Director, which can have an impact on a less rapid and coordinated response when a disaster occurs. Second, training to improve the K3 preparedness of the Anutapura Hospital is not carried out routinely and was only carried out in 2017, and not special training for earthquake disasters but for fire disasters, this is due to the lack of priority and support from hospital management, which can have an impact on the knowledge of the Preparedness Coordinator in dealing with emergency or disaster conditions.

Based on the background problems above, the researcher is interested in conducting a study entitled Earthquake Disaster Management Preparedness Analysis at Anutapura Regional Hospital Palu City. This study aims to determine the Earthquake Disaster Preparedness at Anutapura Regional Hospital, Palu City. Specifically, the specific objectives of this study are to analyze the organization, mobilization and activation of human resources in earthquake disaster preparedness at Anutapura Regional Hospital, Palu City. The results of this study are expected to be used as reference material for academics and other parties in need to increase and develop public health knowledge, especially in earthquake disaster preparedness at regional hospitals, at local, national and international levels.

METHOD

This study uses a qualitative design with a case study approach, namely in-depth research on individuals, groups, organizations, activity programs, and so on over a certain period of time. The goal is to obtain a complete and in-depth description of a content. This research was conducted at Anutapura Regional Hospital, Palu City, Central Sulawesi. The research period began in August-September 2023. Determination of informants using purposive sampling technique. The characteristics of the determination of informants in this study are those who know about Hospital Occupational Safety and Health (K3 RS), namely the key informant Director at Anutapura Hospital, Palu City. The main informant is the Emergency or Disaster Preparedness Coordinator of Anutapura Hospital, Palu City. The supporting informant is the secretary of the K3 Hospital team. This study uses informant determination with purposive sampling. This primary data was obtained by looking at the results of observations and in-depth interviews. Secondary data is supporting data obtained from various sources. Data processing in this study uses a content analysis approach with matrix techniques. Data or information that has been processed and interpreted will be interpreted in narrative or descriptive form. Qualitative researchers as human instruments, function to determine the focus of research, select informants as data sources, collect data, assess data quality, analyze data, interpret data and draw conclusions about everything. The research instruments that will be used in this study are interview guidelines which are an instrument in the form of a list of questions prepared to obtain information, notes needed to record all information in the field, observation sheets, a voice recorder to record the results of interviews with research subjects, and a camera to document events in the field. To verify the validity of the data obtained, the researcher employed source triangulation and technique triangulation techniques. Source triangulation is testing the credibility of data which is done by checking data that has been obtained through several sources, namely key informants,

main informants, and supporting informants. Technical triangulation is testing the credibility of data by checking data with the same source using different techniques, which have been obtained through in-depth interviews, observation, and documentation.

RESULTS

Organizing

Based on the results of in-depth interviews conducted by researchers with informants regarding the organization of earthquake disaster preparedness at Anutapura Hospital, Palu City, it was found that Anutapura Hospital already has an organizational structure for an occupational health and safety team whose decree has been updated in 2023. This structure covers several levels and involves various professions in the hospital with the aim of preparing earthquake disaster preparedness in accordance with the expertise of each member of the Anutapura Hospital K3 team. As in the following statement:

> *"We already have an organizational structure at Anutapura Hospital for disaster preparedness and it has been updated in 2023, through the decision of the Director of Anutapura Hospital No. 445/13/1-SK-AKSAP/2023. This structure includes determining the roles and responsibilities of each profession, including medical personnel, pharmacists, and others, according to their expertise, yes.., with this update, we hope that Anutapura Hospital can be more effective in dealing with and handling earthquake disasters". (DD).*

> *"At Anutapura Regional Hospital, um.., the organizational structure is there and yesterday the structure was also updated, um.. and related to disaster preparedness, it includes several levels and several professions in it. Starting from the director, then there is the chairman, vice chairman, and secretary. From the secretary, we are directly connected to the disaster management section. In this disaster management section, it consists of um.. from several team members, yes.. who are responsible for handling disaster situations". (MB).*

> *"We have anticipated and each profession already exists, the organizational structure already exists and is ready according to their expertise, yes.., from medical personnel, pharmaceutical personnel, yes.. are ready with this, who evacuates who, this um.. so in the decree it is already available. Thus, each member of the K3 team at Anutapura Regional Hospital has a role and responsibility that has been determined based on the decree that has been made". (YM).*

Further interviews were conducted with informants regarding the duties and functions of the K3 team at Anutapura Hospital, and it was found that K3 at Anutapura Hospital is responsible for identifying emergency risks, analyzing disaster vulnerabilities, and mapping emergency conditions, including spaces that are considered urgent. In addition, in disaster management, the duties and functions of K3 at Anutapura Hospital include managing medical equipment and maintaining safety equipment, preparing evacuation procedures, and coordinating with external parties to optimize disaster management according to safety protocols. As in the following statement:

> *"The main duties and functions are um... identifying emergency risks, such as the potential for earthquakes and their impact on hospitals. Furthermore, um... the K3 team conducts an analysis of disaster vulnerabilities, including mapping emergency conditions um... such as mapping spaces that are considered urgent". (DD).*

> *"Um... the main duties and functions of K3 Hospital, um... K3 Hospital here has the responsibility to ensure the availability of adequate medical equipment and supplies during and after a disaster, not just an earthquake, but also a disaster as a whole. So we also have to design how the patient management strategy is, emm... including the arrangement of emergency beds and medical care that will be needed later, and emm... the K3 team also has the function to coordinate critical medical tasks during an emergency". (MB).*

"The duties and functions of the units involved in disaster management at this hospital are eem... they are responsible for the availability of adequate medical equipment and maintenance of safety equipment if during or after a disaster occurs, emm... the K3 unit of this hospital also prepares effective evacuation procedures to reduce risks when a disaster occurs. And not only that, they also play an active role in coordinating with external parties, emm... such as government agencies and volunteers, to ensure that ee... disaster management runs optimally in accordance with ee... with the established safety protocols.". (YM).

Regarding the command structure in earthquake disaster management at Anutapura Hospital. The main informant said that the Hospital Anutapura does not yet have a special command structure for earthquake disaster management and there is only an overall disaster command structure that has been established in the K3 unit. As in the following statement:

"Emm, for the special command structure for earthquake disaster management itself, there is none yet. There is only an overall disaster command structure that has been established in the K3 unit of the Anutapura hospital". (DD).

Meanwhile, to ensure the smooth implementation of tasks and functions within each unit or department in organizing earthquake disaster management, proper control of dangerous risk factors in the hospital has been implementedented. Anutapura Hospital has also appointed officers responsible for maintaining the security of its conditions, ensuring that the tasks and functions of the earthquake disaster management unit can run smoothly. As in the following statement:

"We guarantee the smooth implementation of the task, yes, we ee... must control which ones pose dangerous risks, eem... and we also have officers, we continue to do this, yes... so that the conditions in this hospital are safe, for example, from electricity if there is a short circuit, we fix it so that there is no risk of fire, water is also like that, sometimes our machines die because maybe the electricity is unstable and causes the dap machine to die, then we also pay attention to the water supply in the storage room, we also control everything". (DD).

Related to the monitoring and evaluation mechanisms used to ensure work efficiency and effectiveness. The main informant said that monitoring and evaluation at the Anutapura Regional Hospital had not been maximized because there was still a lack of resource allocation for training and development of specific skills related to earthquake disaster management. As in the following statement:

"For monitoring and evaluation, we have not maximized the evaluation, because we still lack human resources for training with development of eem.. expertise related to earthquake disaster management deck". (DD).

Based on the researcher's observations, it is evident that the organizational structure of Anutapura Regional Hospital related to disaster preparedness already exists and was updated in 2023, as evidenced by the documentation carried out by the researcher. This structure involves various levels and professions aencompasses various levels and professions at the Regional Hospital, with roles and responsibilities determined individual. Although the Anutapura Regional Hospital does not yet have a special command structure for earthquake disaster management, they still ensure the smooth implementation of the tasks and functions of each unit or department by controlling risk factors and maintaining hospital security. However, the monitoring and evaluation mechanism at the Anutapura Regional Hospital to ensure the efficiency and effectiveness of teamwork is still not optimal due to the lack of resource allocation for training and development of specific expertise related to earthquake disaster management.

Mobilization and Activation of Human Resources

The results of in-depth interviews conducted by researchers with informants about the mobilization and activation of human resources in earthquake disaster preparedness at the Anutapura Regional Hospital in Palu City found that the selection of personnel for the disaster response team at the Anutapura Regional Hospital was based on competencies that were in accordance with emergency tasks that focused mainly on managerial expertise and the requirements included emergency certification. The selection of emergency team personnel at the Anutapura Regional Hospital did not only depend on their basic profession, but also on the special skills needed in emergency situations, including having an emergency certificate. However, the Anutapura Regional Hospital still constrained in the process of training the K3 hospital team, where there is no special training to deal with earthquake disasters. As in the following statement:

"For the personnel selection process, we choose according to their competence, so we choose personnel, um... by paying attention to qualifications and expertise that are in accordance with their emergency response duties, for example, in an emergency situation such as an earthquake, um... team members must have adequate management skills, so um... one of the main criteria in selecting personnel in the Anutapura Hospital response team is um... adequate managerial skills". (DD).

"In selecting members of the earthquake disaster response team at Anutapura Hospital, um... we prioritize people who are experts in their fields. For example, when an earthquake occurs, we need people who know how to manage the situation well. So, we choose people who are not only smart in the medical field, but also good at managing things in general". (MB).

"One of the requirements for selecting personnel is to look at their basic profession, emm... or indeed those who are experts in that field. To be selected as part of the team, emm... they must also have a certificate on emergencies that are relevant to emergency response tasks. So the selection of personnel in this hospital is not only based on general abilities, but also on the special abilities needed, eem... in emergency situations such as earthquakes." (YM).

The placement of personnel in earthquake disaster management at Anutapura Hospital has not been assigned specifically for earthquake disaster management and the placement of personnel is currently still following general procedures without special assignments for emergency situations such as earthquakes. Such as the following statement:

"For the placement of disaster management personnel, emm... there have been no special assignments or for certain posts. For now, the placement of personnel, emm... is still following the general process, and there have been no special assignments for emergency situations such as earthquakes." (DD).

"Personnel placement, huh? Hmm... personnel placement in earthquake disaster management at this hospital still follows the general process and does not involve special assignments like your question earlier" (MB).

Regarding the work assignment system applied to each position or appropriate personnel, Anutapura Regional Hospital already has a work assignment system regulated by a decree to ensure that each position is filled by appropriate personnel during an emergency. Members in the decree will be involved during an emergency, and if additional personnel are needed, coordination with the team leader is carried out to add new members. As in the following statement:

"There are already responsibilities for each team, it is automatically filled in, there is already a decree, so for example, emm... there is an incident, there is a case, that means that in the decree, emm... they are uh... involved, but if for example the incident requires additional manpower, we also have a coordinator, there is a leader, there is a team leader there, so we

have additional personnel, for example, we need nurses who are only included in the decree, two, maybe more from emm... friends from other nurses. So the point is flexible, it doesn't have to be in the decree, but it is flexible, for example, if there is an obstacle, make a replacement". (YM).

The type of special training that has been provided to the K3 team personnel of the Anutapura Regional Hospital related to earthquake disaster management does not yet exist and they only receive information about earthquake disaster management or other disasters to update their knowledge through independent learning or online socialization. This is because there has been no official training from the relevant agencies. As the following statement:

"For special training, we have only worked with the fire department and BPBD (disaster management agency), but for special training for earthquake disasters, we don't have any yet, only limited training for fires. So for information related to earthquake management or other disasters, we just learn by ourselves, or I usually join online socialization via the zoom application with other members, so we are smart enough to just increase our insight". (DD).

"Umm... for earthquake disaster training, um... frankly, there has been no training, um... we usually only join our own training, not from the agency, um... maybe there is a lack of information so that for information about disaster training, we have not received training, if there is, we will join the training. If there is an implementation, we will join it, if it is programmed, there is only that, to join it, no one has implemented it because. um... this training has not been there for a long time, maybe since 2018 since the earthquake, well after the earthquake we had covid so we couldn't do anything, later this year we can be normalized so we are just temporarily fixing everything". (MB).

In contrast to the main and supporting informants, the key informant has another opinion that Anutapura Regional Hospital has conducted internal training, including disaster management training such as emergency response and evacuation simulations, which are held annually and evaluated internally, as part of the hospital's preparation in facing various types of disasters. In addition, there is socialization through video safety briefings for interns or other meetings, as well as training organized by external parties such as the health office and disaster preparedness team. Such as the following statement:

"Yes, we do have training, uh... internal, one of the trainings is disaster management, one of which is uh... such as emergency management, uh... how to deal with patients if, for example, uh... an emergency case occurs, that is specifically for nursing professionals, BCRS doctors, then we also usually this team has also received uh... training on disaster management, both from the uh... city level that provides training because this is structured, starting from city coordination, province, to the health office. Then uh... not only earthquake disasters, fire disasters, we usually invite you to uh... always conduct fire prevention training, that is one of the disasters included in the Hospital's K3. So for the training is usually uh... K3 is done every year uh... internally re-evaluated, we definitely do it through roll call, this roll call, what else is this, we are talking about standardized accreditation, hospital accreditation covers everything, how to deal with disasters, how to handle emergencies uh... we usually do roll call, always socialize it, for example uh... simulation of handling if a patient is in an emergency, simulation of a disaster. There is usually what is called a safety briefing when there is a student intake, usually there is a safety briefing that is delivered, for example, if there is a disaster, starting from which direction to evacuate to the gathering point, that is usually always if there are student interns or meetings, there must be a safety briefing video first. So people from outside, if they enter the hospital, with the safety briefing simulation video alone, they already know which direction to evacuate to if a disaster occurs. For routine disaster management

specifically, they already have uh... certified training, but for routine disaster management in this way, usually we have from the health service, from the local government, city government, or from the disaster preparedness team who usually provide training, so there are delegates. But after that it is socialized again to friends in the hospital". (YM).

In addition, performance assessments or evaluations of personnel in earthquake disaster management at the Anutapura Regional Hospital are not carried out every time, but periodically to ensure the readiness of personnel in disaster management. Like the following statement:

"Earthquakes don't happen every time, right? Only during earthquakes. As for assessments or evaluations, there are still coordinators, but not every time, later what is assessed or evaluated every time is like whether the programs are running or not, and evaluating it, for example, is there an evacuation route, if there is an um... like an earthquake. But even though our evaluation is not carried out every time, but um... it is still carried out periodically so that um... to ensure that this personnel is ready not to act in accordance with the procedures that have been established in disaster management at this hospital". (DD).

The main challenges faced in the selection of personnel, special training, and placement of personnel in certain posts or tasks in earthquake disaster management at Anutapura Hospital. The results showed that in Anutapura Regional Hospital, there are still obstacles in disaster training and there is still a lack of trained personnel because the K3 team has not been established independently and its members are still taken from several units, so that the implementation of K3 is not optimal. For now, there have been no special steps taken to overcome the challenges, except for the formation of a task force team. As in the following statement:

"We still lack trained personnel here because the K3 team itself has not been established independently. Its members are also still taken from several units so it's like a joint team, it has not been established independently, so yes, the implementation of K3 is not optimal. For the steps or efforts taken, there are none, only that we formed a task force team to overcome it. Emm ... we also try for what it's called emm ... if there is training we will participate, but if there is because currently there is no training. As for the earthquake training, I still can't be sure, because yesterday a friend said there was but I don't know whether it was emm ... special training for earthquake disasters or disasters in general, because the information also didn't reach us emm ... that's why it's still a problem ". (MB).

Based on the results of the researcher's observations, it was found that the selection of personnel for the disaster management team at Anutapura Hospital was based on competencies that were in accordance with emergency response tasks, with a primary focus on managerial expertise and emergency certification requirements. However, Anutapura Hospital is still constrained in the process of training the Hospital's K3 team, where there is no special training to deal with earthquakes and the placement of personnel currently still follows general procedures without special assignments for emergency situations such as earthquakes. Although several internal trainings have been carried out, special training to deal with earthquakes is also not yet available.

DISCUSSION

Organizing

Organizing is a process for determining, grouping, arranging, and forming work relationship patterns of people to achieve organizational goals. In emergency situations, organizing is an important first step in developing a disaster management strategy in a hospital. This includes identifying the roles and responsibilities of each personnel, grouping the emergency response team, determining the command structure, and establishing coordination between units.[11]

Organizing in earthquake disaster preparedness involves defining a clear organizational structure, tasks, and functions. An effective organizational structure usually consists of various levels, from local to national, and involves various government, non-government, and volunteer agencies. At the local level, the organizational structure may consist of the Disaster Management Agency (BPBD) or a similar unit responsible for planning, coordinating, and implementing the response to the earthquake. At the national level, the Ministry or National Disaster Management Agency (BNPB) usually plays an important role in this organization.[12]

At the hospital level, organizing in earthquake disaster preparedness requires an approach that focuses on the role and capacity of each unit. The organizational structure in hospitals in this situation often involves the formation of an Emergency Response Team (TTD) or Disaster Management Unit (UPB). This team is tasked with planning, implementing, and coordinating response to earthquake disasters in or around hospitals.[13]

Organizational structure is a description that includes the type of organization, department, organizational position, type of official authority, field and work relationship, line of command and responsibility, span of control, and organizational leadership system. This organizational structure includes all tasks that are grouped into existing functions, forming a harmonious unity that is directed and continuously developed towards optimal conditions to achieve certain goals.[14]

Organizational structure in disaster preparedness discusses the arrangement and formation of an effective organizational structure in responding to natural disasters such as earthquakes, floods, or storms. The concept of this aspect is important, such as hierarchy and coordination that ensure smooth information flow between various levels and units, clear division of tasks and responsibilities to avoid overlap in disaster management, and flexibility and adaptability of the organizational structure in dealing with changing situations during a disaster.[15]

Organization of Earthquake Disaster Preparedness at Anutapura Hospital, Palu City related to the organizational structure of Anutapura Hospital, the results showed that Anutapura Hospital has a hospital organizational structure that has been updated by decree in 2023. This structure includes several levels and involves various professions in the hospital, with the determination of the roles and responsibilities of each profession according to their expertise. The disaster management unit at Anutapura Hospital, which is called K3 RS, is also responsible for identifying emergency risks, analyzing disaster vulnerability, and emergency condition mapping. With the existence of an organizational structure in the event of a disaster, coordination can run well and in a structured manner.

The results of this study are supported by the Disaster Preparedness Planning Guidelines for Hospitals (P3B-RS) in (2009), which states that every hospital must have an organizational structure for a hospital disaster management team. The disaster management team is formed by the drafting team and appointed by the hospital leadership. The organization works in accordance with the duties and functions that have been determined.[10]

The results of this study are in line with the research conducted by (Simanjuntak et al., 2021) entitled Hospital Preparedness in Disaster Management (Case Study at RSU Elpi Al Aziz Rantauprapat in 2020) which states that RSU Elpi Al Aziz The implementation of its Hospital Disaster Plan is quite good because the hospital already has a hospital disaster prevention and management organization which involves several hospital installations or multi-competencies.[3]

The results of this study are in line with the study conducted by Fajriah et al., (2022) entitled Analysis of Hospital Management Commitment to Preparedness in Facing Disasters at Indramayu Regional Hospital, which states that Indramayu Regional Hospital already has a disaster management organizational structure as evidenced by the fact that in Indramayu Regional Hospital there are documents related to the existence of a disaster management organization, namely the Decree of the Director of Mass Disaster Management (disaster plan), Decree of the Director of the Covid-19 Task Force Team and the Red Code SPO which consists of the health post (internal implementation team) of Indramayu Regency Regional Hospital and the field implementation team. This is also the same as

the statement from Bruno Hersche where the hospital disaster prevention and response organization should represent all the required competencies.[16]

The results of this study are not in line with the study conducted by (Garcia, 2021) entitled Disaster Preparedness Assessment at Lho Guan Lye Penang Hospital, Global Perspective, which states that the organizational structure of the disaster health and safety team may not be well designed to deal with various types of disasters or emergency situations that may occur. One of the main problems is the lack of clear explanations regarding the duties and responsibilities of each team member which can cause confusion and ambiguity when a disaster occurs. In addition, the lack of regular evaluation of the organizational structure is also a concern. Without regular evaluation, the organizational structure may not be able to keep up with the development of new needs and challenges that arise over time. The inability to adapt to change can hinder an effective response to disasters.[17]

The results of this study are not in line with the study conducted by Prasetyo, (2019) which states that an organizational structure for a disaster management team must be formed in the hospital or what is called the Hospital Incident Management Team (TMIRS). However, in this case, even though the Salatiga Regional Hospital has P3B-RS, it turns out that the TMIRS organizational structure has not been formed. This condition shows that although initial steps have been taken with the existence of P3B-RS, there are still significant shortcomings in the hospital's disaster preparation process. Without the existence of the TMIRS organizational structure, optimal coordination in disaster management at the Salatiga Regional Hospital is hampered.[18]

The researcher concluded that the organizational structure of earthquake disaster preparedness at the Anutapura Regional Hospital already exists and has been updated in accordance with the 2023 K3 Hospital Team Decree. This structure involves various levels and professions in the Regional General Hospital, by determining roles and responsibilities that are in accordance with the expertise of each individual.

Tasks and functions in organizing include determining the specific responsibilities given to individuals, groups, or units within an organizational structure, which involves determining what each member or part of the organization must do, how these tasks will be carried out, and how they will work together to achieve the goals set.[19]

Organizing related to disaster management in tasks and functions refers to the roles and responsibilities assigned to individuals, teams, or units in preparing, responding, and reducing the impact of a disaster which includes activities such as risk identification, response planning, coordination with related parties, implementation of evacuation and rescue, emergency health services, resource distribution, rehabilitation, and post-disaster recovery, as well as monitoring and evaluating performance.[20]

Organization of Earthquake Disaster Preparedness at Anutapura Regional Hospital, Palu City related to the organizational structure of Anutapura Regional Hospital, the results showed that Anutapura Regional Hospital does not yet have a special command structure for earthquake disaster management, but only a general disaster command structure because the more general policy does not prioritize earthquake disaster management specifically, but they have guaranteed the smooth implementation of the tasks and functions of each unit or department by carrying out control to risk factors and ensure the safety of conditions in the hospital. However, the monitoring and evaluation mechanism to ensure the efficiency and effectiveness of the work of the K3 Hospital team is still not optimal due to the lack of resource allocation for training and development of specific skills related to earthquake disaster management. The results of this study are supported by the 2009 Disaster Preparedness Planning Guidelines for Hospitals (P3B-RS), which emphasizes the importance of a clear division of tasks and functions in the hospital disaster management team. The division of tasks and functions is not only determined by the hospital leadership but is also formed by a drafting team that has special knowledge and skills in the field of disaster management.[10]

The results of this study are in line with the research conducted by Delima & Putra, (2021) entitled Hospital Disaster Plan in Disaster Preparedness Planning, which obtained the results of the Ibnusina Yarsi Bukittinggi Islamic Hospital already having a clear division of tasks and functions for members of the disaster management team. This is illustrated from the interviews conducted, members of the disaster management team already know their duties and functions according to those stated in the Hospital Disaster Plan of the Ibnusina Yarsi Bukittinggi Islamic Hospital. This shows that the Ibnusina Yarsi Bukittinggi Islamic Hospital has taken effective steps in preparing for disasters by establishing a clear division of tasks and functions for members of the disaster management team.[21]

The results of this study are in line with the research conducted by Wibowo & Sari, (2022) entitled Analysis of the Implementation of the Hospital Disaster Plan in Disaster Preparedness at the Azra Private Hospital Bogor, it was found that Azra Bogor Hospital has successfully implemented the Hospital Disaster Plan well in disaster preparedness planning. Through interviews with members of the disaster management team, the results showed that the division of tasks and functions of team members has been clearly defined in accordance with the hospital's emergency plan document. This confirms that Azra Bogor Private Hospital has taken effective steps in preparing for disasters by establishing an appropriate organizational structure and division of tasks.[22]

The results of this study are not in line with the research conducted by Suryanto & Susanto, (2020) entitled Evaluation of Disaster Preparedness at the Batam City Regional General Hospital, which found that the Batam City Regional General Hospital still experiences obstacles in the division of tasks and functions for members of the disaster management team. Through the survey conducted, it was found that members of the disaster management team at the hospital were still confused regarding their respective duties and responsibilities, as well as a lack of understanding of the disaster emergency plan that had been prepared. This shows that the unclear division of tasks and functions at the Batam City Regional General Hospital can be an obstacle in efforts to prepare for and handle disasters in the future.[23]

The results of this study are not in line with the study conducted by Dami et al., (2020) entitled Hospital Disaster Preparedness in Switzerland. The study found that most hospitals do not have comprehensive disaster planning, including in terms of the division of tasks and functions for members of the disaster management team. In the study, it was found that there was a lack of understanding and adequate training regarding the roles and responsibilities in emergency situations cause confusion and uncertainty in disaster response.[24]

The researcher concluded that the tasks and functions of each K3 RS team unit at Anutapura Regional Hospital have been carried out well, but improvements are needed in the implementation of monitoring and evaluation mechanisms to ensure the efficiency and effectiveness of teamwork in dealing with earthquake disasters in the future.

Mobilization and Activation of Human Resources

Resource mobilization is defined as the process of obtaining resources from resource providers, using different mechanisms to carry out organizational work in order to achieve predetermined organizational goals. This includes all activities and movements carried out to obtain resources. Mobilization and activation of human resources (HR) refers to the process of preparing, organizing, and moving personnel needed to carry out certain tasks that involve selecting appropriate personnel, providing special training, and placing them in positions or tasks that are in accordance with their expertise and skills.[25]

Mobilization and activation of human resources are steps to prepare and organize personnel needed during an emergency. This includes selecting appropriate personnel, special training in disaster management, and placing personnel in certain posts or tasks with the aim that the hospital has a team that is ready and trained to deal with disasters. Mobilization and activation of HR can be a potential in optimizing preparedness. However, on the other hand, resource mobilization can also

be an obstacle if mobilization cannot run properly. Therefore, mobilization and activation of resources are quite important preparedness parameters.[26]

The results of this study are supported by the 2009 Disaster Preparedness Planning Guidelines for Hospitals (P3B-RS), which emphasize the importance of mobilization and activation of human resources (HR) in disaster management in hospitals. The guidelines underline the need to form a disaster management team led by a drafting team and approved by the hospital leadership, the context of which indicators of success in mobilization and activation of HR include the selection of appropriate personnel, special training in disaster management, and placement of personnel in certain posts or tasks.[10]

Mobilization and activation of HR at Anutapura Hospital showed that the selection of personnel for the K3 team at Anutapura Hospital was based on competencies that were in accordance with emergency response tasks, especially managerial expertise and emergency certification. However, there are still obstacles in the training of the K3 hospital team, which is still lacking trained personnel because the K3 team at Anutapura Hospital is not yet independent and its members are still taken from several units, so that the implementation of K3 at Anutapura Hospital is not optimal. Although there has been internal training such as socialization through safety briefing videos that are played at every morning assembly and coordination with related agencies, special training for earthquake disasters at Anutapura Hospital is still not available. Other challenges also include the placement of personnel without special assignments and performance evaluations that are not carried out regularly. The current placement process also only follows general procedures without special assignments for emergency situations, while performance evaluations are not carried out periodically.

The results of this study are in line with the research conducted by Fawzi et al., (2023) entitled Preparedness for Flood Disasters Study Qualitative in the Tanjung Balai City Health Office in 2022, which found that in terms of training for health workers, the Health Office has not facilitated the emergency team to attend disaster-related training facilitated by the Ministry or the North Sumatra Provincial Health Office. This shows that the Health Office has not prioritized training in the context of disaster mitigation. Disaster mitigation is an effort to minimize the impact caused by a disaster, including in terms of training and readiness of emergency teams which include planning and implementing actions to reduce the risks and impacts of a disaster carried out before the disaster occurs, including readiness and long-term risk reduction actions. One important aspect of disaster mitigation in the health sector is the formation of alert villages, but this does not replace the importance of training for health workers in dealing with disasters.

The results of this study are in line with the research conducted by Budi et al. (2020) entitled Personnel Selection Process for Disaster Management Teams, which found that the personnel selection process in several health institutions in Indonesia has been carried out properly. Personnel are selected based on abilities and expertise that are relevant to the disaster management responsibilities they carry out. This emphasizes the importance of matching individual abilities with the emergency response tasks faced, so that it can increase the effectiveness of the response in dealing with disasters.[28]

The results of this study are in line with the research conducted by Aji, (2020) entitled Community Preparedness in Facing Flash Flood Disasters in Welahan District, Jepara Regency, which found that the preparedness of the Welahan Village and Ketileng Singolelo Village communities in the pre-disaster stage was relatively low, even according to the informant (village apparatus) it was very low because there was no disaster monitoring and alert posts resulted in the disaster that occurred in Welahan District getting worse and the absence of disaster training, or disaster socialization and disaster counseling, made the community disoriented when a disaster occurred. At the flood disaster location, no media was found, either posters, disaster-prone maps or pamphlets containing invitations to take action to overcome the disaster. At the disaster stage (emergency response) and post-disaster (reconstruction and rehabilitation) it was classified as moderate.

Preparedness for flood disasters which is still in the low-moderate range needs to be improved so that in the future the community will be more alert and even resilient in dealing with disasters.[29]

The results of this study are not in line with the research conducted by Hardiyanto & Pulungan, (2021) which stated that the people of Padangsidimpuan City had routinely and systematically carried out training through socialization and simulation before the natural disaster occurred. Through this activity, they are not only given practical knowledge about the actions to be taken when a disaster strikes, such as making cheers for the spirit of mutual cooperation and determining evacuation routes, but also awareness is built on the importance of preparedness and the spirit of mutual cooperation in dealing with emergency situations. In addition, Menegen Goti Village is a pilot village for disaster response because in addition to often being given information and socialization by the Padangsidimpuan City BPBD, this village also has a KSB (Disaster Preparedness Group) which aims to help people affected by natural disasters.[30]

The results of this study are not in line with the research conducted by Obando Zegarra et al., (2023) with the research title Earthquake Disaster Management Preparedness in Hospitals. The results showed that although the hospital had introduced an organizational structure for disaster management, the implementation of the plan still faces significant challenges. One of the main obstacles that is often faced is the lack of adequate training for staff in responding to disaster emergencies properly. The lack of training and simulation also makes staff unprepared to face various emergency situations and in addition, the lack of emergency resources and equipment is an obstacle in providing a quick and effective response.[31]

The researcher concluded that although the K3 team of Anutapura Hospital is based on competencies that are relevant to emergency response tasks, there are still a number of obstacles that need to be overcome to improve the readiness and effectiveness of earthquake disaster management at Anutapura Hospital. The main challenge lies in the lack of trained personnel because the K3 team of the hospital is not yet independent and its members are still taken from several units, which results in the implementation of K3 not being optimal. In addition, special training for earthquake disasters is also not yet available, while the process of personnel placement and performance evaluation also still needs to be improved to suit the needs and emergency situations that may occur.

CONCLUSION

The conclusions obtained according to the results and discussion of this study are: 1) The organizational structure, duties, and functions of the Anutapura City Hospital disaster management team have been well structured and have been updated in accordance with the 2023 Hospital K3 Team Decree. However, there is still a need to improve monitoring and evaluation mechanisms to ensure efficiency and effectiveness of work time. 2) The selection of personnel for the Anutapura Hospital K3 team is based on competencies that are in accordance with emergency response tasks. However, there are still obstacles in the training of the Hospital K3 team, such as the lack of access to special training for earthquake disaster management at the Anutapura Hospital.

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