# CHAPTER I

# INTRODUCTION

## 1.1 Background of the Problem

Around the world, natural disasters such as earthquakes, droughts, hurricanes, floods, volcanic activity, extreme temperatures, landslides, and wildfires. Overall, in 2023, there were 398 natural disasters recorded worldwide. The United States experienced 25 natural disasters that year, making it the most disaster-prone country that year. With 17 natural disasters occurring in the same year, India and China are in second place. The type of natural disaster that most often occurs in 2022 is floods [1].

According to the 2023 World Risk Report, Indonesia ranks second out of 193 countries with a disaster risk level of 43.50%. Data from the National Disaster Management Agency shows that from 2020 to May 2024, there were 14,720 disaster events in Indonesia, including floods as many as 3,848 incidents, landslide disasters as many as 3,709 incidents, tidal waves and abrasion as many as 216 incidents, extreme weather disasters as many as 139 incidents, drought disasters as many as 3,413 incidents, forest and land fires as many as 125 incidents, and earthquake disasters as many as 3,114 events [2].

As an institution responsible for disaster management, BNPB has collected and analyzed data on disasters in various regions. Based on data from January 2023 to June 2024, especially in East Java Province, there were 218 disasters, including floods 85 incidents, extreme weather 87 incidents, landslides 11 incidents, forest and land fires 30 incidents, earthquakes 2 incidents, drought 3 [3]incidents.

Ponorogo is one of the districts in East Java province with a topography dominated by hills, this causes this district to have a fairly high potential for natural



[1] Magistia Ramadhani C and Meily L Kurniawidjaja, "Analisis Kesiapsiagaan Salah Satu Rumah Sakit Kota Semarang Berdasarkan Indeks Keselamatan Rumah Sakit" 4 (2024): 15239–53.
[2] Economic Forum and World Economic Forum, *On the Global Risks Report 2024*, *Economic and Political Weekly*, vol. 59, 2024.
[3] BNPB, "Geoportal Data Bencana Indonesia," Badan Nasional Penanggulangan Bencana, 2024, https://gis.bnpb.go.id/.

disasters such as landslides, floods, putting beliung, kebakaran hutan lahan dan drought. BNPB 2021 data shows that landslides are disasters with a high incidence rate, namely 123 cases and floods rank 4th with 39 cases, in addition to that, the BPDB of Ponorogo Regency conducted mapping showing that almost all sub-districts in Ponorogo regency have the potential for natural disasters [4].

Indonesian hospitals have faced a number of disasters in the past three years, disrupting infrastructure and health services. Around 3,532 disaster events were recorded in 2021, In 2022 there were 2,399 disaster events. As of July 2023, there have been 655 disaster events affecting health infrastructure [5]. These results show how important preparedness and careful planning are to increase hospital resilience in the face of natural disaster threats.

When it comes to disaster management, it is crucial to keep in mind the regulations and laws governing how to handle disasters in hospitals. In accordance with Law Number 24 of 2007 concerning Disaster Management, hospitals must have an integrated and operational disaster management plan to protect patients, employees, and facilities. And in the Regulation of the Minister of Health Number 75 of 2014 concerning Hospital Administration, it is also stated that hospitals must have appropriate preparedness and response programs to deal with emergency situations, such as natural disasters. Then in Law No. 4 of 2009 concerning hospitals, article 3 states that hospitals must provide protection for the safety of patients, the community, the hospital environment, and human resources in the hospital. Which then refers to the Minister of Health Regulation No. 66 of 2016 concerning Hospital Occupational Safety and Health (K3RS) explained in Chapter III article 11 that hospital safety standards include preparedness to face emergency conditions or disasters.



[4] Bayu Fikri Hanafi, "Analisis Multi Bahaya Bencana Kabupaten Ponorogo Berbasis Sistem Informasi Geografis," 2022, http://eprints.ums.ac.id/id/eprint/99377.

[5] Intan Fitrah Andini, Bagoes Widjanarko, and Chriswardani Suryawati, "Open Access Analisis Kesiapsiagaan Manajemen Bencana Di Rumah Sakit Indonesia : Systematic Literature Review PENDAHULUAN Bencana Merupakan Rangkaian Peristiwa Atau Kejadian Yang Merusak Penghidupan Masyarakat Seperti Menimbulkan Kerusakan Lingkungan , Ber" 10, no. 4 (2023): 233–45.

We need to remember together that Allah says in Surah Al-Taghabun (64:11), which means *"No calamity befalls a person except with the permission of Allah"* the verse above reminds us that every disaster is part of Allah's destiny, but humans must still try to be ready to face it.

In the rule of ushul fiqh it is explained "*Daf'ul Adhoruroh aulaa min jalbi Al-manfa'a"* in this rule shows that in an emergency situation, efforts to avoid danger (mudharat) must be a priority, which means that all preventive and preparedness measures must be taken to protect patients and staff from risks that may arise due to disasters[6].

The World Health Organization (WHO) created the HSI as a tool used to assess the physical and operational safety of hospitals and their ability to provide effective health services during and after disasters. It is hoped that this assessment will find areas that need to be improved so that hospitals are better prepared to provide the best medical care during disasters [7].

Based on the above background, it is necessary to conduct an assessment to see the readiness of hospitals in dealing with disasters, as a researcher I use the Hospital Safety Index (HSI) to find out the preparedness of hospitals in facing disasters.



[6] Achmad Zainal Arifin, "Merekonstruksi Peran Agama Dalam Proses Mitigasi Bencana," *Talenta Conference Series: Local Wisdom, Social, and Arts (LWSA)* 2, no. 1 (2019): 1–9, https://doi.org/10.32734/lwsa.v2i1.580.

[7] Krisnawati Gulo, "Analisis Kesiapsiagaan Manajemen Kegawatdaruratan Dan Bencana Berdasarkan Hospital Safety Index (HSI) PAHO/WHO Di RS DKT Dr. Soetarto Yogyakarta," *Jurnal Kebijakan Kesehatan Indonesia* 11, no. 4 (2022): 47, https://doi.org/10.22146/jkki.78884.

## 1.2 Problem Formulation

How is Hospital Preparedness to deal with disasters based on the Hospital Safety Index at RSUD dr. Harjono s, Ponorogo?

## 1.3 Research Objectives

1. General Purpose

   Analyzing Hospital Preparedness in Disaster Facing Based on *the Hospital Safety Index* at RSUD dr. Harjono s, Ponorogo.

2. Special Purpose

   a) Knowing the overview of Hospital Safety in dealing with disasters based on *the Hospital Safety Index* at RSUD dr. Harjono s, Ponorogo.

   b) Knowing the overview of the hospital's structural safety in dealing with disasters based on *the Hospital Safety Index* at RSUD dr. Harjono s, Ponorogo.

   c) Knowing the overview of non-structural safety of hospitals in dealing with disasters based on *the Hospital Safety Index* at RSUD dr. Harjono s, Ponorogo.

   d) Knowing the description of the functional capacity of the hospital in dealing with disasters based on *the Hospital Safety Index* at RSUD dr. Harjono s, Ponorogo.

## 1.4 Research Benefits

1. Theoretical Benefits

   This research can contribute to the development and refinement of theories related to disaster preparedness in the hospital environment. By using the Hospital Safety Index (HSI), this study can instrument preparedness and find out the aspects of emergency response in hospitals.

2. Practical Benefits

   Able to identify using HSI related to preparedness in hospitals. Through this research RSUD dr. Harjono s, Ponorogo can update or develop new procedures that are more efficient and effective in dealing with disasters.

## 1.5 Originality of Research

Research related to the assessment of hospital preparedness in dealing with disasters using *the Hospital Safety Index* (HSI) is carried out with different objectives and objectives, such as the following studies:

Table 1. Originality of Research

| No | Heading | Year | Research Design | Variable | Result | Research Differences |
|---|---|---|---|---|---|---|
| 1 | Analysis of Hospital Disaster Preparedness Index X Based on Hospital Safety Index | Saswita Kemala Dewi (2019) | This type of research uses a semi-quantitative method. | Determining the value of an independent variable, either one or more variables (Independent) without making comparisons or connecting with other variables. | Based on the 3 assessment criteria of *the Hospital Safety Index* in this study, the results of structural preparedness value of 0.86, non-structural preparedness value of 0.96, emergency and disaster management preparedness value 0.73 were obtained. | The research was conducted at RSUD dr. Harjono s, Ponorogo and this research method uses a quantitative method with a descriptive design |

| No | Heading | Year | Research Design | Variable | Result | Research Differences |
|---|---|---|---|---|---|---|
| 2 | Application of *Hospital Disaster Plan* in Regional General Hospitals | Higeia Journal of Public Health Research And development (2021) | This study uses a qualitative method with an evaluation study approach | Knowing the applied percentage of *the Hospital Disasder Plan* (HDP) | Of the 145 hospital safety index points, there are 85 points in the high security category, 39 points in the medium security category, 19 points in the low security category, and 2 empty points | The assessment in this study is guided by the *Hospital Safety Index* (HSI) using a hospital safety index calculator. |
| 3 | Analysis of Preparedness in Hospitals in Facing Disasters | Sophie Zafira T, Syavira desputri, Amanda Aulia, Abdurrozaq Hasibuan (2024) | This research uses the method of literature review or literature review. This method involves collecting, evaluating, and synthesizing studies that have been published from the last five years. | Hospital preparedness in dealing with disasters, financial data management, cost estimation, and cost savings related to disaster management. | Hospitals are not ready to handle disasters because they do not have basic guidelines on how to handle problems arising from disasters. | In measuring hospital preparedness, this study measures Hospital Preparedness using *the Hospital Safety Index* (HSI) using a qualitative method . |

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| 4 | Analysis of Structural Preparedness in Facing Disasters Based on Hospital Safety Index | Ririn Afrima Yenni, Novrikasari, Juanita Windusari (2021) | This type of research *is Sequential Explanatory Design* with *mixed methods* which aims to determine the structural preparedness of hospitals in dealing with disasters at Dr. Mohammad Hoesin Hospital Palembang. | Analyze the structural preparedness of hospitals in dealing with disasters based on the Hospital Safety Index | Dr. Mohammad Hoesin Palembang Hospital, it was concluded that structural preparedness was at a high level of preparedness with an index score of 0.75. | The research was carried out RSUD dr. Harjono s, Ponorogo and did not only focus on structural safety aspects. |
| 5 | Analysis of Emergency and Disaster Management Preparedness Based on Hospital Safety Index PAH0/WHO at RSKT DR. Soetarto Yogyakarta | Krishnawati Golo (2022) | This study is a *mixed-methods research* with a sequential explanatory design. Data collection is carried out quantitatively and qualitatively. | The assessment in this study only focuses on module 4 in HSI | Dr. Soetarto Yogyakarta after being assessed by the hospital and the researcher is B with the assessment by the hospital having a safety index of 0.43 and a vulnerability index of 0.57, and the assessment by the researcher has a safety index of 0.65 and a vulnerability index of 0.35 | In this study, all aspects in HSI are assessed which consist of 4 modules |

This research was conducted at RSUD dr. Harjono s, Ponorogo using qualitative methods and descriptive design. And the main focus of this study is to assess hospital preparedness in dealing with disasters based on *the Hospital Safety Index* (HSI), while the assessment measured using the HSI calculator in this study is to measure all aspects contained in the HSI, which consists of four modules, and is not only limited to structural safety aspects. Thus, this study aims to provide a comprehensive picture of hospital preparedness in dealing with disasters or emergency situations.