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THE ANALYSIS PREPAREDNESS SEMBIRING GENERAL HOSPITAL DELI TUA, DELI SERDANG REGENCY FOR FACING DISASTER

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Abstrak

Indonesia as a country with a high risk of disaster needs to prepare hospital health facilities with an optimal level of preparedness. This study aims to analyze the preparedness of the Sembiring Deli Tua General Hospital in dealing with disasters based on the 2nd edition of the Hospital Safety Index (HSI) instrument issued by WHO in 2015 in Indonesian language which is validated. This study uses a mixed method, which combines quantitative and qualitative methods to answer the research objectives. The key informants in this study were the Deputy Director of the Sembiring Deli Tua Hospital in the field of General Administration and Human Resources, and tough informants from a number of hospital employees who were related to the research topic. The research begins with an assessment of the preparedness of the Sembiring Deli Tua Hospital with the HSI instrument. The results of the assessment are analyzed based on Structural Elements, Non-Structural Elements, and Elements of Emergency and Disaster Management. Further analysis is carried out by verifying the results of the assessment with observational data, in-depth interviews, and reviewing documents to reveal things that are considered important to answer research problems. Based on the analysis of Structural Safety Elements with an HSI score of 1 including level A (ready to face disasters), Non-Safety Structural Elements with a score of 0.952 including level A (ready to face disasters), and Emergency and Disaster Management Elements with an HSI score of 0.763 including the level category A (ready to face disaster). Based on the analysis of these three elements, it was found that the Sembiring Deli Tua General Hospital had a total HSI score of 0.938, including the level A category (ready to face disasters).

Keywords: Hospital Safety Index, Sembiring General Hospital, Disaster, Preparedness.

1. INTRODUCTION

Disasters are events or series of events that threaten and disrupt people's lives and livelihoods caused by natural and/or non-natural factors as well as human factors. The resulting in human casualties, environmental damage,

property losses, and psychological impacts (Law No. 24 of 2007).

Indonesia is a country that is prone to disasters. Based on the 2019 Indonesian disaster risk index for the period 1 January - 23 December 2019 issued by the National Disaster Management

Agency (BNPB), the death toll from all natural disasters that occurred reached 477 people, 109 people were declared missing, 3,415 people were injured, and 6 people were injured. Another million people were affected. The disaster has also caused damage to various public facilities including hospitals. In 2017, 75 units of health facilities were recorded as damaged by the disaster.

Deli Tua is a sub-district in Deli Serdang, based on the 2020 Ina RISK Application, including the potential for natural disasters such as earthquakes, floods, and flash floods in the medium category.

Health Service Facility (Fasyankes) is a tool and/or place used to organize health service efforts, both promotive, preventive, curative and rehabilitative for the community, including in the event of a disaster. Hospital health facilities play an important role in efforts to reduce/minimize the number of victims in the event of a disaster and accelerate the post-disaster recovery process (WHO, 2010, 2011, 2016). According to laws and regulations and national programs, safe hospitals must continue to operate in emergencies and disasters. However, several studies have shown that health facilities in Indonesia are still not safe from disasters (Kemenkes RI, 2012).

2. RESEARCH METHOD

This study uses a mixed research method (mix method), which combines the quantitative and qualitative methods with a

directed design to answer the research objectives, (Sugiono, 2015). Quantitative of data in the results of the assessment of the HSI instrument in the form of scoring is used to determine the category of preparedness level for each element and for the overall assessment based on the total scoring. Furthermore, the quantitative of data was confirmed by the results of observations, interviews and documents collected were analyzed by data reduction, presenting data, drawing conclusions and verifying according to general provisions that apply to qualitative research.

The study used the 2015 Hospital Safety Index (HSI) instrument in assessing the preparedness of the Sembiring General Hospital to face disasters based on the answers of competent parties at the hospital and the results of observations and reviews of supporting documents available at the hospital.

After the preparedness score is obtained, the hospital preparedness index is then determined to be classified into 3, namely levels A, B and C as described in the following table:

Tabel 1. Classification of Preparedness Index Values

Preparedness Index	Classification	What to do?

0 - 0,35	C	Corrective action is urgently needed. Hospital preparedness status is not sufficient to protect patients and hospital staff during and after a disaster.
0,36 - 0,65	B	Corrective action is needed in the short term. The state of preparedness is quite adequate, but there is still the potential for the hospital's function to fail in responding to disasters
0,65 - 1	A	It is possible that the hospital can function if a disaster occurs, however it is still recommended to increase the hospital's capacity

Data Processing

After collecting the data, data processing will be carried out. The stages of data processing are:

1. Data reduction

The stage of summarizing research data obtained from in-depth interviews, reviewing documents and the results of overall observations in the field.

2. Data presentation

The stage is carried out after the data summary stage. The data

collected will be presented in narrative form.

3. Drawing conclusions

The data that has been obtained, reduced and presented in a way that is easy to understand, then a conclusion is drawn based on a thorough observation of the data.

Data analysis

1. Triangulation techniques, namely researchers use different data collection techniques to obtain data from the same source. Data collection techniques were carried out by interview, document review, and observation.
2. Triangulation of sources is done by checking the data that has been obtained through several sources.
3. After the data has been collected, then the calculation (Scoring) is carried out to get the hospital preparedness index in dealing with disasters.

3. RESULT

Hospital Disaster Preparedness

The Sembiring Hospital's preparedness assessment in dealing with disasters using HSI based on the InaRISK online application is as follows :

Tabel 2. Assessment of Hospital Disaster Preparedness Elements using HSI at Sembiring Deli Tua General Hospital

Rating	Disaster				Total Score
	Earthquake	Flood	Flash floods	Covid-19	
Score	0,5	0,5	0,5	1	2,5

Information : 0 =Low; 0,5 = Medium; 1 = Higt

Assessment of Structural Elements, Non-Structural Elements Sembiring Deli Tua General Hospital preparedness assessment using HSI

based on Structural Safety Elements, Non-Structural Safety Elements and Human Elements Management of Planning and Emergency are as follows:

Tabel 3. Assessment of Structural, Non-Structural Elements and Disaster and Emergency Management using HSI at Sembiring General Hospital Deli Tua

Element	Score	Maximum Score	HSI Score	Weight	Level HSI	Level HSI
1	18	18	1	50%	0,50	A
2	88,50	93	0,952	30%	0,28	
3	30,50	40	0,763	20%	0,15	
<i>Total Hospital Safety Indeks</i>					0,938	

Element 1 : Strucktural; Element 2 : Non Structural; and Element 3 : Disaster and Emergency Management

Sembiring Deli Tua General Hospital based on the results of HSI calculations on structural safety elements with a score of 1, namely level A (ready to face disasters), on non-structural safety elements with a score of 0.952, namely level A (ready for disasters), and on the elements of Disaster and

Emergency Management with a score of 0.763, namely level A (ready to face disasters. Based on the analysis of the three elements above, it was obtained Sembiring Deli Tua General Hospital with a total HSI score of 0.938 including level A category (ready to face disasters)

4. DISCUSSION

Structural Safety Elements

This structural safety element consists of two sub-modules, namely: (a) events that affect hospital safety, and (b) building integrity. Sembiring General Hospital has a building structure that conforms to standards and has a development plan under the supervision of architectural staff and civil construction experts. This is in accordance with the statement of Rudi atmoko, et al (2012), which states that hospital buildings need to be planned to have a design earthquake-resistant structure,

which the aims to provide guarantees for hospital safety.

Until the completion of the study, there were no incidents that affected the safety of the hospital due to major structural damage or failure of the hospital building. As for the remodeling or modifications that occurred but there was no negative effect on the strength of the structure which resulted in a reduction in the strength of the structure because the modifications were only made to the layout and accessories without changing the structure of the building. This is in line with Law No. 28 of 2002 concerning buildings where in

Article 7 paragraph (3) it is stated that the technical requirements of the building include requirements for building layout and requirements for building reliability which include requirements for safety, health, comfort, and convenience.

The I system structural design of the Sembiring General Hospital building is in good condition, there is no deterioration in the quality of the building or cracks, the condition of the construction material does not have deformation and rust, the foundation safety is designed according to standards with strong evidence of no damage. The shape of the structural design of the building is regular, the structure has the same design, and there are no elements that cause significant twisting, the hospital roof structure is well connected and there is no large over-hanging roof, the structure's resistance to earthquakes and strong winds is good. , taking into account risk reduction.

Non-Structural Safety Elements

This non-structural safety element consists of four sub-modules, namely (1) Architectural Safety, (2) Infrastructure Protection, Physical Access and Security, (3) Critical Systems, and (4) Equipment and Supplies. Non-structural elements are very important for the functioning of the hospital.

Architectural elements differ from structural elements in that they do not form part of the load-bearing system of hospital

buildings. This element includes emergency access and egress routes to/from the hospital, critical systems (e.g. electricity, water supply, waste management, fire protection), medical equipment, laboratories and equipment (whether installed or not), supplies used for analysis and maintenance, and so on.

The Infrastructure Protection, Access and Physical Security of the hospital has a maximum value, this is supported by the critical service location of the Sembiring General Hospital in a strategic location, easy to reach and medical equipment and other important equipment are calibrated every year.

Based on the results of the interview with the Director of the hospital, it was stated that *"one of the efforts made by the management of the Sembiring General Hospital to improve the quality of health services is through calibration of medical devices"*. Calibration of medical devices is regulated in the Regulation of the Minister of Health Number 54 of 2015 concerning testing and calibration of medical devices. Based on the Minister of Health, calibration is a calibration activity to determine the correct value of the designation of measuring instruments/or measuring materials.

Elements of Emergency and The Emergency and Disaster Management

Safety Element consists of seven sub-modules, namely: (1) Coordination of Emergency

Activities and Disaster Management, (2) Hospital Disaster Management Planning, (3) Information and Communication Management, (4) Human Resources, (5) Logistics and Finance, (6) Patient Care and Support Services, (7) Evacuation, Decontamination, and Security.

The non-optimal assessment results in this sub-module illustrate that the hospital has not fully planned in accordance with the guidelines for disaster preparedness planning for hospitals. This can be seen from the results of observations and interviews which concluded *"even though a disaster management team has been formed, there are still members of the disaster management team who do not know that they are included in the disaster management team"*. As additional information, the hospital already has a disaster and emergency committee but it is not functioning optimally considering that disaster events are very rare, so that committee members are rarely active in carrying out their roles and responsibilities because they seem not to be the main task concerned.

Based on the results of the interviews above, it can be concluded that rare disaster events have caused negligence in the aspects of Hospital Disaster Management Planning. This can clearly be seen based on the results of the HSI assessment that have not been maximized in the corresponding sub-module. This happened because of the infrequent occurrence of disasters and the lack

of socialization of work programs related to hospital safety to team members on a regular basis. So that the disaster management team does not only exist administratively but must also be well socialized, especially to all team members.

Elista Retno Anjani's research (2005), explains that although a disaster and emergency committee team already exists, it needs to be socialized and updated regularly so that team members know their duties and functions as members of the disaster management team. This statement is in line with Tantri's opinion (2017), that realizing disaster risk is not enough and can completely eliminate potential disasters, disaster preparation and disaster risk reduction management are ways to minimize damage when a disaster occurs and the potential for long-term damage to hospitals.

Based on the explanation above, it is hoped that the structure of the disaster management team will be socialized immediately. The importance of the administrative role is not only to arrange the organizational structure but also to socialize the structure of the disaster management team on a regular basis so that each human resource involved knows and understands their work and functions in the event of a disaster. With an organizational structure if a disaster occurs, coordination can run well and structured.

This statement is in accordance with Adisasmitho (2014), which states that in the design of the health system, especially in the

health human resource sub-system, health human resource planning is one of the main elements of the sub-system which emphasizes the importance of efforts to determine the type, number and qualifications according to needs.

5. CONCLUSION

- 1) From the results of the assessment based on the Hospital Safety Index instrument, Sembiring General Hospital in general is a hospital that has level A disaster preparedness.
- 2) Based on the results of the analysis of Hospital Disaster Preparedness Elements from the HSI instrument, Sembiring General Hospital, it is known that there are four types of disasters referring to the InaRISK application, namely; (a) an earthquake with a moderate level, (b) a flood disaster with a moderate level, (c) a flash flood disaster with a moderate level, and (d) a high level Covid-19 pandemic disaster.
- 3) Based on the analysis of Structural Elements, Non-Structural Elements, and Disaster and Emergency Management from the HIS instrument, Sembiring General Hospital is categorized as level A in disaster preparedness.
- 4) Based on the analysis of the Key Components of Readiness to Face Covid-19 from the HSI instrument,

the Sembiring Hospital is included in the level A category and has implemented the key components of Covid-19 preparedness well.

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