



Overview of Healthcare Workers' Preparedness in Disaster Management at Cut Meutia Regional General Hospital, North Aceh Regency

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Abstract

Disaster management involves a series of activities, including prevention, risk mitigation, rescue, rehabilitation, and reconstruction, carried out before, during, and after a disaster occurs. The goal is to avoid or reduce the impact of disasters. In this context, the role of healthcare workers is crucial in disaster response. In Indonesia, there are regulations that mandate the responsibility of every healthcare worker in disaster management. To date, there has been no research or report describing the readiness of healthcare workers at RSUD Cut Meutia regarding disaster management. This study aims to provide an overview of the extent of healthcare workers' readiness in managing disasters at RSUD Cut Meutia in North Aceh Regency. This research is descriptive with a cross-sectional design, involving 285 respondents, and using Stratified Random Sampling technique. The research findings indicate that the majority of respondents have good knowledge of disaster management (52.3%), with a small percentage having a lack of understanding (2.1%). Most respondents show a positive attitude towards disaster management efforts (95.4%). Meanwhile, in terms of practices or previous experiences, the majority of respondents have adequate understanding (44.6%). The conclusion of this study is that the readiness of healthcare workers at RSUD Cut Meutia in North Aceh Regency in disaster management can generally be categorized as good.

Keywords: Disaster management, Health officers, Preparedness



Introduction

Disaster is a situation or series of events that occur suddenly, unexpectedly, or gradually but continuously, causing disruption to daily life or destabilizing the ecosystem. Thus, critical emergency measures are required to provide aid and protection to victims, whether human or environmental. According to Law No. 24 of 2007 on Disaster Management, disasters are classified into two categories: natural disasters, such as extreme weather events (tornadoes, storms, hurricanes) and geological occurrences (volcanic eruptions), and non-natural disasters, which include technological failures, modernization processes, disease outbreaks, and epidemics. Data from the Centre for Research on the Epidemiology of Disasters (CRED) indicates a global increase in reported disasters during the period 2000-2019, with 7,348 natural disasters recorded. These events have resulted in human casualties, significant socio-economic impacts, and substantial economic burdens^{1,2}.

Indonesia, due to its geographical, geological, hydrological, and demographic conditions, is highly vulnerable to various types of disasters. The National Disaster Management Agency (BNPB) records dozens of disaster types, particularly hydrometeorological disasters such as tornadoes, floods, landslides, forest fires, and tidal waves. In Lhokseumawe, disaster statistics show an increasing trend in disaster events from 2018 to 2022, including natural disasters such as floods and landslides. These events have had significant health impacts, including the paralysis of health services, fatalities, injuries, displacement, nutritional issues, clean water scarcity, environmental sanitation problems, infectious diseases, and mental stress^{3,4}.

Disaster management involves various efforts such as prevention, risk mitigation, rescue, rehabilitation, and reconstruction, aimed at preventing and minimizing human casualties, property damage, and reducing the suffering of victims. In the context of responding to health crises caused by disasters, the role of healthcare workers, including those in public health rapid response teams (PHRRT), is crucial. Clear guidelines are therefore needed for healthcare workers, non-governmental organizations (NGOs), donor agencies, and communities involved in responding to health crises triggered by disasters^{5,6,7}.

Given this background, research on the preparedness of healthcare workers in disaster management at Cut Meutia Regional General Hospital in North Aceh Regency becomes relevant, considering the strategic role of the hospital as a general hospital and a referral center for COVID-19 patients in 2021.

Material and methods

This study is a descriptive research using a cross-sectional design. The objective of descriptive research is to analyze data by illustrating or explaining the collected data without

aiming to draw generalized conclusions. The cross-sectional design measures variables only through momentary observation within a single observation period.

The research was conducted at Cut Meutia Regional General Hospital (RSUD Cut Meutia) from July 2023 to December 2023. The study population included all healthcare workers employed at RSUD Cut Meutia, totaling 966 individuals.

The sample consisted of all healthcare workers at RSUD Cut Meutia who met the inclusion criteria of being listed in the hospital's personnel system. The sampling method used was Stratified Random Sampling. The required sample size was calculated using Slovin's formula with a margin of error of 5%, resulting in a minimum sample size of 283 individuals.

The study variables involved healthcare workers at RSUD Cut Meutia and their preparedness in disaster management. The research instrument used was the KAP DM Questionnaire, which covered sociodemographic data, knowledge, attitudes, and practices. The validity and reliability of the instrument were tested using the Cronbach's alpha method.

The data collection procedure was carried out by having respondents complete a questionnaire after obtaining permission and consent. The data management process included editing, coding, data entry, and data cleaning. Data analysis involved univariate analysis to evaluate the frequency distribution and percentage of disaster management preparedness among healthcare workers at RSUD Cut Meutia.

Results

This study was conducted at Cut Meutia Regional General Hospital (RSUD Cut Meutia), located in North Aceh Regency, involving the participation of 285 healthcare workers as respondents. Primary data were collected through the direct distribution of questionnaires by the researcher. The study results provided information on the sociodemographic characteristics of the respondents, including variables such as age, gender, education level, workplace, length of service, involvement in disaster response, participation in disaster management training, and status as healthcare workers in a medical institution.

Table 1 Sociodemographic Data of Health Workers at Cut Meutia Hospital

Sociodemographic characteristics	Frequency (n=285)	Percentage (%)
Age		
17 – 25 Year	17	6,0
26 – 35 Year	182	63,9
36 – 45 Year	79	27,7
46 – 55 Year	7	2,5
Gender		
Male	89	31,2
Female	196	68,8

Level of Education	13	4,6
High School/Equivalent	154	54,0
D3	13	4,6
D4	96	33,7
S1	9	3,2
S2	0	0
S3		
Work Experience	113	39,6
≤5 Year	172	60,4
>5 Year		
Experience of involvement in disaster emergency response activities	164	57,5
Yes	121	42,5
No		
Experience of involvement in training on disaster management	148	51,9
Yes	137	48,1
No		
Types of Human Resources in Hospitals	285	100
Healthcare workers	0	0
Non-Healthcare workers		

Based on data analysis, the majority of respondents were aged between 26 and 35 years, predominantly female, held a Diploma 3 education level, had over five years of work experience, had participated in disaster emergency response, and had undergone disaster management training. All respondents were classified as hospital healthcare workers.

Table 2. Distribution of Knowledge, Attitudes, and Practices of Health Workers in Disaster Management at Cut Meutia Hospital

Characteristic	Frequency (n=285)	Percentage (%)
Knowledge		
Good	130	45,6
Enough	149	52,3
Less	6	2,1
Attitude		
Positive	272	95,4
Negative	13	4,6
Previous Practice/Experience		
Good	75	26,3
Enough	127	44,6
Less	83	29,1

An evaluation of the respondents' level of preparedness in disaster management was then conducted, covering aspects of knowledge, attitudes, and prior experience or practices. The

majority of respondents demonstrated adequate knowledge, positive attitudes, and sufficient previous practices or experience in disaster management.

Table 4 Overview of Knowledge Based on Sociodemographics

Characteristics Responden		Knowledge					
		Good		Enough		Less	
		n	%	n	%	n	%
Age	17 – 25 Years	7	41,1	10	58,9	0	0
	26 – 35 Years	73	40,1	104	57,1	5	2,8
	36 – 45 Years	47	59,4	31	39,2	1	1,4
	46 – 55 Years	3	42,9	4	57,1	0	0
Gender	Male	40	44,9	47	52,8	2	2,3
	Female	90	45,9	102	52,0	4	2,1
Level of Education	High School/Equivalent	6	46,2	6	46,2	1	7,6
	D3	73	47,4	76	49,3	5	3,3
	D4	6	46,2	7	53,8	0	0
	S1	38	39,6	58	60,4	0	0
	S2	7	77,8	2	22,2	0	0
	S3	0	0	0	0	0	0
Length of Service	≤5 Years	38	33,6	71	62,8	4	3,5
	>5 Years	92	53,5	78	45,3	2	1,2
Experience of Involvement in Disaster Emergency Response	Yes	79	48,2	83	50,6	2	1,2
	No	51	42,1	66	54,5	4	3,4
Experience of Involvement in disaster management training	Yes	76	51,4	70	47,3	2	1,3
	No	54	39,4	79	57,7	4	2,9
Types of Human Resources in Hospitals	Healthcare workers	130	45,6	149	52,3	6	2,1
	Non-Healthcare workers	0	0	0	0	0	0

To deepen the analysis, the relationships between knowledge, attitudes, and prior practices/experience were also analyzed based on respondents' sociodemographic characteristics. For instance, in terms of knowledge, respondents with a Master's degree tended to have better knowledge, while in terms of prior practices/experience, more than five years of service was associated with good practice.

Table 5 Overview of Attitudes Based on Sociodemographics

Characteristics Responden		Attitude			
		Positive		Negative	
		n	%	n	%
Age	17 – 25 Years	17	100	0	0
	26 – 35 Years	174	95,6	8	4,4
	36 – 45 Years	75	94,9	4	5,1
	46 – 55 Years	6	85,7	1	14,3

Gender	Male	85	95,5	4	4,5
	Female	187	95,4	9	4,6
Level of Education	High School/Equivalent	12	92,3	1	7,7
	D3	149	96,8	5	3,2
	D4	11	84,6	2	15,4
	S1	91	94,8	5	5,2
	S2	9	100	0	0
	S3	0	0	0	0
Length of Service	≤5 Years	106	93,8	7	6,2
	>5 Years	166	96,5	6	3,5
Experience of Involvement in Disaster Emergency Response	Yes	155	94,5	9	5,5
	No	117	96,7	4	3,3
Experience of Involvement in disaster management training	Yes	141	95,3	7	4,7
	No	131	95,6	6	4,4
Types of Human Resources in Hospitals	Healthcare workers	272	95,4	13	4,6
	Non-Healthcare workers	0	0	0	0

Table 6 Overview of Practices Based on Sociodemographics

Characteristics Responden		Practice					
		Good		Enough		Less	
		n	%	n	%	n	%
Age	17 – 25 Years	8	47,6	7	41,2	2	11,8
	26 – 35 Years	46	25,3	76	41,8	60	33,0
	36 – 45 Years	19	24,1	42	53,2	18	22,8
	46 – 55 Years	2	28,6	2	28,6	3	42,9
Gender	Male	28	31,5	39	43,8	22	24,7
	Female	47	24,5	88	44,9	61	31,1
Level of Education	High School/Equivalent	2	15,4	7	53,9	4	30,8
	D3	42	27,3	62	40,2	50	32,5
	D4	3	23,1	5	38,5	5	38,5
	S1	24	25,0	48	50,0	24	25,0
	S2	4	44,4	5	55,6	0	0
	S3	0	0,0	0	0,0	0	0,0
Length of Service	≤5 Years	30	26,5	43	38,1	40	35,4
	>5 Years	45	26,2	84	48,8	43	25,0
Experience of Involvement in Disaster Emergency Response	Yes	46	28,1	75	45,7	43	26,2
	No	29	24,0	52	43,0	40	33,1
Experience of Involvement in disaster management training	Yes	47	31,8	67	54,3	34	23
	No	28	20,4	60	43,8	49	35,8
Types of Human Resources in Hospitals	Healthcare workers	75	26,3	127	44,6	83	29,1
	Non-Healthcare workers	0	0,0	0	0,0	0	0,0

Overall, the results of this study can serve as a foundation for improving the knowledge, attitudes, and practices of healthcare workers related to disaster management at RSUD Cut Meutia, North Aceh. It is recommended that healthcare workers continue to maintain and enhance their level of knowledge and positive attitudes while also improving and advancing their practices in disaster management. For the hospital, these findings can be used as a



basis for designing training programs and enhancing disaster management competencies. Additionally, future researchers can utilize these findings as a reference for conducting further research in the field of disaster management, particularly concerning healthcare workers' involvement.

Discussion

The research findings indicate that respondents' preparedness in disaster management, particularly in terms of knowledge and practice, can be considered adequate. The results show that the majority of healthcare workers at RSUD Cut Meutia, North Aceh, possess sufficient knowledge and experience in various aspects related to disaster management. It was observed that respondents also displayed a supportive attitude towards disaster management efforts, reflecting a strong understanding of the healthcare workers' role in minimizing the impact of disaster events in disaster-prone areas⁸.

The importance of knowledge and practice/experience was revealed in this study, showing that respondents with good knowledge also tended to have adequate practice/experience in disaster response. Understanding the content of training positively contributed to their ability to handle disasters. Experience and participation in disaster response activities increased confidence and responsiveness in dealing with emergency situations⁹.

More specifically, the knowledge profile based on respondents' sociodemographic characteristics demonstrated that most healthcare workers had a good understanding of disaster management. Although the majority of respondents had not undergone disaster management training, the advancement of information technology through the internet has become a significant factor in increasing general knowledge related to disaster management¹⁰.

Additionally, the attitude profile based on respondents' sociodemographic characteristics revealed that positive attitudes were more dominant than negative ones. Most healthcare workers recognized the importance of volunteering during disasters as part of disaster management efforts and felt responsible for meeting the basic needs of disaster victims. An understanding of the healthcare workers' role in disaster management in disaster-prone areas also contributed to this positive attitude¹¹.

Data on prior practices or experience based on respondents' sociodemographic characteristics showed that the majority of healthcare workers had sufficient experience in disaster response. Positive attitudes and prior involvement in disaster management contributed positively to respondents' practices/experience in dealing with disaster situations¹².

These findings verify that knowledge, attitudes, and practices/experience of healthcare workers play a significant role in determining their preparedness in facing disasters. Increasing knowledge and practical experience can enhance disaster management

capabilities. Awareness of the importance of healthcare workers' roles in disaster management efforts also appeared strong in the study results¹³.

Conclusion

Based on the research conducted at RSUD Cut Meutia, North Aceh Regency, it can be concluded that the majority of healthcare workers possess good knowledge, positive attitudes, and adequate practices/experience related to disaster management. Although most respondents have a strong understanding and involvement, there are still some aspects of practice that need improvement. Therefore, it is recommended that respondents maintain their knowledge and positive attitudes while continuously enhancing their disaster management practices.

For RSUD Cut Meutia, these findings can serve as a basis for improving training programs and skill development for healthcare workers in disaster preparedness. By focusing efforts on improving the aspects of practice that still need enhancement, the hospital can strengthen the readiness of healthcare workers in dealing with disaster situations. For future researchers, these results can be used as a reference to develop further research on disaster management, particularly concerning healthcare workers, to gain deeper insights and more effective solutions for improving disaster preparedness.

Disclosure

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