

## **Analysis Of Nurses Competency To Preparedness In Facing Disasters In Regional Public Hospitals Of Ende District, East Nusa Tenggara Province 2020**

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### **ABSTRACT**

Disasters are a series of events that threaten and disrupt people's lives and livelihoods which can be caused by natural and non-natural factors. One of the ways to handle disasters in hospitals is by nurses who have standardized competence. This study aims to determine the relationship between nurse competence and disaster preparedness. This study uses a quantitative design method with a correlational analytic approach. Processing data using the Spearman Rank correlation test with the help of the SPSS program for Windows 16.00. Results of research is Knowledge has a significant relationship with disaster preparedness with a value of 0.001 (p-value <0.05) and attitude variables also have a significant relationship with disaster preparedness with a value of 0.007 (p-value <0.05). ) and the skill variable also has a significant relationship to disaster preparedness with a value of 0.043 (p-value <0.05). Nurse competence has a relationship with disaster preparedness in the hospital.

**Keywords:** Disaster, Preparedness, Competence, Nurse

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**BACKGROUND**

Indonesia as a nation that is also prone to disasters is geographically traversed by two mountainous routes, namely the Mediterranean to the west and the Pacific Circum to the east. This causes Indonesia to have many active fires and is prone to disasters. Disaster events that threaten and disrupt the life and livelihood of the community caused, both natural factors and / or non-natural factors as well as human factors, resulting in human casualties, environmental damage, property loss, and psychological impacts. (Kemenkumham, 2007). Natural disasters that often occur in parts of Indonesia include: long droughts, tsunamis, earthquakes, volcanic eruptions, landslides, floods and tornadoes. Still fresh in our memory a series of natural disasters that have caused many casualties, such as the tsunami tragedy in Aceh and Nias, the devastating earthquake in Tasikmalaya and the Padang-Pariaman area, landslides in Cianjur, and even floods in various areas that often come during the rainy season (Syahril, 2012).

In addition, during the last 2 years, various disasters have occurred in various parts of Indonesia which have caused many losses and casualties, one of which is the earthquake that hit Lombok with a magnitude of 6.9 on the Richter scale, killing more than 387 people (BNPB, 2018). In addition, disasters caused by human behavior also have a serious impact on the sustainability of living ecosystems such as forest burning in various regions of Kalimantan and Sumatra, all of which are important for mitigation. The impact of a disaster can reduce the quality of life of the population due to various public health problems that occur. Short-term impacts that occur due to disasters include death, serious injuries requiring intensive care, increased risk of communicable diseases, damage to health facilities and water supply systems. Meanwhile, the long-term impacts include an increase in insufficient food, thus affecting the level of fulfilling the nutritional needs of disaster victims. Evacuation of shelter that does not meet health requirements can reduce body resistance, which if not addressed will cause problems in the health sector. Meanwhile, health services are experiencing problems due to damaged health facilities, inadequate equipment, number or types of drugs and limited health personnel and operational funds (PPK-LIPI, 2015).

The government's efforts in dealing with disasters include building a disaster management system starting from ratifying Law Number 24 of 2007 concerning disaster management, establishing a National Disaster Management Agency, and increasing the national budget allocation for disaster management. In a large-scale disaster, Indonesia needs international emergency assistance, national and international coordination in maximizing disaster management for the community with a planned, integrated, coordinated and comprehensive mechanism (Maarif, 2012).

As one of the countries that is prone to disasters, it is important to strengthen the role of the Indonesian government together with the community to undertake joint efforts in a guided manner to anticipate worsening conditions due to disasters such as implementing an early warning system and conducting disaster preparedness training. Nurses as the front line in a health service have a big responsibility and role in handling daily emergency patients as well as when a disaster occurs. Until now, the need for nurses to deal with disaster victims in the community is the biggest need, namely as much as 33% of all health workers involved. Disaster preparedness training is not only carried out by those involved in disaster management but also for the general public, especially health workers such as nursing personnel. Nursing personnel as one of the health service providers, especially for emergency cases, are expected to be better prepared to deal with the impact of disasters, both within and outside of health services. The readiness of nursing personnel in a disaster

is demanded to be able to manage daily services, service for victims of disasters, and actively assist in saving the lives of disaster victims (Depkes RI, 2006)

The role of nurses as health workers with the largest population must be active when a disaster occurs. Nurses are one of the links in the Integrated Emergency Management System (SPGDT). Starting from pre-hospital, in-hospital, intra-hospital referral to inter-hospital referral. Readiness in the Integrated Emergency Management System (SPGDT) can shorten the response time and the handling of emergency patients can be done quickly, precisely, and according to standards. Based on information from several nursing staff in the field, the impression is that nursing staff often do not show adequate readiness in facing disasters. Nursing staff unpreparedness in dealing with disasters is due to the absence of standard guidelines in dealing with problems that occur due to disasters. Therefore, each nursing staff is expected to be able to understand the guidelines for disaster preparedness planning as an acceleration to improve disaster preparedness. The readiness of nurses in facing disasters is one of the requirements for hospital accreditation assessments. A hospital that already has a Hospital Disaster Plan does not mean that the hospital has nursing staff who are ready to handle disasters, because disaster preparedness requires training and simulations. Nursing readiness can only be realized if the nursing staff is involved in planning and is followed up with the formation of a hospital disaster management team. The hospital disaster management team is formed by a disaster preparedness planning team that is issued in a hospital director's decree. In the Guidelines for Health Resource Management in Disaster Management, the minimum need for a disaster management team consists of the Rapid Response Team (TRC), the Rapid Health Assessment Team (RHA) and the health assistance team. The TRC team is a team that is expected to be able to move immediately within 0-24 hours after information about a disaster occurs. The RHA team is a team that can depart at the same time as TRC or catch up in less than 24 hours. Meanwhile, the health assistance team is a team that departs based on needs after TRC and RHA return with the results of their activities in the field (Depkes RI, 2009)

The Ende regional public hospital is a referral hospital located on the island of Flores which is an area that is included in the disaster risk zone, with a geographical location on the edge of the coast and near volcanoes that are prone to natural disasters such as tsunamis, earthquakes, and landslides. Titih's (2010) research on nurse preparedness in disaster management revealed that nurses' preparedness was still low. In this study, most of the roles of nurses were not carried out properly, because there was no preparation from the institution in disaster preparation. Although all participants have been provided with emergency management training, the absence of a Disaster Plan in the family will be an inhibiting factor for nurses' readiness to respond to disasters. Based on a preliminary study carried out on September 16, 2020, through interviews with nursing staff in the emergency unit of the Ende District General Hospital, information was obtained that the hospital already has a disaster management team but has not been running optimally, not many nursing personnel have been involved in it. Communication tools are also not functioning properly, and there is no simulation planning for disaster management in the hospital on a regular basis. The purpose of this study was to determine the relationship between nurse competence and disaster preparedness in Ende District Hospital, East Nusa Tenggara Province.

## METHODS

This type of research is a quantitative study (correlation analysis) with a cross-sectional approach to analyze the relationship between the competence (knowledge, attitudes and skills) of nurses on disaster preparedness at the General Sakita Hospital in Ende Regency. The population in this study were 187 nursing staff who served in the Regional General Sakita House, Ende Regency. Meanwhile, to obtain a representative sample, the researcher used simple random sampling technique, which is a random sampling technique so that each element in the population has the same opportunity to become a sample. The sample in this study were nurses at the Ende Regional Public Sakita House. The sample size in this study used a table to determine the number of samples by Isaac and Michael with an error rate of 1% so that the total sample size was 103 people.

The instruments used in this study were a questionnaire and a check list consisting of 15 statements with details, namely 5 statements for knowledge, 5 statements of attitude and 5 statements of skills. Validity and reliability tests were carried out on 15 respondents consisting of 30 statements with answers 3 (always), 2 (rarely), 1 (never). From the results of the validity test, it was found that the value of  $r_{table} = 0.514$  and the  $r_{count}$  in each statement of the result was  $> 0.514$  so that the questionnaire used was declared valid. While the reliability test, obtained Cronbach's Alpha results  $> 0.60$ , namely 0.828 so that the questionnaire used was declared reliable. While bivariate analysis is used in this study to test the research hypothesis by using the chi square analysis test with the help of the SPSS for windows 20.00 program.

## RESULT

### Univariate Analysis

The research core data includes the distribution of nurses' competencies (knowledge, attitudes and skills) of nursing personnel in disaster preparedness at the Regional General Sakita Hospital which can be seen in table 1 below.

Table 1 Distribution of respondents based on knowledge, attitudes and skills at the Regional General Sakita House, Ende Regency

Variable	f	%
<b>Knowledge</b>		
Enough	5	4.9
Good	98	95.1
Total	103	100.0
<b>Attitude</b>		
Less	24	23.3
Enough	78	75.7
Good	1	1.0
Total	103	100.0
<b>Skills</b>		
Less	29	28.2
Enough	73	70.9
Good	1	1.0
Total	103	100.0

Based on table 1 above, it shows that the majority of respondents' knowledge variables are in good category, namely 98 respondents (95.0%). As for the sika variable, the majority of respondents were in the sufficient category, namely as many as 78 respondents (75.7%)

and for the skill variable it showed that most of the respondents were in the sufficient category, namely 73 respondents (70.9%).

Table 2 Distribution of respondents based on disaster preparedness at Ende District General Hospital

Preparedness	f	%
Less	13	12.6
Enough	29	28.2
Good	61	59.2
Total	103	100.0

Based on table 2 above, it shows that the respondent's preparedness variable is in the good category, namely 61 respondents (59.2%). While the lowest was the respondents with the less category, namely 13 respondents (12.6%).

### Bivariate Analysis

Bivariate analysis aims to determine the relationship between knowledge, attitudes and skills of nursing personnel in disaster preparedness at the Regional General Sakita House, Ende Regency, East Nusa Tenggara Province. The results of the chi square test are shown in the following table:

Table 3 Results of the chi square test

Variable	df	p-value
Knowledge	2	0,001
Attitude	2	0,007
Skills	4	0,043

Note: \* The variable has a relationship if (p-value <0.05)

Based on the results of the chi square variable test, knowledge, attitudes and skills have a significant relationship to disaster preparedness with a value (p-value <0.05) of 0.001 for the p-value of the knowledge variable, 0.007 for the p-value for the attitude variable and 0.043. p-value for the skill variable.

## DISCUSSION

### Relationship of Knowledge to Disaster Preparedness

Based on the results of the research above, it shows that the majority of respondents' knowledge variables are in good category, namely 98 respondents (95%). Based on the results of the chi square variable test, the knowledge variable has a significant relationship to disaster preparedness with a value of 0.001 (p-value <0.05). In line with research conducted by Husen (2020), the results of statistical analysis to see the relationship between disaster knowledge and preparedness at a 95% level of confidence obtained  $p = 0.015 < \alpha = 0.05$ , indicating that there is a significant difference in the proportion of preparedness between good and adequate knowledge at the Puskesmas The working area of the Ternate City Health Office is statistically significant so it can be concluded that there is a relationship between knowledge and the readiness of nurses in the Puskesmas in the working area of the Ternate City Health Office.

Radhi et al (2015) which states that knowledge is one of the factors that influence a person's behavior and beliefs, in addition to cognitive abilities shaping a person's way of thinking. Knowledge is one component of the competence of health workers, including nurses. Research conducted by Ajmain (2013) shows that the majority of nurses involved

in the disaster management team in the work area of the Aceh Tamiang Health Office have good knowledge, namely 65.0%, while those who have moderate knowledge are 20.0%, only 15% of respondents who Having insufficient knowledge, based on the scores of respondents' answers, the majority of nurses had good knowledge, namely 78%.

Research conducted by Cut in Husnayain (2020) states that the factors that influence disaster preparedness consist of 1) knowledge of disaster preparedness, 2) attitudes towards disaster preparedness, 3) policies and guidelines, 4) plans for emergencies. disaster, 5) disaster warning system, and 6) resource mobilization. Meanwhile, the research of Husen, Hakim et al (2020) shows that the knowledge variable is  $p = 0.015$ , and the skill variable is  $p = 0.171$ . Knowledge variable is the most dominant variable related to preparedness from the results of the logistic regression test, the value of  $\exp(B) = 4.200$ ,  $\text{sig} = 0.998$ .

Radhi's research (2015) on the relationship between knowledge and the preparedness of nurses in dealing with the Malaria disease shows that out of 101 nurses with good knowledge, 78.2% were ready to face the malaria outbreak, of the 141 nurses who had sufficient knowledge, 65.2% stated that they were not ready. , and all the nurses who were not well prepared to face the malaria epidemic in Aceh Besar District. The results of the analysis using the chi square test showed that there was a relationship between knowledge and readiness of nurses to face malaria outbreaks in Aceh Besar District, ( $p$  value = 0.000).

### **Relationship of Attitudes Toward Disaster Preparedness**

The attitude variable of the majority of respondents was categorized as sufficient, namely as many as 78 respondents (75.7%). Based on the results of the chi square variable test, the attitude variable has a significant relationship to disaster preparedness with a value of 0.007 ( $p$ -value <0.05). This is in accordance with the results of research by Bukhari et al (2013) showing statistical tests found that the value of  $\chi^2$  count (13,682) >  $\chi^2$  table (3,841) so that the null hypothesis ( $H_0$ ) is rejected, which means that there is a significant relationship between attitude and earthquake disaster preparedness. executive nurse at RSIA Government of Aceh. From the results of the analysis above, it is also found that the odds ratio is 8,750 which indicates that a good nurse's attitude in earthquake disaster preparedness has a chance of 8,750 times for good preparedness in an earthquake disaster. The assumption of the researchers was that a caring attitude made enthusiasm for preparedness action both for themselves and for patients so that the process of saving oneself when a disaster could occur. Attitudes can affect a person's behavior in life.

The results of Lenawida's research (2011) show that knowledge, attitudes, and support of family members have a significant effect on household preparedness in the face of an earthquake. Attitude variable is the most dominant factor influencing household preparedness in facing earthquake disasters. This has something in common with the results of the author's research where there is a significant relationship between knowledge and earthquake disaster preparedness at the Aceh Government Mother and Child Hospital. Radhi's research (2015) shows that out of 151 nurses with good attitudes, 68.9% were ready to face the malaria epidemic, of the 98 nurses who had a lack of attitude, 68.4% stated that they were not ready to face the malaria epidemic. The results of the analysis using the chi square test showed that there was a relationship between attitudes and the preparedness of nurses to face the malaria epidemic in Aceh Besar District, ( $p$  value = 0.000). The results of this study are in line with the research conducted by Sarbaini, which concluded that there is a significant relationship between knowledge and the preparedness of health workers in the face of the Rabies outbreak (Sarbaini, 2012).

**Relationship of Skills to Disaster Preparedness**

The skill variable shows that most of the respondents are in the sufficient category, namely 73 respondents (70.9%). Based on the results of the chi square variable test, the skill variable has a significant relationship to disaster preparedness with a value of 0.043 (p-value <0.05). This looks different from the results of research by Husen et al. (2020) showing the results of statistical analysis to see the relationship between nurse skills and preparedness at a 95% confidence level, the value of  $p = 0.117 > \alpha = 0.05$  indicates no significant difference. Thus the difference in the proportion of preparedness between skills is not statistically significant, indicating that there is no significant difference.

The increase in disaster preparedness for unskilled nurses is higher than that of skilled nurses. Based on the results of interviews and observations (qualitative) by Husen et al (2020), many informants have forgotten about the training and disaster simulations they have received and the material about disaster emergencies they received during college. From the results of the interview, the informants also gave varied answers, even among these informants, there were also those who gave answers that had no scientific proof, such as the wrong CPR cycle and most informants had not attended training / education about disasters and emergencies, because this was rarely used. hold it where the informant is. Therefore, why the nurse's skills are lacking in disaster preparedness is due to the lack of human resources and most of the nurses have not followed BTCLS (Basic Trauma Life Support and Basic Cardiac life support).

In fact, skills or skills are skills that a person must have to do their job in their respective field of work. Factors that affect the readiness of nurses include cognitive abilities, attitudes (affective), and psychomotor (skills) in disaster management (Nursana et al. 2013). Capacity building and skills can be done through related training, continuous training will make a person skilled, so that the skills they have related to disaster management can be used if needed at any time.

**Disaster Preparedness**

Meanwhile, the respondent's preparedness variable showed that the majority was in the good category, namely 61 respondents (59.2%). While the lowest was the respondents with the less category, namely 13 respondents (12.6%). Putra, et al., (2011) stated that preparedness is a phase that requires the development of strategies to coordinate so that the response to disasters can be better and can be more concerned and prepared for various disasters. In this phase one must understand the concepts and regulations of disaster preparedness, which in turn must also have knowledge of disaster risks in their respective areas such as vulnerability to impacts that may arise from disasters, identify resources that can be developed to reduce mortality rates and create a communication system for the response phase when a disaster occurs, be it a natural disaster or a non-natural disaster.

**CONCLUSION**

Based on the results of the chi square variable test, the knowledge variable has a significant relationship to disaster preparedness with a value of 0.001 (p-value <0.05).

Based on the results of the chi square variable test, the attitude variable has a significant relationship to disaster preparedness with a value of 0.007 (p-value <0.05).

Based on the results of the chi square variable test, the skill variable has a significant relationship to disaster preparedness with a value of 0.043 (p-value <0.05).

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**CONFLICTS OF INTEREST**

“No potential conflict of interest was reported by the authors.”

**REFERENCES**

- Ajmain. (2013). Analisis Kesiapsiagaan Perawat dalam Memberikan Pelayanan Kegawatdaruratan Sistem Pernapasan Akibat Bencana Alam di Wilayah Kerja Dinas Kesehatan Kabupaten Aceh Tamiang.;4 (75). Available from: <http://repository.usu.ac.id/handle/123456789/46171>
- BNPB. (2019). Data Informasi Bencana Indonesia (DIBI) (Internet). Badan Nasional Penanggulangan Bencana. 2019. (diakses tanggal 25 Februari 2019). Diambil dari: <http://bnpb.cloud/dibi>
- Bukhari et al (2013) Hubungan Sikap Tentang Regulasi, Pengetahuan Dan Sikap Perawat Terhadap Kesiapsiagaan Bencana Gempa Bumi Di Badan Layanan Umum Daerah Rumah Sakit Ibu Dan Anak Pemerintah Aceh Tahun 2013. *Jurnal Ilmu Kebencanaan (JIKA)* Volume 1, No. 2.
- Depkes RI. (2006). Pedoman Manajemen Sumber Daya Manusia (SDM) Kesehatan dalam Penanggulangan Bencana. In: RI DK, editor. Jakarta: Departemen Kesehatan RI; 2006.
- Depkes RI. Pedoman Perencanaan Penyiagaan Bencana bagi Rumah Sakit. In: RI DK, editor. Jakarta: Departemen Kesehatan RI; 2009.
- Husen, Hakim et al (2020) Faktor Determinan Kesiapsiagaan Perawat Terhadap Bencana Gunung Meletus (Gamalama) di Puskesmas Wilayah Kerja Dinas Kesehatan Kota Ternate. *Jurnal Kesehatan*, Vol. 3No. 2 <http://jurnal.fkmumi.ac.id/index.php/woh/article/view/313/110> [Diakses pada 12 Nopember 2020]
- Husnayain I, Andayanie E, Septiyanti S. (2020). Faktor yang Berhubungan dengan Motivasi Perawat Bagian Rawat Inap di Rumah Sakit Khusus Daerah Kota Makassar. *Window of Health : Jurnal Kesehatan* [Internet]. 25Oct.2019 [cited 28Jan.2020];:382-8. Available from: <http://jurnal.fkmumi.ac.id/index.php/woh/article/view/21414>.
- Kementerian Hukum dan HAM. (2007). Undang-Undang Republik Indonesia Nomor 24 Tahun 2007 tentang Penanggulangan Bencana. In: Indonesia KHdHR, editor. Jakarta: Kementerian Hukum dan HAM Republik Indonesi.
- Lenawida. (2011). Pengaruh pengetahuan, sikap dan dukungan anggota keluarga terhadap kesiapsiagaan rumah tangga dalam menghadapi bencana gempa bumi di desa Deyah Raya kecamatan Syiah Kuala Kota Banda Aceh. Tesis.
- Maarif S. (2012). Penanggulangan Bencana di Indonesia. Jakarta: Badan Nasional Penanggulangan Bencana.
- Putra, A., Petpichetchian, W., Maneewat.,K. (2011). Review: Public Health Nurses' Roles and Competencies in Disaster Management. *Nurse Media Journal of Nursing*, Vol 1(1) : 1 – 14, Banda Aceh
- Radhi SF, Mudatsir I, Bintang P, Jayawijaya K. (2015). Hubungan Tingkat Pengetahuan Dan Sikap Perawat Dengan Kesiapsiagaan Menghadapi



- Bencana Wabah Penyakit Malaria Di Kabupaten Aceh Besar. J Kedokt Syiah Kuala. 15(3):142–148.
- Sarbaini, P. Mulya. TD, Paulus, S. (2012). Pola Spasial Kasus Malaria dengan Aplikasi Sistem Informasi Geografis (Sig). Jurnal Masyarakat Epidemiologi Indonesia. Jakarta, 2012. XI (2) : 32-54
- Syahrial V . (2012). Buletin Info Krisis Kesehatan. Jakarta: Depkes RI.
- Titih Huriah et al. (2010). The Description of Community Health Nurses Preparedness on Disaster Management in Puskesmas Kasihan I Bantul Yogyakarta: Vol. 10 No. 2. Mutiara Medika : 128-134.