Knowledge about the Earthquake of Earthquake in Health in Pidie Jaya General Hospital with Meureudu Health Center

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Abstract

Knowledge of emergencies is very important for health workers, because this affects actions when they provide health services for disaster victims. This study aims to determine the level of knowledge and differences in the level of knowledge of emergencies in health workers at Pidie Jaya General Hospital and Meureudu Health Center. Quantitative research with purposive sampling technique for 150 health workers for each Pidie Jaya General Hospital and Meureudu Health Center. The level of knowledge of emergencies was assessed from scor on a total of 30 questionnaire statements containing questions about Airway, Breathing and Circulation, Triage, Basic Life Assistance. The level of emergency knowledge is in the Very Low category, which is as much as 50%, namely 75 respondents in Pidie Jaya Hospital health workers and as many as 50%, namely 75 respondents at the Meureudu Health Center health personnel. There is no difference in knowledge between health workers at Pidie Jaya General Hospital and Meureudu Health Center. The knowledge of hospital health workers is 57.2% while the Puskesmas is 63.2%, while the triage is 54.7% of the health staff of the hospital and 52.7% of the health personnel of the health center. The Basic Life Discharge indicator for hospital health workers was 63.0% and Puskesmas 61.4%. Health workers at Pidie Jaya General Hospital and Meureudu Health Center are still not ready to handle the victims of the disaster because they have very low knowledge of the emergency.

Keywords: Knowledge; Emergency; *Airway; Breathing* and *Circulation; Triage;* Basic Life Aid

1. Introduction

In recent years Indonesia has experienced natural disasters, such as the earthquake and tsunami disaster that experienced Aceh in 2004, the island of Nias and its surroundings were also hit by an earthquake in 2005, in 2010 a catastrophic succession struck Indonesia. Sunami T in Mentawai, floods and landslides in Wasior and volcanoes erupted in Yogyakarta. Disaster events in Indonesia intensitasnya or the volume of events can reach more than 1000 times a year or reach 3 times a day. This must be

addressed wisely, the experience of disasters so far has not been going well. The government and the community have proved to be less capable of dealing with emergency problems, this situation needs to be considered, namely by efforts to conduct disaster preparedness by the community, government and professional groups (Husna, 2012).

Aceh Province is one of the most vulnerable and high risk areas for disasters. On December 7, 2016 Aceh was again hit by a disaster, this happened in Pidie Jaya District. The earthquake rocked Pidie Jaya district with a force of 6.5 on the Richter scale at 5.03.36 West Indonesia Time. The epicenter was at coordinates 96.24 5.25 LU and BT, precisely on the ground at a distance of 18 kilometers southeast of the town of Sigli, Pidie and 2 kilometers north Meureudu, Pidie Jaya into an 15 km. The quake was also felt in neighboring districts such as Pidie, Bireuen, to Banda Aceh, Langsa and Simeulue Island. The epicenter was on land, so this disaster did not cause a tsunami (BNPB, 2016).

Data from BNPB (National Disaster Management Agency) that killed as many as 104 people, mostly from Pidie Jaya Regency with 97 victims and 139 people seriously injured, 718 people were lightly injured, and 43,529 people displaced. The earthquake also caused a number of damaged buildings, including the mosque in Samalanga, a minimarket building and a refueling station in Pidie Jaya which collapsed, and the road split in the local area. Data from BNPB also recorded 11,730 houses damaged by the earthquake, 105 shop houses collapsed, 14 mosques damaged, one hospital damaged and one school unit collapsed (BNPB, 2016) .

Hospitals play an important role in handling emergency situations during disasters so that health facilities must always be ready to accept victims of emergency when or not a disaster that requires quick and precise help. This is in accordance with the 2015-2030 Sendai Framework for Disaster Risk Reduction in Priority IV which contains increasing disaster preparedness for effective responses and for "Better rebuilding" in recovery, rehabilitation and reconstruction, in point 33c states that hospitals and other health facilities must be ensured to remain safe, effective and actively operational during and after a disaster in providing health services. Likewise with the Meureudu Health Center, Meureudu Health Center is also one of the health facilities that must be prepared to face disasters, at the time of many earthquake victims who were taken to the Meureudu Health Center because it was the closest Puskesmas to the Meureudu Market, and there were many shops that experienced the collapse caused a lot of casualties inside the store.

Health Workers are one of the teams that are needed when a disaster occurs. Health workers are expected to continue to carry out activities, especially in carrying out disaster response responses to save lives so as to minimize the fall of casualties due to disasters. However, health workers still have to play a role when the disaster comes, even though the hospital is damaged by the disaster. Every Hospital a t au Puskesmas should have health personnel who have knowledge of disaster emergency, for health personnel appropriate action can reduce disaster victims.

Research conducted by Basnet et al (2016) with the title: *"Disaster Nursing Knowledge in Earthquake Response and Relief Among Nepalese Nurses Working in Government and Non-Government Sector"*. Basnet and colleagues conducted research in Nepal. They made a comparison of the level of earthquake disaster knowledge to nurses who work in Government and Non-Government Hospitals. The results showed that nurses working in government hospitals had higher nursing knowledge than nurses at non-government hospitals. This has caused the Nepalese state to improve itself because Nepal is one of the developing countries that is often hit by earthquakes so nurses in all hospitals must be prepared to respond to disaster victims.

Another study conducted by Hasanuddin (2015) entitled "Factors related to the Level of Knowledge of Puskesmas Nurses on Emergencies Facing Earthquake & Tsunami Disasters (Case Study at Samatiga Health Center and Drien Rampak Health Center in West Aceh Regency)". The results of a study conducted by Hasanuddin (2015) on nurses at Samatiga Health Center and Drien Rampak Health Center in West Aceh Regency showed 64.4% of respondents had a lack of knowledge. The researcher found that the lack of knowledge of the Puskesmas nurses in earthquake and tsunami disaster emergency services was related to the implementation of disaster nursing at the individual/family level and an understanding of pulmonary heart resuscitation techniques.

This is of interest to researchers who want to know how the level of knowledge about disaster emergencies between health staff of Pidie Jaya General Hospital and health workers at Meureudu health center and want to know whether there is a difference in the level of knowledge of emergency between Pidie Jaya General Hospital staff and Meureudu health center health personnel . In general, this study aims to determine the level of knowledge of emergencies and differences in the level of knowledge of emergencies between health workers at Pidie Jaya General Hospital and Meureudu Health Center.

2. Research Method

This research was conducted with a quantitative observational research method in cross sectional with comparative techniques. This research me *purposive sampling* of 150 health workers for each Pidie Jaya General Hospital and Meureudu Health Center.

To measure the level of knowledge of the health personnel of Pidie Jaya General Hospital and Meureudu Health Center sk or assessed based on answers to a questionnaire 30 statement. The questionnaire used was a questionnaire developed from the journal examined by Pritika Basnet et al with the title " *Disaster Nursing Knowledge in earthquake response and relief among Nepalese nurses working in Government and Non-Government Sector"*. Scoring is based on 5 levels: Very low (<60.00%), Low (60.00-69.99%), Moderate (70.00-79.99%), High (80.00-89.99%), Very high (> 90.00).Analilsis da t a T-test and *Mann Whitney* test using *programe Statistics Service Solution SP SS version 16 .0.*

Data analysis was carried out after the process of collecting data through the stages of *editing, coding* and *tabulating* and then carried out the T test and *Mann Whitney* test by using the *SPSS version 16.0 Program Service Solution Statistics, the* results obtained were interpreted using probabilities. Data are analyzed through percentages and calculations by means of analysis of differences.

3.   Results and Discussion

3.1 The Results of Research

Table 1 Distribution of Frequency of Characteristics of Respondents in Pidie Jaya General Hospital (n = 150) and Meureudu Health Center (n = 150)

No.	Characteristics	Pidie Jaya General Hospital		Meureudu Health Center	
		N	%	N	%
1	Age 25-36 years old	150	100%	150	100%
2	Gender Man Women	56 94	37.33% 62.67%	22 128	14.67% 85.53%
3	Level of education D1 D3 S1 S2	- 83 67 -	 55.33% 44.67% 	- 78 72 -	- 52% 48% -
4	Employment status Devotion Honorary staff Government employees	47 64 39	31.33% 42.67% 26%	25 48 77	16.67% 32% 51.33%
5	*Emergency* Training(ACLS, BCLS or *nursing emergency)*	56	37.33%	33	22%

After conducting research on health workers at Pidie Jaya General Hospital and Meureudu Health Center to 300 respondents, the frequency of the percentage of emergency knowledge was obtained based on five categories (Gaberson et al, 2013) as follows:

Table 2 Frequency Distribution and Percentage of Emergency Knowledge in Pidie Jaya General Hospital and Meureudu Health Center Health Workers

No.	Level of Emergency Knowledge	Pidie Jaya General Hospital		Meureudu Health Center	
		F	%	F	%
1	Very High	2	1.33	2	1.33
2	High	10	6.67	9	6.00
3	Moderate	24	16	24	16
4	Low	39	26	40	26.67
5	Very Low	75	50	75	50

The results of the frequency distribution and the percentage of emergency knowledge between Pidie Jaya General Hospital health workers and Meureudu Health Center using the Mann Witney test were obtained from the statistical test output known as the Asymp value . Sig. (2-tailed) 0.780 greater than 0.05, it can be concluded that Ha is rejected (there is a difference in emergency knowledge between health workers at Pidie Jaya General Hospital and Meureudu Health Center) and H0 is accepted (there is no difference in emergency knowledge between health staff at Pidie General Hospital Jaya with Meureudu Health Center). This can be seen also in the table below:

Table: 3 *Mean* (average) differences in emergency knowledge based on indicators between health workers at Pidie Jaya General Hospital and Meureudu Health Center

NNNO	Level of Emergency Knowledge	Pidie Jaya General Hospital		Meureudu Health Center		Mann Witney Test
		F	%	F	%	
1	Very High	2	1.33	2	1.33	0.780
2	High	10	6.67	9	6	
3	Moderate	24	16	24	16	
4	Low	39	26	40	26.67	
5	Very Low	75	50	75	50	

The table shows that the knowledge of emergency health personnel at Meureudu Community Health Center and Pidie Jaya General Hospital is still very low. This greatly influences the ability of health workers in emergency treatment during disasters. *The International Council for Nurse* (ICN) states that all nurses must be prepared with good knowledge in order to effectively respond to disaster events.Lack of knowledge about nursing during disasters will create confusing conditions where nurses have to deal with limited resources (Basnet et al., 2016). Health workers have a central role in managing and managing disasters. But so far it can be seen that the lack of the role of health workers in handling a disaster is not only in Indonesia but also in the world. This is possible due to the lack of confidence of health workers in handling disasters due to the lack of knowledge or competencies possessed.

Knowledge of health workers about disaster management in the event of a disaster is related to the level of education. Education is a learning in the form of knowledge, skills and habits obtained from someone to others to be known, understood and applied (Mubarak, 2007). Health workers must have skills or competencies. These competencies include knowledge, attitudes and skills that must be improved or developed and maintained so as to ensure that nursing staff can carry out their roles and functions professionally (Widayatun and Zainal, 2013).

The results of the study indicate that the Pidie Jaya General Hospital and Meureudu Health Center are not ready to face the emergency conditions due to the disaster. This was viewed in terms of the mastery of knowledge possessed by the majority of health workers in the Hospital and Health Center. It was found that the level of knowledge in health workers was very low. The results of this study are in line with the research conducted by Hasanuddin (2015) which found that most nurses in Samatiga Health Center and Drien Rampak Health Center in West Aceh District had less knowledge (64.4%) about emergencies in the face of earthquakes and tsunamis. Assessment is based on the answers to the questionnaire consisting of 25 questions relating to knowledge about disasters, the impact and management of disaster nursing and 20 questions related to knowledge of emergency nursing services facing disaster victims. This study also found that there were many respondents who had never attended training*emergency.* 82.2% never attended *Basic Life Support* (BLS), 97.8% of respondents had never attended the *Basic Cardiac Life Suppor (BCLS)* training and 91.1% of the respondents had never attended *nursing emergencies.* Semest his i health worker must attend trainings in the field of health, this is due to strongly support the ability of the health worker, as research conducted by Fung et al (2008) to 164 nurses*register Nurse (RN)* who continue the study S2 Nursing at the University at Hong Kong. This study states that to support nurses' ability in handling disasters, there are several competencies that must be fulfilled, namely: *First aid, Basic Life Support (BCLS), Advanced Cardiovascular Life Support (ACLS), infection control, field triage, pre hospital trauma life support, advanced trauma care nursing, post traumatic psychological care,* and *trauma counseling* (Fung, Loke and Lai, 2008).

This is different from the research conducted by Cut Husna (2011) to 97 hospital nurses in Banda Aceh who found that the clinical competence of nurses in handling tsunamis was in *moderate* or midlevel with a scale used in the low, mid to high ranges. This contributed to the nurses' ability to provide health services during the tsunami. Knowledge will greatly affect health workers in increasing the ability to be applied to emergency conditions during disasters, so that relief and rescue activities for disaster victims run precisely and quickly (Husna, 2012).

Another study conducted by Saltira and Rachmalia (2017) on Puskesmas nurses in Banda Aceh who stated that nurses' knowledge about earthquake and tsunami disaster management for the stage of the disaster was sufficient, namely 58.8%. This result was obtained from the answers to the nurse questionnaire which consisted of 28 items of questions about nurses' knowledge regarding earthquake and tsunami disaster management in the working area of the city of Banda Aceh. This is influenced by the number of respondents who have never attended training related to disaster management, in accordance with the research conducted by Hasanuddin (2015) which shows that there is a meaningful relationship between risk factors (Training related to disaster management) with the level of knowledge of nurses in health centers regarding earthquakes . Nurses who work in Puskesmas and hospitals should have BLS *(Basic Life Support)* and ALS *(Advanced Life Support)* competencies . These competencies include knowledge, attitudes and skills that must be improved or developed and maintained so as to ensure that nursing staff can carry out their roles and functions professionally (Widayatun and Zainal, 2013).

The research conducted by Pritika Basnet, Praneed Songwathana and Wipa Sae-Sia (2016) was also obtained from 300 nurses, on average having knowledge of earthquake disasters at a moderate level (70.07 ± 10.01) based on answers from questionnaires containing 30 items questions about knowledge in the response phase and disaster recovery phase. This study also stated that 78% of respondents had never attended *emergency* training.

The results of the research that the researchers have done indicate that the Pidie Jaya General Hospital and Meureudu Health Center are not ready to face the emergency conditions due to the disaster.Stuttering occurs in handling and confusing information and data on victims and damage conditions, making it difficult for policy making to handle disaster emergencies. Such a situation and condition on the ground is due to the lack of a good, structured and systematic mechanism of the command post and coordination of disaster response coordination. Hospital and Puskesmas unpreparedness is also reviewed in terms of mastery of knowledge possessed by the majority of health workers in the Hospital and Health Center. As according to Husna (2012) Knowledge will greatly affect health workers in increasing the ability to be applied to emergency conditions during disasters, so that relief and rescue activities for disaster victims go right and quickly.

Efendi and Makhfudli (2009) explain that health workers have an important role in disaster management consisting of roles in pre-disaster, during disasters and post-disaster. According to Jakeway et al. (2008) health workers in disasters must have the knowledge to develop policies in disasters, plan thoroughly, implement and evaluate training activities, simulate preparedness and emergency response.

The concept of the emergency knowledge of health workers includes three indicators, namely the study of *Airway, Breathing* and *circulation*, the study of *triage* and the study of Basic Life Assistance.The following diagram of the difference in knowledge of health workers based on these three indicators.
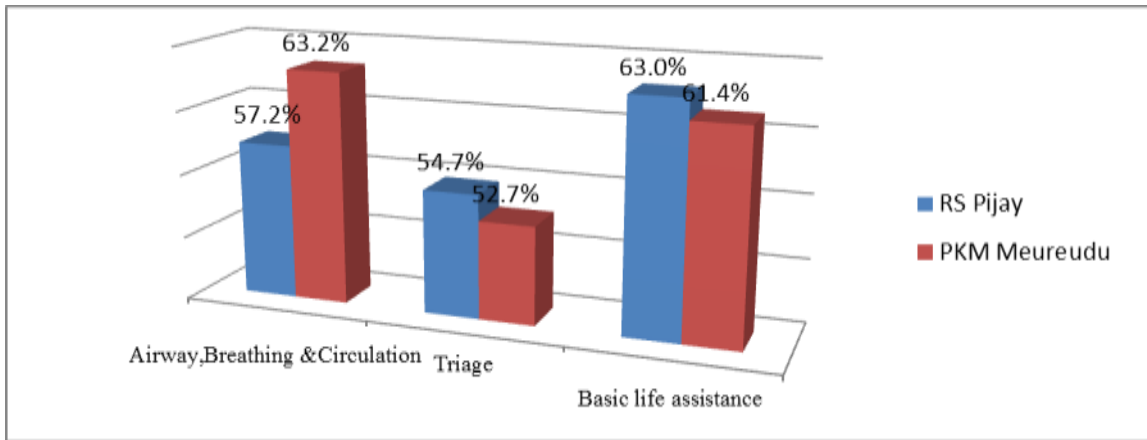
Picture. 1 Diagram of the Differences in the Level of Emergency Knowledge in Pidie Jaya General Hospital and Meureudu Health Center Health Workers based on Indicators

Based on Fig . 1, health workers between the Hospital and the Meureudu Health Center have a level of knowledge that is not much different, only on the *Airway, Breathing and circulation* indicatorsthat look different. Knowledge of hospital health workers is 57.2% while Puskesmas is 63.2% . The results also found that between the three indicators the T test was carried out between the knowledge of the health staff of Pidie Jaya General Hospital and Meureudu Health Center, for *Airway, Breathing* and *Circulation* there were differences, and health center health workers were found to be more knowledgeable than Pidie Jaya General Hospital health workers, even though the hospital health staff should be more knowledgeable because they are more likely to have attended *Emergency* Training , as in the next indicator, the knowledge of health workers in the Hospital is higher than that of health workers in the Meureudu Health Center for *Triage* indicators and Basic Life Assistance.

For *Airway, Breathing* and *Circulation* indicators when viewed in more detail each item for the correct answer is:
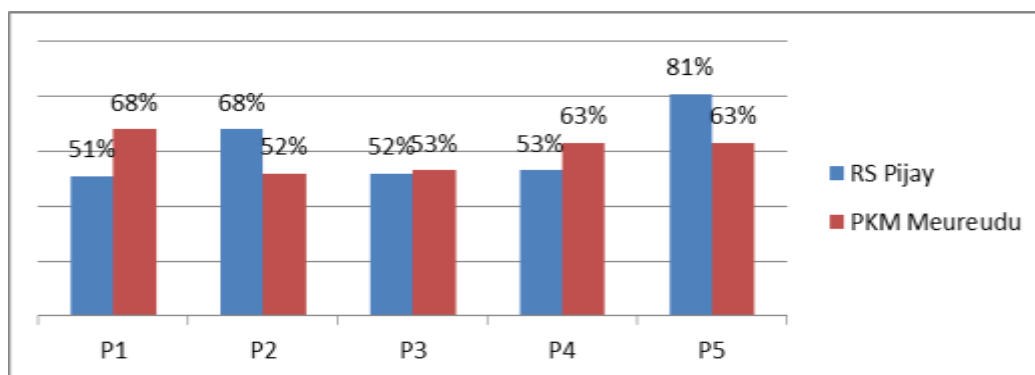

Fig. 2 Diagram of differences in *Airway, Breathing* and *circulation* indicators per item between Pidie Jaya General Hospital and Meureudu Health Center Health Personnel

In P5, it was seen that there was a significant difference between Pidie Jaya General Hospital health workers and Meureudu Community Health Center (Figure 2), 81% of health workers in the Hospital answered correctly while health workers at Meureudu Health Center (63%) answered correctly on the question. Item 5, namely regarding the administration of tetanus vaccines to victims of disasters. The provision of TT vaccines for disaster victims is very important because it can prevent the number of

victims due to tetanus. For victims of disasters, many injured people are at risk of infection, so vaccination must be given to all disaster victims who have been injured (Mudatsir, 2015). For the TT vaccine problem, all health workers at the hospital or health center must know it, because this is one of the actions for wound recovery.

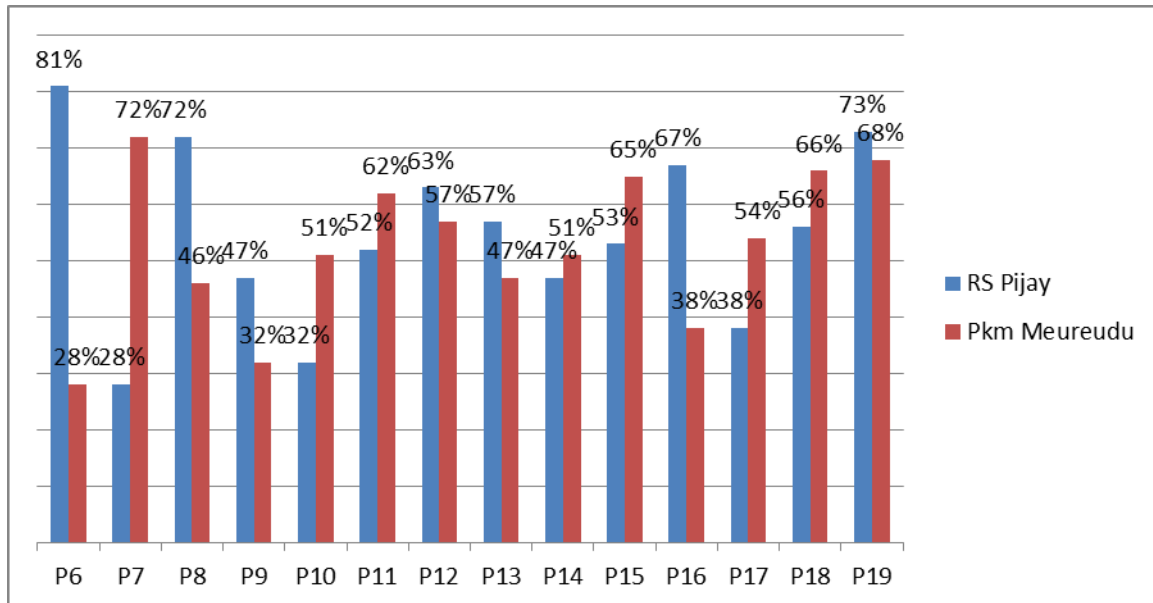For the *Triage* indicator when viewed in more detail each item for the correct answer is:

Figure.3 Diagram of the difference in *Triage* indicators per item between Pidie Jaya General Hospital Health Staff and Meureudu Health Center

On P6 and P16 it looks different between health workers in the Hospital and Meureudu Health Center, for item 6 regarding "one of the most important strategies for handling victims of earthquake disasters is an accurate *triage* " Hospital health workers are more likely to answer correctly 81% (Figure 3), while only 28% of Puskesmas answered correctly. Whereas item 16 "Most of the victims of the earthquake experienced a broken bone", it was seen that the difference in health workers in the Hospital 67% answered correctly, only health workers at the health center were 38% who answered correctly.This is because hospital health workers more often deal with patients who are in an emergency compared to health workers at the Puskesmas who more often handle patients who complain of non-severe illnesses.

Triage is the first thing we do when a disaster has occurred, *triage* aims to sort out victims based on the priority level of treatment in the Emergency Center, this is done by prioritizing patient safety by ensuring treatment time and resource allocation is needed for the level of illness or injury. Knowledge and experience of health workers is very influential in making decisions for actions taken. As research conducted by Aloyce et al. (2014) found 33% of all nurses working in Dar es Salaam Hospital did not know about *triage* . 13% of respondents reported that they attended training, but were not well informed about how to *triage* victims. More than half of the respondents (52%) were unable to allocate victims for the appropriate *triage* category , 58% of respondents did not have knowledge of the deadline for the*triage* category . Another study conducted by Hadi et al (2016) on 25 nurses at the emergency room at the RSUD dr. Soedirman Kebumen found that all respondents belonged to both categories of knowledge about *triage* and 88% of respondents were categorized as poor in the implementation of *triage* . More than half of the respondents fall into the poor category of *triage* knowledge.

The study conducted by Basnet et al. (2016) found that the lowest results of knowledge on nurses in hospitals in the Nepal region were on the *triage* indicator, which was 31.0 ± 46.2, while for the highest indicator on knowledge of injuries due to disasters was 96.0 ± 20.4 The *triage* indicator is located at the *very low* or very lowest level. Whereas previous research conducted by Hermawati (2010) in Nurses of one Hospital in Banda Aceh found the level of knowledge of nurses was quite high in *triage* and wound care, this was thought to be different because this study only took respondents from one hospital while Basnet took respondents from two hospitals, then Hermawati's research the majority of nurses (86%) had attended training and education about disasters, while the Basnet study (2016) the majority of nurses (78%) did not have disaster-related training and education. Likewise with this study, health workers in hospitals know more about *triage* (7.65) than health workers in Meureudu Health Center (7.37), this is probably due to more hospital health workers who have attended emergency training (37, 33%) than health workers in Meureudu Health Center only 22%.

For the Basic Life Assistance indicator when viewed in more detail each item for the correct answer is:
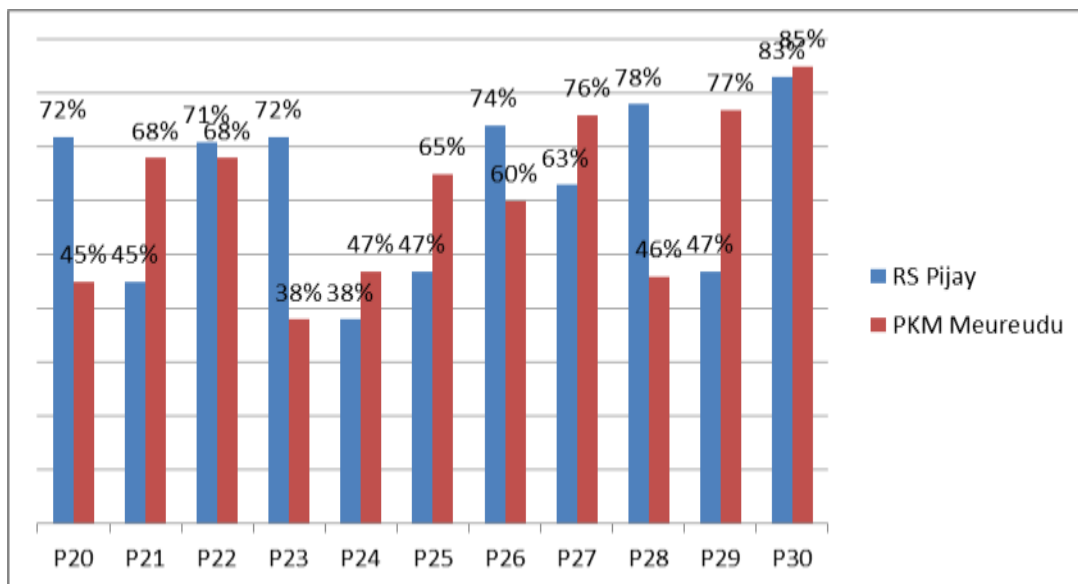

Figure.4 Difference diagram of Basic Life Assistance indicators per item between Pidie Jaya General Hospital Health Staff and Meureudu Health Center.

In item 20 and item 23, it looks different between hospital health workers and Meureudu health center (Figure 4). 72% of the health staff in the hospital answered correctly while the Puskesmas health personnel were only 45%. Item 23 as many as 72% of hospital health workers answered correctly, while the Meureudu Community Health Center only answered 38% correctly. The Basic Life Assistance Indicator found differences in item 20 about "the main cause of death during earthquake disasters is respiratory failure", found respondents in the Hospital as much as 72% answered correctly, while in Puskesmas as many as 45% answered correctly. Item 23 also clearly shows the difference, 72% of hospital respondents answered correctly, while Puskesmas only 38% answered correctly. This is because more hospital health workers have attended *emergency* training than health center health workers. Pidie Jaya General Hospital amounted to 37.33% of all respondents or 56 respondents who had attended*emergency* training while Meureudu Public Health Center had the number of health workers who had attended *emergency* training only 33 respondents or 22% of all respondents , this training greatly affected the knowledge of emergencies for health workers. This is also one of the competencies for health workers.

A study of nurses' knowledge in Africa regarding basic life assistance showed that of 286 nurses only 11% reached 80% (Keenan, 2009). Another study conducted by Grzeskowiak (2009) at the Polish Children's Hospital conducted a survey of knowledge about Pulmonary Resuscitation (BHD) to 64 doctors and 54 nurses and the survey results turned out that most doctors and nurses were unable to distinguish between CPR for adults and children and CPR cycles with one helper or two helpers. The same study was conducted by Rau (2007) which states that there is a relationship between nurses' knowledge and the ability to perform basic life assistance at IRD RSUP Prof. Dr. RD Kandou Manado. Whereas the results of the research conducted in Pidie Jaya found that the knowledge of health workers on the Basic Life Assistance indicator for Hospitals was only an average of 6.91 while the Meureudu Community Health Center was 6.75. Their level of knowledge of basic life assistance is very lacking. This is because health workers are only a few percent who have attended *emergency* training.

Conclusion

Health workers at Pidie Jaya General Hospital and Meureudu Health Center health personnel have very low levels of emergency knowledge. This is due to the large number of health workers who have never attended emergency training such as ACLS, BLS and nursing emergency. There is no difference in the level of knowledge of the emergency between the health staff of the Pidie Jaya General Hospital and the health workers at the Meureudu Health Center. This shows the need for increased competence for health workers to be able to provide services in accordance with the tasks given at the level of the service. Increased knowledge of emergencies can be a preventive step so that health workers are able to carry out their functions to the maximum when a disaster occurs.

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