Factors Associated With Nurse Preparedness in Handling Covid-19 Patients in The Installation Room Hospital Emergency Department

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ABSTRACT

Corona virus or known as COVID-19 is a disease outbreak that can be transmitted through the respiratory tract. Based on data in Indonesia until March 25, 2022 positive 5,986,830, recovered 5,676,510, died 154,343 cases. Emergency room nurses are health workers who are at the forefront in handling infectious diseases, nurses have a higher risk of contracting COVID-19, therefore the importance of preparedness for nurses. The purpose of the study was to identify factors related to the preparedness of nurses in handling COVID-19 patients in the emergency room of one of the hospitals in the city of Bandung. This type of research is quantitative with a descriptive correlation design with a cross sectional approach. The population in this study were nurses in the emergency room. Sample selection using total sampling technique, as many as 30 nurses. Data analysis using the Chai-Square test. The results of the study showed that there was a relationship between knowledge and nurses' preparedness in handling COVID-1 patients with a value of p=0.018, there was a relationship between education and nurses' preparedness in handling COVID-19 patients with a value of p=0.024, there was a relationship between age and nurses' preparedness in handling COVID-19 patients with a value of p=0.005, there was a relationship between length of work with nurses' preparedness in handling COVID-19 patients with a value of p=0.018. The majority of nurses' preparedness falls into the ready category with a frequency of 24 people (80.0%) while the category is not ready with a frequency of 6 people (20.0%).The conclusion in the study of factors related to nurse preparedness in handling COVID-19 patients in the Emergency Room is knowledge, education, age and length of work and nurse preparedness.

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INTRODUCTION

The beginning of 2020 humanity around the world was shocked by the Corona Virus Pandemic Phenomenon or known as COVID-19. COVID-19 is a disease outbreak that can be transmitted through the respiratory tract, the symptoms caused by patients infected with COVID-19 are acute respiratory disorders such as fever, cough, and shortness of breath. According to the World Health Organization (WHO), this disease is caused by SARS-CoV2 which can spread between humans, through direct contact with infected people (by touching and shaking hands) (Kemenkes RI 2020). The increase in the number of cases was quite rapid, and spread to various countries in a short time. The increasing number of daily cases in Indonesia has caused health facilities, especially hospitals. Therefore, the COVID-19 pandemic is the biggest challenge for health systems around the world, especially hospitals in Indonesia, which are faced with the need to develop surge capacity so that the increasing need for medical services can be properly met (Lapostolle et al., 2020).

Researchers in South Africa have identified two lineages of Omicron variants called BA.4 and BA.5, reflecting the continued emergence and evolution of Omicron, and therefore the resurgence of COVID-19 cases seen again in South Africa. The BA.4 and BA.5 lineages were first detected from specimens collected in January and February 2022 in South Africa. Since then, these lineages have also been found in other parts of the world and have now been detected in many countries. The fourth wave of COVID-19 in South Africa is mainly due to three Omicron lineages (BA.1, BA.2 and BA.3). By the end of 2021, BA.1 (Omicron) ousted the deadliest Delta variant and became the dominating variant which was then replaced by BA.2 Omicron lineage in March 2022 becoming the most dominant variant worldwide until the end of April 2022. Meanwhile, several new subvariants/sub-lineages of Omicron have emerged and some of them, notably BA.2.11 (France), BA.2.12.1 (USA) and BA.4/5 (South Africa) dominate BA.2 in some countries (Mohapatra et al., 2022). The rapidly growing COVID-19 outbreak in Indonesia requires all hospitals to be able to adapt quickly and ensure safe services for patients and health workers/nurses themselves (Lapostolle et al., 2020).

According to the Regulation of the Minister of Health of the Republic of Indonesia number 47 of 2018 concerning Emergency Services, the Emergency Room (IGD) is one of the service units in the hospital that provides initial treatment (for patients who come directly to the hospital) / continuation (for patients referred from other health care facilities or from PSC 119), who suffer from illness or injury that can threaten their survival. One of the health workers in the Emergency Department (IGD) is a nurse who is the profession with the largest number in health services in hospitals, nurses are required to pay more attention to being prepared to deal with patients in all situations including the COVID-19 pandemic situation. The involvement of nurses who are at the forefront in dealing with COVID-19 patients must have the right knowledge, prevention and infection control skills (Cahyaharnita, 2020).

Preparedness is an activity carried out to prevent and restore the impact of a dangerous event or condition. Nurse

preparedness in handling COVID-19 patients is a nurse who has the skills to prevent and control proper infection and nurses must also be updated regarding COVID-19 (Mahendradhata et al., 2021).

The preparedness of nurses to handle COVID-19 patients in hospitals can also be influenced by knowledge, education, age and length of work. Nurses are required to always be alert in any condition and provide the best service even though they are under threat of contracting the virus. Nurses are faced with stressful situations both from work, family and social environment. While working nurses are required to be careful and provide the best possible care. In the family, nurses are required not to transmit the virus to other family members. While in the social environment nurses are stigmatized as bad for fear of transmitting the COVID-19 virus to the surrounding community. This makes nurses' preparedness increase (Watt et al., 2021).

Therefore, the importance of preparedness for nurses who are the frontline in handling COVID-19 patients. The author is interested in conducting research on factors related to nurse preparedness in dealing with COVID-19 patients in the Emergency Room.

METHOD

This research method uses quantitative methods with Descriptive Correlation analysis, which is research directed at explaining the relationship between two independent variables and the dependent variable. The research sample amounted to 30 nurses with a *cross sectional* approach. *The* instrument used a questionnaire. The data analysis performed

was univariate analysis and bivariate analysis using *Chai-Square*.

RESULTS AND DISCUSSION

Table 1 Distribution of Respondents Based on Education, Age, and Length of Service.

Category	F	%
Education		
Ners	13	**43.3**
D3	17	**56.7**
Total	30	**100.0**
Age		
≥ 40 years	3	**10.0**
≤ 40 years	27	**90.0**
Total	30	**100.0**
Length of Service		
≥ 3 years	26	**86.7**
≤ 3 years	4	**13.3**
Total	30	**100.0**

Based on Table 1 shows that the majority of nurses' education is D3 with a frequency of 17 people (56.7%) while the minority is Ners with a frequency of 13 people (43.3%), the majority of nurses' age is ≤ 40 years with a frequency of 27 people (90.0%) while the minority of age ≥ 40 years with a frequency of 3 people (10.0%), the length of work of nurses is mostly Old (≥3 years) with a frequency of 26 people (86.7%) while the minority is New (≤ 3 years) with a frequency of 4 people (13.3%).

Table 2 Frequency Distribution of nurses' knowledge about nurses' preparedness in handling COVID-19 patients

Knowledge Category	F	%
Good	26	**86.7**
Less	4	**13.3**
Total	30	**100.0**
Nurse preparedness		
Ready	24	**80.0**
Not Ready	6	**20.0**
Total	30	**100.0**

Table 2 shows that nurses' knowledge is good with a frequency of 26 people (86.7%) while nurses' knowledge is lacking with a frequency of 4 people (13.3%). Nurse preparedness with a ready category with a frequency of 24 people (80.0%) while the category was not ready with a frequency of 6 people (20.0%).

Table 3 Relationship between Knowledge Factors and Nurse Preparedness in handling COVID-19 patients

Knowledge	Nurse Preparedness				Total		'-Value
	Ready		Not Ready		F	%	
	F	%	F	%			
Good	23	88.5	3	11.5	26	86.7	
Less	1	25.0	3	75.0	4	13.3	0.018
Total	24	80.0	6	20.0	30	100	

Table 3 shows that the results of the *Pearson Chai-Square* test of the Relationship between Knowledge Factors and Nurse Preparedness obtained OR value = 23,000 and p value = 0.005 (<0.05) meaning that there is a relationship between knowledge factors and Nurse Preparedness with a relationship of (r = 475).

Table 4 Relationship between Educational Factors and Nurse Preparedness in handling COVID-19 patients

Education	Nurse Preparedness				Total		P-Value
	Ready		Not Ready		F	%	
	F	%	F	%			
Ners	13	100.0	0	00.0	26	43.3	
D3	11	64.7	6	35.3	4	56.7	0.024
Total	24	80.0	6	20.0	30	100	

Table 4 shows that the results of the *Pearson Chai-Square* test of the relationship between educational factors and nurse preparedness obtained OR value = 1.545 and p value = 0.024 (<0.05) means that there is a relationship between education and nurse preparedness with a relationship of (r = 401).

Table 5 Relationship between Age Factor and Nurse Preparedness in handling COVID-19 patients

Age	Nurse Preparedness				Total		P-Value
	Ready		Not Ready		F	%	
	F	%	F	%			
≥ 40	0	0.0	3	100	3	10.0	
≤ 40	24	88.9	3	11.1	27	90.0	
Total	24	80.0	6	20.0	30	100	0.005

Table 5 shows that the results of the *Pearson Chai-Square* test of the relationship between the age factor and nurse preparedness obtained an OR value = 9,000 and a p value = 0.005 (<0.05), meaning that there is a relationship between age and nurse preparedness with a relationship of (r = 555).

Table 6 Relationship between the Length of Service Factor and Nurse Preparedness in handling COVID-19 patients

Length of Service	Nurse Preparedness				Total		P Value
	Ready		Not Ready		F	%	
	F	%	F	%			
Lama	23	88.5	3	11.5	26	86.7	
New	1	25.0	3	75.0	4	13.3	
Total	24	80.0	6	20.0	30	100	0,018

Table 6 shows that the results of the *Pearson Chai-Square* test of the relationship between the length of work factor and nurse preparedness obtained an OR value = 23,000 and a p value = 0.018 (<0.05), meaning that there is a relationship between length of work and nurse preparedness with a relationship of (r = 475).

1. Knowledge

Univariate analysis results showed that nurses' knowledge was good with a frequency of 26 people (86.7%) while nurses' knowledge was lacking with a frequency of 4 people (13.3%). Good

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knowledge about nurses' preparedness in handling COVID-19 patients must be possessed by nurses. This is because positive cases of COVID-19 will always exist until now, therefore nurses must always be prepared in any condition. As explained (Zhang et al., 2020). Knowledge is a prerequisite for building preventive beliefs, forming positive attitudes, and promoting positive behaviors, and individuals' cognitions and attitudes towards illness affect the effectiveness of their coping strategies and behaviors to a certain extent, the greater the knowledge of health workers, the more confident they can beat the virus.

This study is in line with the research of Rosmalasari Sihombing 2020 which shows that of the 87 respondents (100%) nurses obtained good knowledge as many as 79 people (90.8%) and poor knowledge as many as 8 people (9.2%). This is related to nurses being required to always *up date their* knowledge, through seminars and training, so that the average nurse has good knowledge.

2. Education, Age and Length of Service

The results of Univariate Analysis showed that the majority of nurse education was D3 with a frequency of 17 people (56.7%) while the minority was Ners with a frequency of 13 people (43.3%). Education is the overall situation experienced in life that is able to provide influence for growth for individuals (Mudyahardjo, 2014). In addition, education is also the most important factor in determining a person's work and education can also influence a person's knowledge in determining work ability (Handoko et al., 2009).

This is in line with the results of research Hasanah, 2015 which shows

that nurse preparedness can be influenced by several things, such as education, nurses who get education and training can affect their performance in providing nursing services to patients with COVID-19. The results showed that out of 56 total respondents who had good education and training, the performance of these nurses was also categorized as good with 28 respondents (50%).

The results of Univariate Analysis of Age show that the majority of nurses age ≤ 40 years with a frequency of 27 people (90.0%) while the minority age ≥ 40 years with a frequency of 3 people (10.0%). According to (Budiman, 2013) which states that age affects a person's power of capture and mindset. With the increase in a person's age, it causes the development of his or her capturing power and mindset so that the knowledge gained increases as well. However, according to research (Agustin, 2013) which states that productive age is an adult age that is active in activities so that it supports learning and remembering the information obtained, but at certain ages or towards old age the ability to accept or remember a knowledge will decrease.

The results of research (Eriksen et al., 2013) suggest that the age range of 25-45 years is the developmental stage of generality vs stagnation, meaning that nurses have more ideas, the desire to increase knowledge and creativity. In addition, nurses at that age generally have a sense of responsibility, are able to show maturity in thinking, are able to think rationally and can solve problems alertly.

The results of the Univariate Analysis showed that the majority of nurses worked for a long time (≥3 years) with a frequency of 26 people (86.7%)

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while the minority was new (≤ 3 years) with a frequency of 4 people (13.3%). The working period is strongly related to both positive and negative performance, it will have a positive influence on performance if the longer the working period, the more experienced the workforce will be in carrying out their work.

Length of service has an influence on nurse preparedness. This is because the length of work of nurses covers three important aspects, the first is employee eligibility which is a criterion concerning how the condition of nurses, the second is individual characteristics concerning seniority and juniority, the assumption that often applies and is believed is that employees who are senior enough are considered to have high performance, while juniors still need to be developed and fostered again, the third is the quality of employee performance seen from one's productivity and work discipline, so that it can provide information on nurses' work abilities, interests and talents.

The results of the study (Aminudin, 2013) show that the increasing length of work can lead to higher nurse preparedness. The need for perseverance in work in the nursing field related to length of work so as to achieve achievements and have a positive impact on increasing nurse preparedness.

3. Nurse Preparedness

Results of Univariate Analysis The preparedness of nurses in the Ready category was 24 people (80.0%) and the Unready category was 6 people (20.0%). In dealing with COVID-19 patients, adequate treatment is needed for recovery and to reduce the spread of the disease. In this case nurses have an important role in the preparedness to handle COVID-19 patients.

Nurses are required to always be alert in any condition and provide the best service even in a situation that is threatened to contract the virus. Nurses are faced with stressful situations both from work, family and social environment. When working nurses are required to be careful and provide the best possible care. In the family, nurses are required not to transmit the virus to other family members. While in the social environment nurses are stigmatized as bad for fear of transmitting the COVID-19 virus to the surrounding community. This makes nurses' preparedness increase (Lapostolle et al., 2020).

Occupational fatigue is one of the sources of problems for worker health and safety. Fatigue can reduce performance and increase the level of work errors that will have the opportunity to cause work accidents. Of course this cannot be ignored, because labor is a company asset that can affect company productivity (Medianto, 2017). Therefore, nurses must maintain their health so as not to experience fatigue while working.

The results of research conducted by Malau and Eliska prove that the fatigue that occurs in a small volunteer team does not experience fatigue where the highest argument is the complete use of PPE in many procedures and discomfort when using PPE and it really feels tired coupled with the hot weather environment. So that the factors that cause fatigue in the volunteer team are age, gender, work period, work shift, physical environment, length of PPE use.

Research results (Azalita et al 2021) show that as many as 51 nurses (86.4%) with nurses caring for COVID-19 patients are in the Alert category and

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8 nurses (13.6%) are in the Not Alert category.

4. Relationship between Knowledge and Nurse Preparedness

Based on the results of research using the pearson chai-square statistical test, the p-value = 0.018 (<0.05) means that there is a significant relationship between knowledge and nurse preparedness with a relationship of (r = 475). The knowledge needed in preparedness according to Veenema (2007) is to create and update disaster plans, environmental risk assessment, conduct natural and non-natural disaster prevention activities, community education programs, training programs and disaster simulations. Nurses who have had previous experience in handling COVID-19 patients certainly have good knowledge because they have experienced the same thing before.

5. Relationship between Education and Nurse Preparedness

Based on the results of the study using the pearson chai-square statistical test, the sig p-value = 0.024 (<0.05) means that there is a significant relationship between education and nurse preparedness with a relationship of (r = 401). Education and training is one of the most important parts of staff development (Marquis & Huston, 2009). Education and training attended by nurses is expected to improve the ability of a nurse both in knowledge, skills and attitudes (Notoatmodjo, 2012). Nurses who take part in education and training can improve their performance in providing nursing services to patients. This opinion is supported by Bernardin (2007) who states that education and training is an effort to develop staff performance in work or related to their work.

In line with the research of Putra et al. (2011) which shows that nursing diploma graduates have a moderate level of ability, while undergraduate nurses have a higher level of disaster preparedness (p = 0.002).This is in line with the opinion of Ahayalimudin & Osman (2016) that higher levels of education can support nurse preparedness because it can make information easier to receive.

6. Relationship between Age and Nurse Preparedness

Based on the results of research using the pearson chai-square statistical test, the sig p-value = 0.005 (<0.05) means that there is a significant relationship between age and nurse preparedness with a relationship of (r = 555). The more age, the level of maturity of a person will be more mature in thinking and working. The increase in a person's age can affect the increase in knowledge he acquires, but at a certain age or towards old age the ability to accept or remember a knowledge will decrease. According to Notoatmodjo (2003), age is a variable that is always considered in epidemiological research studies which is one of the things that affects knowledge.

7. Relationship between Length of Service and Nurse Preparedness

Based on the results of research using the pearson chai-square statistical test, the sig p-value = 0.018 (<0.05) means that there is a significant relationship between length of work and nurse preparedness with a relationship of (r = 475). Length of work can affect performance both positively and negatively. It will have a positive effect on performance if the longer the working period, the more experienced the workforce is in carrying out their duties. Conversely, it will have a negative

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influence if with the longer the working period, there will be losses in work. Length of work and a greater level of knowledge allow a person to be more productive when compared to those who are relatively lacking in gaining work experience.

Length of work affects nurse preparedness, this is because nurses who have worked for a long time contribute to determining performance in nurses carrying out their duties. The longer a person works, the more skillful and faster he is in completing the task (Farida, 2011).

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of research that has been conducted on the factors associated with nurse preparedness in handling COVID-19 patients in the emergency room, it can be concluded as follows:
1. There is a significant relationship between knowledge and Nurse Preparedness (p-value 0.018)
2. There is a significant relationship between education and Nurse Preparedness (p-value 0.024)
3. There is a significant relationship between age and Nurse Preparedness (p-value 0.005)
4. There is a significant relationship between Length of Service and Nurse Preparedness (p-value 0.018).
5. Nurse Preparedness The majority fell into the ready category with a frequency of 24 people (80.0%) while the category was not ready with a frequency of 6 people (20.0%).

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