



## Nurse Anxiety of Handling Patient Covid-19 in Emergency Department

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### ABSTRACT

Coronavirus or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a virus that attacks the respiratory system. Coronavirus can cause mild disorders of the respiratory system, severe lung infections, and even death. This study aims to determine the relationship between knowledge, workload, an increasing number of patients, risk of exposure and infrastructure with nurses' anxiety. This study used an analytic observational design with a cross-sectional approach. The sample is 61 nurses, the sampling technique uses Total Sampling, and the analysis uses the Spearman Rank test, Pearson correlation. The results of this study indicate that there is a relationship between knowledge ( $p = .002$ ,  $r = -.389$ ), workload ( $p\text{-value} = .047$ ,  $r = .256$ ), an increase in the number of patients ( $p\text{-value} = .009$ ,  $r = .333$ ), risk exposure ( $p\text{-value} = .048$ ,  $r = -.254$ ), and infrastructure ( $p\text{-value} = .040$ ,  $r = -.264$ ) with anxiety. There is a significant relationship between knowledge, workload, an increasing number of patients, risk of exposure, and facilities and infrastructure with anxiety. The hospital needs to prepare adequate infrastructure and facilities for medical personnel who are on the front line, especially related to personal protective equipment.

#### Kata kunci:

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### ABSTRAK

Virus Corona atau severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) merupakan virus yang menyerang sistem pernapasan. Virus Corona bisa menyebabkan gangguan ringan pada sistem pernapasan, infeksi paru-paru yang berat, hingga kematian. Penelitian ini bertujuan untuk mengetahui hubungan pengetahuan, beban kerja, peningkatan jumlah pasien, resiko paparan dan sarana prasarana dengan kecemasan perawat. Penelitian ini menggunakan desain observasional analitik dengan pendekatan cross sectional. Sampel sebanyak 61 orang perawat, tehnik sampling menggunakan Total Sampling, dan analisis menggunakan uji Spearman Rank, korelasi pearson. Hasil penelitian ini menunjukkan adanya hubungan antara pengetahuan ( $p = .002$ ,  $r = -.389$ ), beban kerja ( $p\text{ value} = .047$ ,  $r = .256$ ), peningkatan jumlah pasien ( $p\text{ value} = .009$ ,  $r = .333$ ), resiko paparan ( $p\text{ value} = .048$ ,  $r = -.254$ ), dan sarana prasarana ( $p\text{ value} = .040$ ,  $r = -.264$ ) dengan kecemasan. Terdapat hubungan signifikan antara Pengetahuan, beban kerja, peningkatan jumlah pasien, resiko paparan, dan sarana dan prasarana dengan Kecemasan. pihak rumah sakit perlu mempersiapkan sarana dan prasarana yang memadai buat tenaga medis yang berada di garda terdepan terutama terkait dengan alat pelindung diri.

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### INTRODUCTION

Corona virus 2 (SARS-CoV-2) is a virus that attacks the respiratory system. Corona virus can cause mild disorders of the respiratory system, severe lung infections, and even

death (Rothan et al, 2020). The World Health Organization (WHO) has designated COVID-19 as a pandemic because of its high and fast rate of spread. (European Center for Disease Prevention and Control, 2020). In Indonesia, on August 3, 2021, there was an increase of 3.496.700 cases, of which

2.873.669 patients recovered and 98.889 died (SATGASCOVID 19, 2019). The emergency department is the foremost service for COVID-19 patients, in the ER it must provide initial screening services in accordance with COVID-19 guidelines. Important components in the emergency room in dealing with COVID-19 patients are: the availability of adequate human resources, the availability of medical equipment, medical materials, medicines, personal protective equipment, the availability of rooms and beds that have adequate functions and requirements to anticipate occurrences. increase in patients in the ED (Wibawa et al., 2020). The increasing need for services for COVID-19 patients causes an increase in the workload as well as anxiety for nurses in the emergency department (Chen et al, 2019).

Anxiety is a state of fear that is not clearly felt by a person with feelings of uncertainty and helplessness. This causes panic and fear, while in the mental or cognitive aspects, namely the emergence of disturbances in attention, worry, irregularity in thinking, and feeling confused (Pamungkas, 2018). Such conditions cause an increase in nurse anxiety in the emergency room which will have an impact on service quality (Fajrillah & Nurfitriani, 2016). Research by Chen et al., (2020) said that there was a level of anxiety in the face of the COVID-19 pandemic because it was caused by a feeling of fear of being infected. The results of research by FIK-UI and IPKJI (2020) that the response that most often appears in nurses is feelings of anxiety and tension as much as 70%. The high anxiety in nurses can have a negative impact on nurses in providing services.

The role of emergency nurses is based on function, namely providing nursing care and collaboration between professions (Handayani & Sofyannur, 2018). In conditions of the COVID-19 pandemic, health workers continue to provide direct services to COVID-19 patients with a feeling of worry that they will be infected, causing anxiety (Nemati et al., 2020). In line with this, research by Xie et al., (2020) found that nursing services during a pandemic have always been a concern for nurses because of the limited availability of personal protective equipment.

Emergency nurses experience anxiety due to limited personal protective equipment, an increase in patients, worries about being infected by the COVID-19 virus, and high work demands. The phenomenon of increasing nurse anxiety in the ER and several factors that influence one of the nursing service problems that need to be studied more deeply. From this background, the researchers wanted to know what factors influence nurses' anxiety in dealing with COVID-19 patients in the ER. The purpose of this study was to analyze the factors associated with nurses' anxiety in dealing with COVID-19 patients in the hospital's emergency department.

## METHOD

### *Characteristics of participants and research design*

Characteristics of respondents in this study were nurses who worked in the Emergency Room at 3 Hospitals in the Malang City area. This research uses analytic observational with cross sectional design approach.

### *Sampling procedure*

Data collection was carried out using a questionnaire filled out online using a google form. The questionnaire link is sent to the head of the Emergency Room and then forwarded to the members who work in the room. At the beginning, before filling out the questionnaire, the researcher explained in advance the aims and objectives of the study. After the respondent understands and is willing to participate, the respondent can immediately fill out the questionnaire link in the form of the google form. Sampling was carried out in the Emergency Room at the Malang City Hospital in October – November 2021. This research has obtained ethical feasibility from the Health Research Ethics Committee, Faculty of Medicine, Universitas Brawijaya No. 290/EC/KEPK/10/2021, and research permits from 3 hospitals in the Malang city area.

### *Sample size, power and precision*

The population in this study were all nurses who worked in the Emergency Room at 3 hospitals in the city of Malang. The sampling technique used total sampling with the number of nurses as many as 61 people. The research questionnaire for nurses' anxiety used the Hamilton anxiety rating scale (1959) and modified by Kautsar 2015. There are thirteen questions in the anxiety questionnaire. A thirteen-question nurse knowledge questionnaire (Winarti 2020), a thirteen-question workload (Nursalam 2017), an increase in the number of patients with three questions, an exposure risk of fourteen questions (WHO 2020) and a ten-question infrastructure facility (an instrument from the Health Sector Self-Assessment Tool). for Disaster Risk Reduction developed by WHO (2010).

Questions about nurses' anxiety focused on feelings of anxiety, tension, sleep disturbances, impaired intelligence, feelings of depression, somatic symptoms, sensory symptoms, cardiovascular symptoms, respiratory symptoms, and autonomic symptoms; and behavior. The cause of nurse anxiety is due to several factors ranging from an increase in the number of patients in the room, limited infrastructure and an increased workload. The risk of exposure that continues to occur, especially for health workers, causes officers who provide services to COVID-19 patients to feel anxious, will be infected and infect their families at home.

### *Size and covariates*

The method used for data collection is by creating a questionnaire link using google form. The assessment for the anxiety questionnaire uses the Guttman scale, namely (1 = Yes and 0 = No). knowledge using the guttman scale (1 = true and 0 = false). workload using a 4-point Likert scale (1 = heavy workload, 2 = moderate workload, 3 = light workload, and 4 = no workload). An increasing number of patients used the Guttman scale (1=Yes and 0=No). Exposure risk using a Likert scale (1 = No, 2 = sometimes 20% to below 50%, 3 = often 50% or more but not 100%, and 4 = always as recommended). Facilities and infrastructure use a Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree). The research questionnaire from the increase in the number of patients was declared valid and reliable with the results of the Pearson product moment validity test (0.753) > r table (0.497) and the reliability measurement results with Cronbach Alpha 0.712.

**Data analysis**

Respondent characteristics were analyzed using descriptive statistics. For the variables of knowledge,

workload, increasing number of patients, infrastructure and nurses' anxiety using the spearman rank test. As for the risk of exposure using the pearson correlation test. The significance level for the analysis was set at 0.05.

**RESULTS AND DISCUSSION**

**Table1**  
**Characteristics of Respondents Based on Demographic Data**

Characteristics	Frequency (N)	Percent (100%)
Age	10	16.4%
<25 years	47	77.0%
26-35 years	4	6.6%
36-40 years	0	0%
>45 years		
Gender		
Male	38	62.3%
Female	23	37.7%
Education		
D3: Diploma	28	45.9%
S1: Bachelor (nurse profession)	33	54.1%
S2: Magister	0	0%
Instance origin	22	36.1%
General Hospital of Malang City	27	44.3%
Hospital Wava Husada Malang	12	19.7%
Hospital Muhammadiyah Malang		
Marital status		
Married	43	70.5%
Unmarried	18	29.5%
Years of Work Period		
< 1 years	5	8.2%
2-5 years	18	29.5%
6-10 years	25	41.0%
> 10 years	13	21.3%
Experience Participating in Training Facing Outbreaks.		
Never	39	63.9%
Ever	22	36.1%
Participation in the Non-Natural Disaster Response Phase.		65.6%
Never	40	34.4%
Ever	21	

Based on the analysis in table 1, it can be interpreted that most of them are male, with an age range of 26-35 years, 6-10 years of work, the majority are married, the education of most respondents is S1 Nurses. Most of the agencies came from Wava Husada Hospital. Most of them did not

participate in the training in the face of epidemic disasters, while the experience of participating in the non-natural disaster response (plague) phase was mostly not involved in the response phase.

**Table 2**  
**Descriptive statistical variables of knowledge, increasing number of patients, risk of exposure, infrastructure and anxiety**

Variable	Mean ± SD	Min	Max	CI 95%
Knowledge	11.95 ± .644	10	13	11.79 - 12.12
Workload	30.77 ± 2.831	25	39	30.05 - 31.50
Increased Number of Patients	1.75 ± .650	1	3	1.59 -1.92
Exposure risk	85.85 ± 3.953	77	92	84.84 - 86.86
Facilities and infrastructure	32.48 ± 4.011	21	40	31.45 - 33.50
Anxiety	12.51 ± .504	12	13	12.38 - 12.64

Table 2 shows the average respondent's knowledge score = 11.95 (SD = .644), workload score with a mean value of 30.77 (SD = 2.831), an increase in COVID-19 patients in the emergency department.

has a mean value of 1.75 (SD = .650), the risk of exposure to COVID-19 has a mean value of 85.85 (SD = 3.953), Facilities and infrastructure have a mean value of 32.48 (SD = 4.011). Anxiety had a mean value of 12.51 (SD = .504).

**Table 3**  
**Analysis of relation that affect nurses' anxiety in dealing with COVID-19 patients in the Emergency Room**

Variable	N	anxiety	
		P value	R
Knowledge	61	.002	-.389**
Workload	61	.047	.256*
Increased Number of Patients	61	.009	.333**
Exposure risk	61	.048	-.254*
Facilities and infrastructure	61	.040	-.264*

Based on the analysis in table 3, there is a relation between knowledge and anxiety (p value = .002, r = -.389), workload and anxiety (p value = .047, r = .256), an increase in the number of patients with anxiety (p value = .009, r = .333), risk of exposure with anxiety (p value = .048, r = -.254), and infrastructure with anxiety (p value = .040, r = -.264).

## DISCUSSION

Knowledge is the basis for what someone does, so that it can stimulate someone to do something. In this study, there was a relation between knowledge and nurses' anxiety in dealing with COVID-19 patients in the emergency department of a hospital in the Malang city area.

The results of this study are in line with his research Cag *et al* (2020) reported that lack of knowledge about COVID-19 (p=0.005) can affect the increase in anxiety in health workers who provide services to COVID-19 patients directly

Alqahtani's research, (2017) which revealed that good knowledge and positive attitudes among health workers towards COVID-19 can reduce the prevalence of infection and reduce anxiety.

The main focus of increasing knowledge is to ensure that adequate and reliable information is conveyed to health workers through sites such as WHO, Ministry of Health and credible social media (Cag *et al.*, 2020). Anxiety can be caused by various factors, one of which is lack of knowledge (Suwandi & Malinti, 2020). That is why with sufficient knowledge, anxiety can be reduced and of course the negative effects of anxiety itself (Jarnawi, 2020).

This study shows that there is a relation between workload and nurse anxiety in dealing with COVID-19 patients in the emergency department of a hospital in the Malang city area. This result is in line with the research of Chen *et al.*, (2021) which stated that the level of moderate/severe anxiety was significantly higher in those who experienced an increase in workload. Research by Haryanti *et al.*, (2013) stated that the workload greatly affects the anxiety of nurses. The heavy workload in dealing with the COVID-19 pandemic in hospitals can cause anxiety for nurses because nurses as the front line are in an intense state, constantly under pressure, and on the physical and mental threshold in providing services to patients (Ruilin. Li *et al.*, 2020). The workload of nurses is the volume of work of nurses in a hospital unit, while the work volume of nurses is the time needed to treat patients per day. It is important to know the workload as the basis for knowing the work capacity of nurses so that there is a balance between nursing staff and workload. Excessive workload affects nurses in emotional terms, moreover the level of anxiety is also due to seeing COVID-19 patients who have been given maximum nursing care leading to death (Purba 2015; Musta'in, *et al.*, 2021)

This study shows that there is a relationship between an increase in the number of patients and nurses' anxiety in dealing with COVID-19 patients in the emergency department of a hospital in the Malang city area. These results are in line with research (Musta'in, *et al* (2021) which states that most nurses experience anxiety during the COVID-19 pandemic due to the increase in patients so that nurses spend extra energy in providing nursing care to patients. Anxiety that occurs in health workers can be affected because one of them is the increasing number of patients and health services are constantly changing along with the development of information about COVID-19 (IASC, 2020).The increase in the large number of patients who come to the hospital due to the COVID-19 condition, makes the frontline nurses anxious. in a Wuhan hospital, even nurses in the infection department in the emergency department asked to be transferred, because they were worried about the threat of COVID-19 (Ruilin. Li *et al.*, 2020).

This study shows that there is a relation between the risk of exposure and the anxiety of nurses in dealing with COVID-19 patients in the emergency department of a hospital in the Malang city area. This result is in line with the research of Lai *et al.*, (2020) which stated that front-line nurses caring for patients with COVID-19 are most likely to be exposed to the highest risk of infection due to their proximity to COVID-19 patients, frequent contact with patients, and working hours. which is longer than usual. In addition, in the early stages of the COVID-19 epidemic, nurses may be poorly warned about exposure or provided with adequate protection. So special attention is related to the mental health of women and nurses who care for patients with COVID-19. Research from Zheng *et al.*, (2021) states that health workers who are in direct contact with COVID-19 patients are considered to have a high risk of exposure to the virus so they are more likely to experience anxiety.

Working as a front-line health worker with direct involvement in dealing with COVID-19 patients is a high risk factor for exposure to COVID-19, so health workers tend to be anxious because special attention is needed (Lai *et al.*, 2020). The risk of life-threatening exposure to the COVID-19 virus is a significant challenge for health workers, during the outbreak the rapid transmission of the virus and high mortality rates are likely to have affected the anxiety of health workers (Cag *et al.*, 2020). Research from Chen *et al.*, (2021) states that anxiety that occurs in health workers is more likely to occur due to exposure to the risk of COVID-19 infection.

This study shows that there is a relation between facilities and infrastructure and nurses' anxiety in dealing with COVID-19 patients in the emergency department of a hospital in the Malang city area. This result is in linewith the research of Chen *et al.*, (2021) stated that health services should provide managers with access to comprehensive information about the COVID-19 pandemic and pay more attention to the protection of health care staff working on the front lines, such as providing adequate personal



protective equipment (PPE). and supporting room facilities. One of the factors that increase anxiety in dealing with the COVID-19 pandemic is the lack of personal protective equipment, lack of access to COVID-19 test laboratories, and lack of accurate information about COVID-19 disease (Shanafelt et al., 2020).

Research by Fadli et al., (2020) stated that during the COVID-19 pandemic, health workers experienced anxiety in carrying out their duties as frontline health workers due to the limited availability of PPE when handling patients. The facilities provided by the hospital include inadequate personal protective equipment for nurses who work in the hospital environment, they are a group that is very vulnerable to being infected with Covid-19 because they are at the forefront of handling cases, therefore they must provide complete personal protective equipment. according to the WHO protocol so that the anxiety experienced is reduced (Maben & Bridges, 2020).

The results of a study by Zheng et al., (2021) stated that some nurses who treat COVID-19 patients do not experience anxiety due to the fact that hospitals provide a number of high-quality facilities for nurses in China. According to the Directorate of Health Services, one of the rules for health workers to protect themselves during the current pandemic is to comply with the rules for preventing and controlling COVID-19 infection by using complete but not complete personal protective equipment. The accuracy of the PPE used must be PPE that is in accordance with the level of risk in the workplace.

The results of the study by Dian Asriyani & Sriningsi, (2021) stated that there was a significant relation between the use of personal protective equipment against anxiety with an OR value of 0.43. The higher the level of anxiety, the 0.43 times decreased prevention of transmission, in other words, the more anxious the person will be in the use of PPE even though it is in accordance with the directives. lack of personal protective equipment among health workers who work is significantly closely related to higher anxiety with p value = 0.019 (Savitsky et al., 2020). For health workers due to insufficient personal protective equipment or the scarcity and pattern of reuse of personal protective equipment (PPE) Reasons designed for single use (Adlei et al., 2021; Kea et al., 2021; Tasnim et al., 2021; Casafont et al., 2020)

#### LIMITATION OF THE STUDY

The main limitation of this study is that gender, age, and marital status were not included in our variables. This study also has a small sample size. Because it does not use a random sample. Our data were collected cross-sectionally, limiting our ability to examine causal relationships between study variables and anxiety levels, with prospective studies needed to explore the association between the COVID-19 pandemic and anxiety levels among groups of health care workers with different levels of risk. In a cross-sectional design, I cannot explain or comment on potential changes in anxiety levels over time.

#### CONCLUSION AND SUGESTION

There is a relation between knowledge, workload, increasing number of patients, risk of exposure, infrastructure and anxiety. In addition, hospitals are

encouraged to carry out educational campaigns targeting health workers to increase their knowledge and awareness about COVID-19. This action is a very important step to minimize staff anxiety levels in the face of the COVID-19 pandemic, and more interventions are needed to increase the knowledge of health workers and reassure them with the efficiency of appropriate infection prevention and control measures and provide a safe environment.

#### ETHICAL CONSIDERATIONS

This research was conducted in accordance with research ethical standards and all research protocols have received ethical approval from the research ethics committee of the Faculty of Medicine, Brawijaya University with No. 290/EC/KEPK/10/2021.

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#### Conflict of Interest Statement

The author has no conflicts of interest to declare.

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