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RESEARCH ARTICLE

Psychological Conditions among Nurses in Caring for the COVID-19 Patients: A Study from Referral Hospitals of Aceh, Indonesia

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Abstract:

Introduction:

Nurses as frontline health care providers during the COVID-19 pandemic were at high risk and vulnerable to virus infection. Physical and mental conditions in caring for COVID-19 patients in hospitals may be associated with the exacerbation of the nurses experiencing depression, anxiety, and stress among the nurses.

Objective:

The study aimed to identify the psychological conditions (depression, anxiety, and stress) among nurses providing clinical assistance in caring for COVID-19 patients.

Methods:

This investigation employed a comparative study with a cross-sectional study design. The respondents were 109 nurses working in the COVID-19 wards in two referral hospitals offering care for COVID-19 patients. Data were collected using the standardized DASS-21 questionnaire and analyzed using the Mann-Whitney U-test.

Results:

The results showed psychological conditions among nurses caring for COVID-19 patients with depression (moderate) among 60.0% and 58.8%, anxiety (severe) at 60.0% and 58.8%, and stress levels (mild) at 56% and 52.9% for hospital A and B, respectively. The study also found no significant difference in depression ($p=0.890$), anxiety ($p=0.846$), and stress levels ($p=0.806$, $\alpha=0.05$) between the nurses in the COVID-19 wards of the two hospitals.

Conclusion:

The demographic data of nurses, such as age, education level, working experience, hospital facilities, attended workshops/training on the use of personal protective equipment (PPE)/Hazmat, and management of COVID-19 patients might contribute to psychological conditions (depression, anxiety, and stress) among nurses in caring for the COVID-19 patients.

Keywords: Depression, Anxiety, Stress, Nurses, Hospital, COVID-19.

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1. INTRODUCTION

COVID-19 is a new type of Coronavirus that causes a physical impact and could affect one's mental health [1]. World Health Organization (WHO) declared the COVID-19 outbreak a global pandemic. The number of global cases of COVID-19 reached 216 million, with 4.50 million death cases [2].

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Health workers, including nurses, are the front liners in health services in emergency response, and the largest healthcare providers, have a high risk of contracting COVID-19 [3]. Data from China's National Health Commission showed more than 3,300 health workers had been infected in March 2020, and by the end of February, 22 health workers had died. In Italy, the infected health workers were 2,689 (8% of the cases) [4]. Meanwhile, in Indonesia until July 2021, 1254 health workers died from COVID-19, including 458 doctors, 777 nurses, 46 dentists, 221 midwives, 11

pharmacists, eight medical record personnel, 33 medical laboratory technology experts, and 68 other health workers with other professional backgrounds [5]. Health workers experienced significant emotional stress due to long working hours, strict instructions, safety measures, the pressure to always concentrate and be alert, lack of social interaction, and workloads [4, 6, 7].

The COVID-19 pandemic impacted the physical, psychological, psychosocial, and spiritual conditions of the community worldwide [8]. The nurses faced tremendous pressure due to COVID-19, especially related to the high number of confirmed cases, high risk of infection, inadequate protection, lack of experience in handling the disease, longer working hours, negative feedback from patients, the stigma, and the lack of social support from the surrounding [9]. These factors increase the emergence of psychological problems in health workers, such as anxiety, stress, and insomnia, ultimately affecting work efficiency [10]. These psychological problems significantly impact health workers including nurses in caring for COVID-19 patients [11, 12].

The results of a study reported that the mental health of 1,257 workers caring for COVID-19 patients in 34 hospitals in China showed symptoms of stress (50%), anxiety (45%), insomnia (34%), and other psychological stress (71.5%) [13]. Another study stated that nurses who provided nursing care experienced various psychological disorders ranging from mild, moderate to severe such as anxiety, fear, stress, fatigue, insomnia, other mental disorders, psychosomatic, irritability, obsessive-compulsive, decreased appetite, feeling uncomfortable, helpless, crying, and even contemplating suicide. Thus, several problems faced by nurses in handling COVID-19 patients negatively impact the nurses' psychological conditions and health status in life [14].

The journey of more than two years of the COVID-19 pandemic, and millions of people being treated and dying worldwide, has required the readiness of nurses and policymakers in hospitals as referral centers to handle these patients. Also, the nurses are faced with a phenomenon and stigma that has an impact on their psychological health condition that affects their life. The study was conducted in two referral hospitals in Banda Aceh, Indonesia. One hospital is a district referral hospital and the rest of them are provincial referral hospitals to treat COVID-19 patients. The hospitals have adequate facilities following world health organization (WHO) protocols in caring for COVID-19 patients. Both hospitals have a special ward for handling the patients and also have adequate health workers including nurses to deal with COVID-19 patients.

2. METHODS

2.1. Study Design

This study employed a descriptive comparative study with a cross-sectional design, comparing the levels of depression, anxiety, and stress of nurses in the PINERE in two hospitals in Banda Aceh, Indonesia.

2.2. Population, Sample, and Setting

The population in this study were all the nurses working in the COVID-19 wards in both hospitals. The sampling technique used a total sampling of 109 respondents, of which 75 and 34 respondents were in hospitals A and B respectively. This study applied a medium effect size with a power of 0.08, a confidence level of 95% which is usually used in nursing research [14, 15]. The respondents were selected according to inclusion criteria: nurses who worked in the COVID-19 ward had experience in caring for COVID-19 patients and were not on leave/study assignments during the study was being conducted.

2.3. Measurement

The Depression Anxiety and Stress Scale (DASS 21) questionnaire consisting of 21 statements on a Likert scale with a 4-point scale was used in the study [15]. The instrument has been tested for reliability testing. The reliabilities for internal consistencies of the DASS-21 were estimated using Cronbach's alpha was 0.88 for the depression scale, 0.82 for the anxiety scale, 0.90 for the stress scale, and 0.93 for the total scale [15].

2.4. Ethical Considerations

This study has been approved by the Health Research Ethics Committee, Faculty of Medicine, Universitas Syiah Kuala, and the Regional General Hospital dr. Zainoel Abidin, Banda Aceh with the number 156/EA/FK-RSUDZA/2021.

2.5. Data Collection

Before conducting data collection, the researchers provide information, research objectives, and inform the respondents that they could be involved voluntarily and have to sign a written informed consent for this study. To increase the attraction of the participants in this study, the researchers involved the head of nurses in both the COVID-19 wards as a part of the research assistance in this study. All data are guaranteed confidentiality by providing anonymity and coding the data. Data has been collected in the period February 12 and March 15, 2021.

2.6. Data Analysis

Data were analyzed using univariate and bivariate analysis. The univariate analysis included the frequency, percentage, mean, and standard deviation, while the bivariate analysis was done by the Mann-Whitney U-test to compare two groups of PINERE ward nurses at the two hospitals.

3. RESULTS

3.1. Demographic data

The demographic data of nurses including age, gender, education, working experience, work unit/ward, workshops/training on using personal protective equipment/Hazmat, and management of COVID-19 patients are shown in Table 1.

Table 1. Demographic data of respondents (n=109).

Demographic Characteristics	Hospital A		Hospital B	
	f	%	f	%
Age (M±SD)	30.2±3.7	-	27.41±4.5	-
Gender	19	25.3	20	58.8
Male	56	74.7	14	41.2
Female				
Education	41	54.7	24	70.6
Diploma	34	45.4	10	29.4
Bachelor				
Working experience	26	34.7	9	26.5
<6 months	49	65.3	25	73.5
≥6 months				
Attended COVID-19 training	68	90.7	30	97.1
Yes	7	9.3	4	2.9
No				
Total	75	100	34	100

Table 1 shows that the gender of nurses caring for the COVID-19 patients at the PINERE in hospital A are predominantly female (74.7%), and nurses at hospital B are dominated by males (58.8%). The mean age and standard deviation (M±SD) of nurses at hospital A are 30.2±3.7, and at hospital B are 27.4±4.5. Concerning the latest education, the majority of nurses hold a Diploma in Nursing, 54.7% and 70.6% at hospital A and B, respectively. The study shows that more than 90% of nurses in both hospitals attended the COVID-19 training.

3.2. Psychological Conditions of Nurses

The psychological conditions of nurses in caring for COVID-19 patients are shown in Table 2.

Table 2. Psychological conditions of nurses in caring for COVID-19 patients (n=109).

Psychological Problems	Level Problems	Hospital A		Hospital B	
		f	%	f	%
Nurses' Depression	Normal	29	38.7	13	38.2
	Moderate	45	60.0	20	58.8
	Severe	1	1.3	1	2.9
Nurses' Anxiety	Normal	20	26.7	12	35.3
	Mild	9	12.0	1	2.9
	Severe	45	60.0	20	58.8
	Very Severe	1	1.3	1	2.9
Nurses' Stress	Normal	29	38.7	13	38.2
	Mild	42	56.0	18	52.9
	Moderate	3	4.0	2	5.9
	Severe	1	1.3	1	2.9
Total		75	100	34	100

Table 2 indicates that most nurses caring for COVID-19 patients experienced moderate depression (60.0% and 58.8% for hospitals A and B), more than half of nurses in hospitals A and B have severe anxiety, and mainly mild stress in hospitals A (56%) and B (52.9%), respectively.

Table 2 shows no significant difference in the level of depression, anxiety, and stress among nurses in caring for

COVID-19 patients between hospitals A and B with p=0.890, p=0.846, p=0.806 (α= 0.05) respectively (Table 3).

Table 3. Nurses' psychological conditions in caring for COVID-19 patients (n=109).

Psychological Conditions	Hospital	f	Mean Rank	p-value	α
Depression	Hospital A	75	54.76	0.890	0.05
	Hospital B	34	55.53		
Anxiety	Hospital A	75	55.35	0.846	
	Hospital B	34	54.24		
Stress	Hospital A	75	54.56	0.806	
	Hospital B	34	55.97		

4. DISCUSSION

The COVID-19 pandemic has become a significant reason for psychological disorders among people worldwide. The psychological disorders of nurses and other health workers even increase because of the heavy workload, especially for nurses caring for COVID-19 patients. Many case studies reported that during the COVID-19 pandemic, many nurses experienced psychological disorders, such as depression, anxiety, stress, and sleep disorders [16].

The Mann-Whitney U-Test conducted in this study reveals no difference in the level of depression among nurses in caring for COVID-19 patients in both hospitals (p=0.890). This study showed that more than half of nurses in both hospitals experienced moderate depression in caring for COVID-19 patients (60.0% and 58.8% for hospitals A and B, respectively). This finding is supported by the previous study stating that compared to the general population, front-line nurses experienced higher symptoms of psychological disorders, such as depression, anxiety, stress, and insomnia. The leading causes of psychological pressure experienced by nurses are heavy workload, fatigue, risk of infection, and life-threatening risks for their families [17, 18] Previous research evidence also reported that workload is a significant cause of physical and mental fatigue for nurses [19].

Furthermore, this study also reported the demographic data such as gender of nurses, dominated by females in hospitals A (74.7%) and more than one-third in hospitals B (41.2%) experiencing more psychological problems in caring for COVID-19 patients due to stress at work and plays an important role in caring for their family members. It is in line with a previous study finding that gender and working experience affect perceived psychological disorders, where women more often experience psychological disorders than men. This circumstance may be because female nurses have other responsibilities besides their careers, such as family and children, which are essential contributors to the negative impact on the psychological health of female nurses [20]. Working experience also affects research results. More working experience could be one of the reasons for lower psychological disorders. In this study, More than 60% of nurses in both hospitals had been working for more than six months, with 65.3% and 73.5% for hospitals A and B.

Based on this questionnaire results, 92.65% of nurses in

this study admitted “often” in the statement “*I feel worried about situations where I might panic and embarrass myself*,” and 45,78% of nurses also admitted “often” for the statement “*I feel panicky easily*.” This is in line with the study stating that workplace discomfort and the use of PPE for nurses would increase the fear of transmitting the virus to families, lowering work motivation and bringing negative emotions to nurses [6].

The nurses in both PINERE wards, on average, experienced a severe level of anxiety in caring for the COVID-19 patients, namely 60.0% and 58.8% for hospitals A and B respectively. In addition, the Mann-Whitney U-Test indicates no significant difference in the level of anxiety among nurses in both hospitals ($p=0.890$). The study result supported that the main causes of health workers experiencing anxiety are the demands of work, difficulty in getting social support due to the negative social stigma towards front-line workers, limiting movement PPE, lack of information about long-term exposure to infected people, and the fear of transmitting COVID-19 to friends and family because of their field of work [21].

This study also showed that most of those experiencing anxiety were female nurses (64.2%). This is in line with research showing that gender affects feelings of anxiety; women feel more anxiety than men. More women have higher anxiety, stress, and depression symptoms because they face more work burnout and family responsibilities, which are also a dilemma between working or living with family [17, 22].

Based on the questionnaire results, 17.5% of nurses caring for COVID-19 patients chose “often” for the statement “*I find it difficult to feel calm*”. This result is supported by a study, revealing that the health workers with the highest anxiety are nurses. The nurses are health workers who meet patients most frequently, increasing their risk of infection compared to other health workers [23]. It is also in line with [23], stating that most nurses feel moderate to severe levels of anxiety (54.88%) in caring for infected patients. Nurses attending COVID-19 patients mostly have anxiety and fear of being infected by the virus, transmitting the virus to family or close relatives, and being shunned by the social environment [24].

The stress level of nurses between Hospitals A and B in this study are not significantly different, as indicated by the Mann-Whitney U-Test ($p=0.846$). On average, around half of the nurses experienced mild stress levels in caring for COVID-19 patients. This finding aligns with a previous study that reported that nurses' stress in caring for COVID-19 patients was mild (51.8%). The Indonesian Government has established a new normal policy or adaptation of new habits for the community so that this condition may reduce the stress level of the community [25]. In addition, a study reported that less than 60% of health workers are dominated nurses who felt moderate or severe stress because there was still a fear of contracting and feeling uncomfortable when using personal protective equipment [26].

One of the main factors of stressfulness is the perception of COVID-19, showing that nurses perceive COVID-19 as negative and dangerous [27]. Another study, also pointed out that worry positively correlates with work stress. The more real

the anxiety experienced, the greater the pressure or level of stress [28]. This study showed more than half of nurses caring for COVID-19 patients chose “often” in the statement, “*I feel worried about situations where I might panic and embarrass myself*”. This finding agrees with the previous study, revealing that 90.1% of stressed health workers are worried about contracting the virus and will transmit the virus to their families and relatives due to caring for COVID-19 patients [28].

In addition, the challenges experienced by health workers in caring for COVID-19 patients include the lack of personal protective equipment (PPE)/Hazmat, unsanitary workplace conditions, and uncomfortable workplaces that will increase the fear of transmitting the virus to their families and relatives. This condition results in low work motivation and negative emotions in health workers [6]. This is in line with the finding of this study, showing that almost all nurses admitted “often” to the statement “*I cannot feel positive feelings at all*”. The study may explain that the nurses caring for the COVID-19 patients had higher negative emotions than those who did not. This is supported by a study explaining that negative emotions felt by health workers during a pandemic are related to the perception that COVID-19 is difficult to control and cure so health workers feel stressed [29].

On other hand, the result of the study also supported by the demographic data affects the level of stress felt by nurses. The mean age and standard deviation of the nurses were 30.2 ± 3.7 and 27.41 ± 4.5 in both hospitals respectively. The results of the study supported by a previous study explained that the older and the more mature a person, the higher the ability to carry out tasks. Individuals older will experience lower stress because their experience of dealing with stressors is better [30]. It is also in line with the working experience of nurses, showing that nurses with at least six months of working experience feel less stress (66.7%). They may already have more experience in caring for COVID-19 patients.

The education level of nurses in this study who cared for the COVID-19 patients and those who had received a bachelor's degree (45.4%) working in hospital A, and a diploma (70.6%) working in hospital B. A previous study argued that the higher the education, the more positive responses to the stresses experienced [31]. Also, most nurses in this study have participated in COVID-19 management training (92.7%). Hence, they have sufficient competencies to care for COVID-19 patients, reducing their stress when dealing with patients with infectious diseases, such as COVID-19.

5. LIMITATIONS

This research was conducted in the second year of the COVID-19 pandemic in Aceh Province, Indonesia. The psychological problems among nurses in both hospitals slightly decreased because they have had sufficient competencies and experience in caring for COVID-19 patients by attending several training programs in handling COVID-19 patients.

CONCLUSION

Depression, anxiety, and stress are common problems among nurses in caring for patients with infectious diseases,

such as COVID-19. The psychological problems of nurses during the COVID-19 pandemic significantly impact the nurses' health, safety, and welfare. This study found no significant difference in the levels of depression, anxiety, and stress among nurses who cared for COVID-19 patients in the hospitals. The demographic of nurses, such as age, education level, length of work, hospital facilities, attendance in workshops/training on the use of personal protective equipment (PPE)/Hazmat, and management of COVID-19 patients, may contribute to the study results. The results of this study are recommended to policymakers in hospitals to increase mental health and psychosocial support to the nurses during the pandemic and improve the competencies of nurses in handling COVID-19 patients through continuous education and training. The researchers also suggest identifying the most dominant factors related to the psychological conditions of nurses who care for COVID-19 patients for further study.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study has been approved by the Health Research Ethics Committee, Faculty of Medicine, Universitas Syiah Kuala, and the Regional General Hospital dr. Zainoel Abidin, Banda Aceh with the number 156/EA/FK-RSUDZA/2021.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and research committees and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The data and supportive information is available within the article.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest in the study.

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