Babali Nursing Research
2024, Vol. 5, No. 2, 240-252
https://doi.org/10.37363/bnr.2024.52354

Original Research

Psychological Condition of Nurses in the Aftermath of COVID-19 - Indonesian Nurses' Perspective

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Article Info

Article history:
Received:
12 January 2024
Accepted:
15 April 2024

Keywords:
COVID-19, Nurse, Psychological-condition

Abstract

Introduction: COVID-19 is a global pandemic that strikes various groups, including nurses. Nurses are the health workers who are most exposed to COVID-19. Besides causing physical symptoms, COVID-19 also brings psychological symptoms, which need to be studied more deeply. The purpose of this study was to investigate post-covid psychological impact on nurses from the perspective of Indonesian nurses.

Methods: This study was conducted using a descriptive approach on 187 nurses working in health services in Lamongan Regency who were exposed to COVID-19 and selected by purposive sampling. Psychological conditions studied included depression, which was measured by the Patient Health Questionnaire-9 (PHQ-9); anxiety, measured by general anxiety disorder-7 (GAD-7); and insomnia, measured by the Sleep Condition Indicator (SCI). The data was collected from June to July 2022 using a Google form and analyzed descriptively.

Results: The results showed that 55.1% of nurses were female, 87.7% were aged 22-45 years, 73.8% worked in hospitals, 87.2% worked in health services for more than 20 years, 81.8% smoked, and 18.2% were hospitalized when exposed to COVID-19. The results showed that 31.6% of nurses experienced mild to severe anxiety, 32.1% experienced mild to severe depression, and 9.1% experienced insomnia.

Conclusion: Psychological symptoms experienced by nurses after being exposed to COVID-19 included anxiety, depression, and insomnia. Psychosocial stress factors and or pathophysiology of viral infections may trigger psychological disorders. Future researchers are recommended to examine further the factors contributing to psychological disorders in nurses and how long nurses experience post-covid psychological disorders.

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INTRODUCTION

Working in healthcare during COVID-19 is a challenge, especially after WHO declared COVID-19 a pandemic in 2020 [1]. Numerous studies have shown that COVID-19 is recognized as a global health problem affecting people's physical and mental health [2]. Nurses who provide direct care to patients with COVID-19 have an increased workload amid an emergency and threatening situation. They expressed psychological problems and reported experiencing high levels of stress and fatigue. This has led to depressive symptoms in nurses during the pandemic [3]. The number of potentially harmful outcomes corroborates this after caring for patients, such as fatigue, stress, and the risk of infection and transmission of the virus to their families [4]. These are a few reasons they tend to be overburdened with work and mentally overloaded.

Poor physical condition also impacts nurses' psychological condition, which is associated with high levels of fatigue [5]. A recent study that captured the association of burnout with psychological conditions in 14 countries in Asia, Europe, and North America reported a prevalence of emotional exhaustion of 34.1%, depersonalization of 12.6%, and lack of personal achievement of 15.2% [6]. The results indicate that the psychological description of nurses due to COVID-19 has been evenly distributed in almost every country. Recent research by Chen et al. examined the psychological conditions of those who handle COVID-19 patients in various hospitals. It was discovered that female nurses who worked in the intensive care unit (ICU) and several referral hospitals for COVID-19 had the highest risk of developing symptoms similar to post-traumatic stress disorder (PTSD) [7]. The results of the meta-analysis study revealed high levels of anxiety (23%), depression during and after care (28%), and a high incidence of insomnia (39%) among nurses working in the care of COVID-19 patients [8]. This psychological emergency requires rapid and holistic interventions to improve the psychological resilience of health workers and strengthen the capacity of the healthcare system [9].

Many literatures point out that physical and psychological impacts are apparent for nurses during the pandemic. Recent research assessed factors surrounding psychological problems or anxiety in nurses, among which the most likely cause was high infection rates in healthcare workers [10], fatigue and workplace barriers [11], and high workload [12]. Psychological conditions during the COVID-19 pandemic are also described, such as anxiety and depression [13], severe anxiety [14], emotional distress [11], and the most prevalent is a decrease in stamina [15]. Post-covid sequelae, apart from physical symptoms, also cause sequelae in the psychological condition of nurses. The psychological impact on nurses after the COVID-19 pandemic has not been widely explained. If it does not receive serious attention, the effects of COVID-19 on psychological conditions can reduce the performance of nurses in providing health services. Therefore, we were interested in investigating the psychological impact of nurses in the aftermath of the COVID-19

pandemic from the perspective of Indonesian nurses.

METHODS

This study employed a descriptive approach to identify the psychological condition of nurses working in health services in Lamongan after COVID-19. The data was obtained from June 18 to July 31, 2022. The population of the study was 2919 nurses in Lamongan as of May 1, 2022. The sample was 187 nurses in Lamongan who worked in health services and previously experienced COVID-19. The sample size was determined based on the number of nurses experiencing COVID-19 from 2020 to May 2022 and selected using purposive sampling. The inclusion criteria were nurses working in health care services in Lamongan who were diagnosed with COVID-19 by antigen swab or PCR within the last two years and were willing to be respondents. The exclusion criteria for the study were sabbatical /out-of-work, nurses who worked in educational institutions, or had never experienced COVID-19.

Instruments

In this study, four instruments were used to examine demographics, depression, anxiety, and sleep quality questionnaires. Participant demographics included gender, age, education level, institution, years of service, and deployment location. The depression questionnaire employed in this study was the Patient Health Questionnaire-9 (PHQ-9), with a reliability value of Cronbach's α of 0.89 [16]. In identifying minor to major depression, PHQ-9 has a sensitivity of 64-69% and a specificity of 86-94% [17], [18]. This questionnaire consists of 9 items, and scoring uses four Likert scale. The Indonesian version was tested for reliability with Cronbach's alpha value = 0.714, indicating the questionnaire's reliability [19].

The questionnaire used to detect depression was general anxiety disorder-7 (GAD-7). The GAD-7 is a 7-item with a 4-Likert scale that ranges scores from 0 to 3 on all the questions [20]. The GAD-7 questionnaire has been tested for validity in migraine patients and pregnant women with Cronbach's alpha values of 0.915 and 0.89 [21], [22]. This questionnaire has been translated into Indonesian and has been tested for reliability with a Cronbach's alpha value of 0.867, sensitivity of 100%, and specificity of 84.4% [23].

The questionnaire used to detect the presence of insomnia was the SCI (sleep condition indicator). The results showed a valid SCI with Cronbach's alpha value of 0.733-0.857 [24]–[26] and a validity value of 0.84 [25]. The SCI consists of 8 items and uses a 5-Likert scale. This tool was developed based on DSM-5 insomnia disorder criteria with a range from 0-32. The questionnaire has been translated into Indonesian using a forward-backward translation technique based on Brislin's translation [27] and has been tested for reliability with a Cronbach's alpha value of 0.887 [28].

Ethical consideration

Before the study was conducted, it had received ethical approval from the Ethics

Committee of Universitas Muhammadiyah Lamongan No. 229/EC/KEPK-S2/06/2022, dated 16 June 2022.

Procedures

After the research was declared ethically feasible, the researcher applied for a research permit to the Indonesian National Nurses Association (INNA) of Lamongan, an association of nurses working in hospitals, health centers, health clinics, and home care. Questionnaires were distributed to nurses who experienced COVID-19 from 2020 to May 2022. The post-COVID duration was not classified by time; all nurses who had COVID-19 either a few months before or <2 years were included in the criteria for research respondents. The data were obtained from the PPNI database. Before administering the questionnaire, the researcher explained the purpose of the study. Nurses who were willing to become respondents filled out informed consent, then filled out the questionnaire provided. The data were tabulated and analyzed descriptively after all participants filled out the questionnaire.

RESULTS

The participants involved in this study were 187 nurses in Lamongan regency who suffered from COVID-19 and worked in health services, health clinics, hospitals (98.4%), and home care (1.6%). Most of the respondents (87.7%) were in the productive age group (≤45 years old). About 55.1% of the respondents were male, while 55.9% were female. Furthermore, the percentage of nurses who smoked was 81.8%. The majority of respondents had a bachelor's degree in nursing, and 54.6% were professional nurses. A total of 87.2% of respondents have worked in the health service for more than 20 years. Of the respondents, 74.4% were self-isolation patients without oxygen concentrators either at their respective homes or in a specialized COVID-19 isolation room (Table 1).

Table 2 shows that the percentage of nurses experiencing minimal anxiety and severe anxiety is 68.4% and 2.7%, respectively. The percentage of nurses experiencing minimal depression or no depression and severe depression is 67.9% and 0.5%, respectively. The percentage of nurses experiencing insomnia is 9.1%, and 90.9% sleep well.

Table 1
Respondents' Demographic Data (n=187)

Variables	n	%
Gender		
Male	84	44.9
Female	103	55.1
Age (y/o)		
<35	93	49.7
36-45	71	38
46-59	22	11.8
60-74	1	0.5
Education		
Nursing High School	4	2.1
Nursing Diploma III	81	43.3
Bachelor of Nursing	28	15
Professional Nurse Program	74	39.6
Institution		
Primary Health Care	42	22.5
Home care	3	1.6
Healthcare Clinic	4	2.1
Hospital	138	73.8
Working Experience (years)		
< 5	11	5.9
5-10	3	1.6
10-20	10	5.3
> 20	163	87.2
Assigned Location		
Emergency Room	41	21.9
Intensive Care Unit	18	9.6
Outpatient Department	31	16.6
Covid isolation room	38	20.3
Hemodialysis	6	3.2
Surgical room	4	2.1
Non-surgical inpatient room	37	19.8
Operating room	8	4.3
High Care Unit	1	0.5
Home Care	3	1.6
Smoking Behavior		
Yes	153	81.8
No	34	18.2
Type of care during Covid-19		
Self Isolation without Oxygen	139	74.4
Self Isolation with Oxygen	14	7.5
Hospitalized (Isolation Room)	29	15.5
Intensive Care Unit	5	2.7

Table 2
Post-Covid Nurses' Psychological Condition (n=187)

Variable	n	%
Anxiety		
Minimal	128	68.4
Mild	40	21.4
Moderate	14	7.5
Severe	5	2.7
Depression		
Minimal/no depression	127	67.9
Mild	41	21.9
Moderate	13	7.0
Moderate-Severe	5	2.7
Severe	1	0.5
Sleep state		
Sleep well	170	90.9
Insomnia	17	9.1

DISCUSSION

The susceptibility elements that lead to the psychiatric aftereffects of COVID-19 may be relevant to the PASC phase [29]. Long-term signs of mental disorders are strongly related to low-grade inflammation [30]. A physiological and psychological stressor is triggered in more than half of the population by raising plasma C-reactive protein [31] and inflammatory biomarkers [32]. Direct infection processes in the brain, hyperinflammation, and hypercoagulability can also cause neurological effects in sufferers of COVID-19 [33].

Treatment factors during COVID-19, such as hospitalization and intensive care unit (ICU), and the course of critical illness affect the appearance of post-infection psychological symptoms [34]. Liu et al.'s research showed that COVID-19 severity and treatment in the ICU were not significantly related to COVID-19 symptoms after hospitalization. However, COVID-19 severity (not admitted to the ICU) was associated with one or more psychological symptoms. Family infections and some residual COVID-19 symptoms were related to psychological symptoms. Older people more often had higher COVID-19 severity and ICU admission, and men were admitted to the ICU more often than women. More severe cases of COVID-19 could display some psychological symptoms after hospitalization, which in time could affect other symptoms [35].

Physiological, mental, and social conditions can be affected by virus exposure [36]. In the COVID-19 virus, receptors for the enzyme Angiotensin Converting2 (ACE2) are found, which are thought to have a negative impact on the central nervous system (CNS). These viral receptors activate glial cells in the central nervous system, causing inflammation and destruction [37]. As a result of the increased activity of chemokines and interleukins, there are neurological complications, including cerebrovascular damage, neurodegeneration, and depression

[38]. COVID-19 infection causes brain damage similar to that perceived in patients with chronic fatigue syndrome or chemotherapy for cancer. It was discovered that damage to endogenous cells in the brain causes symptoms of delirium, and hypercoagulation occurs, which can cause hypoxia [39], [40]. Many related studies have been carried out, yet the causes remain unanswered, whether caused by coagulation, inflammation, or direct viral infection and hypoxia [38], [41].

It is a long-term psychological impact that may affect the quality of life of COVID-19 survivors in the future. Prospectively, the effect of the risk of decreased neurocognitive performance on psychopathology that accompanies sequelae in COVID-19 survivors after being declared cured is that it can gradually increase depression. Over time, symptoms of stress and other psychological disorders, such as insomnia and anxiety, will decrease [39]. Cai et al. [42] stated that the characteristics of the COVID-19 virus, in a nutshell, can be easily transmitted and a drastic decline in physical condition is a predictor factor for causing psychological disorders. In addition, the uncertain effectiveness and shortage of antiviral drugs can make the situation worse [43] [44], [45]. Misunderstandings in processing news can increase feelings of worry and fear.

In women, the levels of anxiety and depression scored higher even though the infection process was found to be much lower [46], [47]. COVID-19 survivors in women with a history of psychological disorders will be a risk factor for psychopathology [48]. Anxiety does not correlate with the viral infection process and oxygen saturation level. In the acute phase, more male patients were found, but fewer patients experienced symptoms of anxiety [48]. In conclusion, psychological symptoms can be caused by the psychosocial stress experienced or the pathophysiology of a viral infection [39], [45]. The previous study showed that anxiety and depression are significant predictors that affect the quality of ICU nurse performance and the quality of patient health [49]. The lower the anxiety and depression in nurses, the higher the quality of nurse performance and the frequency of performing nursing activities [49].

Insomnia, a sleep disorder, is one of the most frequently diagnosed among COVID-19 survivors. A survey of 236,000 COVID-19 participants' electronic health records revealed that 5.4% had sleeplessness. [50]. The COVID-19 survivors are also more likely to experience insomnia than people with the flu or other respiratory diseases, according to the same study. Within one month following hospital release, a survey of sleep problems among COVID-19 survivors in France found that 43.3% of instances of clinical insomnia, 35.8% of moderate cases, and 7.5% of severe cases, were present [51]. More than half of COVID-19 survivors in our study had an insomnia diagnosis. Concerning the frequency of sleep problems and the immediate effects of the COVID-19 virus on sleeping habits, it seems consistent with the research published thus far. The results may be explained by the viral neurotropism described in the paper and the resulting structural and functional damage to the CNS. Sleep deprivation and the subsequent onset of depression have been linked to the dynamic alterations that characterize neuroinflammation [52].

Young individuals and women have been found to have more severe inflammation, consistent with epidemiological findings for these groups. Due to the possibility that sleep problems increase the intensity of depressed symptoms, they seem to be more vulnerable to depression [52]. This may also help to explain why the association between age and insomnia was not found, even though physiological aging can result in altered sleep patterns and reduced sleep quality [41].

According to a recently published study, the prevalence of insomnia during the outbreak was roughly 35.7% worldwide, and elevated risk among healthcare workers at 36.0%, with a lower incidence among the public at 32.3%. It also shows that patients with COVID-19 have a higher prevalence of sleep problems 74.8% [53]. According to several studies, female gender and the severity of one's sickness were substantially correlated with depression, anxiety, and sleeplessness symptoms, suggesting that psychosocial variables may be involved in the process [54].

The results of this study may be used as a reference in understanding nurses' psychological conditions after experiencing COVID-19. This can affect nurses' performance in service if appropriate interventions are not provided. Therefore, other than physical conditions, psychological conditions can be considered for giving nurses a workload after suffering from COVID-19 to speed up recovery and not aggravate conditions in the rehabilitation phase.

LIMITATIONS

This study found no association between work units and insomnia, depression, and anxiety. The respondents' workplace and the type of care experienced during COVID-19 also varied from outpatient to inpatient care, which might affect nurses' psychological conditions. In addition, this study did not specifically identify the time of the last COVID event experienced by respondents and the psychological conditions experienced by respondents at the time of data collection.

CONCLUSION

Post-covid psychological disorders experienced by nurses include anxiety, depression, and insomnia. No research has yet been able to definitively prove the effect of COVID-19 infection on these psychological disorders. Psychosocial stress factors are believed to trigger psychological disorders and or pathophysiology of viral infections that cause CNS damage. The results of this study can be used as a reference in nursing about the effects of COVID-19 on physical and psychological conditions, which can indirectly affect nurses' performance in health services. Nurses can reduce the psychological impact of post-COVID-19 quickly and take specific physical, psychological, and social methods into practice to accelerate psychological recovery after COVID-19 [55]. Future researchers are expected to identify how long psychological symptoms are felt by nurses and the extent to which they interfere with nurses in carrying out their work.

FUNDING

This research received funding from the Indonesian Ministry of Education, Culture, Research and Technology through the Novice Lecturer Research program in 2022.

ACKNOWLEDGMENT

We gratefully acknowledge the nurses in Lamongan who kindly agreed to be respondents in this study.

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