Original Research

Indonesian Journal of Health Administration
(Jurnal Administrasi Kesehatan Indonesia)
p-ISSN 2303-3592, e-ISSN 2540-9301
10.20473/jaki.v11i2.2023.252-263

NURSE BURNOUT PREDICTORS IN HEALTHCARE UNITS DURING COVID-19 IN EAST JAVA, INDONESIA

Prediktor Burnout Perawat Unit Pelayanan Kesehatan Pada Masa COVID-19 di Jawa Timur, Indonesia

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Abstract

Background: As frontline health service providers, nurses play an important role in directly caring for patients during the COVID-19 pandemic. Nurses are very vulnerable to infection, and this causes ongoing anxiety and ultimately causes burnout.
Aims: This study aims to identify factors that may lead to nurse burnout in various East Java healthcare facilities.
Methods: This research used correlational analysis with a cross-sectional approach. The approach of purposive sampling was applied to select nurses from various health units in East Java with 200 respondents. The Maslach Burnout Syndrome Inventory-Human Services Survey (MBI-HSS) questionnaire was used for burnout variables and questionnaires for efficacy, job stress, and fear variables. Data analysis used multiple logistic regression with the ENTER method.
Results: The findings indicated that the variable that had a significant relationship with burnout was work stress. The results of the OR Odds Ratio analysis for the job stress variable are 2.860, meaning that respondents who experience high job stress have a 3-fold risk of experiencing burnout compared to those who do not experience high stress.
Conclusion: Job stress is predicted to be the most dominant variable causing burnout during the COVID-19 pandemic. Respondents with high job stress are more at risk of experiencing burnout.

Keywords: burnout, COVID-19 pandemic, nurse

Abstrak

Latar Belakang: Perawat sebagai garda terdepan penyedia layanan kesehatan berperan penting dalam merawat pasien secara langsung di masa pandemi COVID-19. Perawat sangat rentan terhadap infeksi dan hal ini menyebabkan kecemasan yang berkelanjutan dan pada akhirnya menyebabkan kelelahan.
Tujuan: *Tujuan penelitian ini adalah untuk mengidentifikasi prediktor burnout perawat di berbagai unit pelayanan kesehatan di Jawa Timur.*
Metode: Penelitian ini menggunakan analisis korelasional dengan pendekatan cross sectional. Teknik purposive sampling digunakan untuk memilih perawat dari berbagai unit kesehatan di Jawa Timur dengan jumlah responden sebanyak 200 orang. Kuesioner MBI-HSS digunakan untuk variabel burnout dan kuesioner untuk variabel efficacy, stres kerja, dan ketakutan. Analisis data menggunakan regresi logistik berganda dengan metode ENTER.
Hasil: *Hasil penelitian menunjukkan bahwa variabel yang memiliki hubungan signifikan dengan burnout adalah stres kerja. Hasil analisis OR Odds Ratio untuk variabel stres kerja sebesar 2,860 artinya responden yang mengalami stres kerja tinggi memiliki risiko 3 kali lipat untuk mengalami burnout dibandingkan dengan yang tidak mengalami stres tinggi.*
Kesimpulan: *Stres kerja diprediksi menjadi variabel paling dominan penyebab burnout pada masa pandemi COVID-19. Responden dengan stres kerja yang tinggi lebih berisiko mengalami burnout.*

Kata kunci*: burnout, perawat, pandemi COVID-19*

Indonesian Journal of Health Administration (*Jurnal Administrasi Kesehatan Indonesia*)
p-ISSN 2303-3592, e-ISSN 2540-9301, Volume 11 No.2 2023, DOI: 10.20473/jaki.v11i2.2023.252-263
Received: 2023-02-11, Revised: 2023-11-21, Accepted: 2023-11-24, Published: 2023-11-28.
Published by Universitas Airlangga in collaboration with *Perhimpunan Sarjana dan Profesional Kesehatan Masyarakat Indonesia (Persakmi)*.

How to cite:
Santoso, W. and Sudarsih, S. (2023) "Nurse Burnout Predictors in Healthcare Units During COVID-19 in East Java, Indonesia", *Indonesian Journal of Health Administration*, 11(2), pp. 252-263. doi: 10.20473/jaki.v11i2.2023.252-263.

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Introduction

China is the origin of the coronavirus disease of 2019 (COVID-19) epidemic, which has now spread to almost every country in the world and is one of the current public health emergencies. Severe Acute Respiratory Syndrome Coronavirus - 2 (SARS-CoV-2), originally Novel Coronavirus 2 2019 (2019-nCoV), is the new coronavirus responsible for this illness (Guo *et al*., 2020). Epidemics badly impact societies on the social, economic, and psychological levels. The COVID-19 epidemic has significantly impacted the world, similar to earlier epidemics (Elbay *et al*., 2020). The COVID-19 pandemic represents a significant risk to public health worldwide. According to WHO, as of 7 July 2021, 368,874 new cases, 184,324,026 positive confirmed cases, and 3,992,680 fatalities have been recorded worldwide. Data in Indonesia as of 9 July 2021, 2,417. 788, 38,391 new cases, 63,760 total deaths, and 852 deaths within 24 hours (WHO, 2021). The above conditions ultimately require that health workers who are at the forefront are at risk of being directly affected by mental and physical impacts as a result of caring for COVID-19 patients. Putting into practice measures that lower the risk of infection, shorten shifts, and provide mechanisms for mental health support may reduce mortality and morbidity among healthcare workers, according to research findings (Shaukat *et al*., 2020; Lai, Ma, and Wang, 2020;Talaee *et al*., 2020). Nearly 30% of all hospital employment nationwide nurses, the largest group in our healthcare profession (U.S. Bureau of Labor Statistics, 2019).

Healthcare experts are experiencing psychological stress due the COVID-19 pandemic. Previous research has shown that mental health issues are prevalent among health practitioners. Based on 59 studies consisting of three qualitative, 50 quantitative, two narrative reviews, and four other designs on assessments of employees mental health during the COVID-19 pandemic. The majority of the 54,707 participants were nurses and doctors, as well as other healthcare professionals engaged in direct clinical care, management, or other clinical responsibilities. Healthcare professionals report anxiety, depression, distress, and sleep issues in one to two out of five cases. One research was the only one to record somatic signs like changes in appetite (Muller *et al*., 2020).

A total of 65 research involving 97,333 healthcare professionals from 21 nations collected information on the frequency of mild depression, anxiety, and Post-Traumatic Stress Disorder (PTSD). Anxiety was 22.1% (95% CI, 18.2% - 26.3%), PTSD was 21.5% (95% CI, 10.5% - 34.9%), and depression was 21.7% (95% CI, 18.3% - 25.2%). In addition, prevalence numbers are provided for each disorder's mild category. According to studies, the Middle East has the highest rates of depression 34,6%), and anxiety (28.9%) was conducted there (Li *et al*., 2021). The study's findings indicate that the findings Gender, age, years of work experience, working in multiple institutions, holding management positions, job satisfaction, hardiness, and experience with work-home and home-work interaction appear to be predictors of burnout among nurses, according to multiple linear hierarchical regression analyses (stepwise method) (Queiros and Carlotto, 2013; Ferry *et al*., 2021; Luceño-Moreno *et al*., 2022).

Generally, employees deal with rising stress levels related to their jobs, which leads to burnout. Studies show that work-related variables such as formal environments, long workdays, a deficiency of social support from colleagues, workplace stress, job stress, workload, work flexibility, and work-life conflict are associated with burnout (Kay-Eccles, 2012; Albritton, 2020; Buruck *et al*., 2020). Since nurses are the frontline healthcare providers who directly treat and care for patients, they play a crucial role in the health system's response to the COVID-19 pandemic (Hu *et al*., 2020; Liu *et al*., 2020; Zhan *et al*., 2020). As they are especially vulnerable to the risk of contracting SARS-CoV-2, nurses experience intense and ongoing psychological strain. Their anxiety for their health, the health of their close family members, and the health of their

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p-ISSN 2303-3592, e-ISSN 2540-9301
10.20473/jaki.v11i2.2023.252-263

patients overwhelm them (Joo and Liu, 2021).

Due to high infection rates and lengthy working hours, health workers who are on the front lines of a pandemic are at a significant risk of developing chronic stress. It has been demonstrated that this stressor has a detrimental effect on mental health (Kalmbach *et al*., 2018) and increases burnout (Xian *et al*., 2020). A separate Japanese study, discovered that more than 40% of nurses, more than 30% of radiology techs, and more than 40% of pharmacists matched the criteria for burnout. The first study compared job types and risk factors related to burnout among health professionals in Japan during the pandemic (Matsuo *et al*., 2020).

Burnout syndrome, in general, is a state of chronic involvement in emotionally draining events at work that results in physical, emotional, and cerebral exhaustion (Maslach and Jackson, 1981). Burnout, a problem with occupational health that is on the rise, has been linked to prolonged exposure to industrial stress. Psychological burnout is characterized by extreme levels of physical, emotional, and spiritual exhaustion. The term “burnout” has been used to characterize emotions of exhaustion, depersonalization, negativity toward one’s employment, and a diminished sense of personal success in the “helping” professions. Individuals psychological reactions to pressures in work situations are represented as psychological burnout (Fernandez *et al*., 2020).

Burnout, thus, lowers the standard of care, leading to an increase in the number of hospital-acquired infections and, eventually, the number of patient deaths (Shenoi *et al*., 2018). According to Hall *et al* (2016) burnout also causes job discontent and increased nurse turnover, resulting in a scarcity of nurses and further harm to patients. This study aims to identify factors that may lead to nurse burnout in various East Javan healthcare facilities.

Method

The study employed correlational analytics and a cross-sectional methodology, and the researcher solely emphasized on the simultaneous assessment of independent and dependent variables or data observed simultaneously. The sample in this study was nurses in healthcare units in East Java, Indonesia, amounting to 200 respondents. The research sample was taken by purposive sampling technique, the following criteria: willing to be a respondent, nurses who are directly involved in various service units during the COVID-19 pandemic, nurses who are not sick and being cared for at the time of the study, have a device to access google forms when filling out the questionnaire. An online survey distributed to several East Java health service units via a link on a Google form served as the method for gathering data for this study.

The questionnaire consists of five parts, namely demographic data, measurement of efficacy, work stress, and fear. The Maslach Burnout Syndrome Inventory-Human Services Survey (MBI-HSS) questionnaire was used to measure the burnout variable. The Maslach burnout scale, created in 1981, has been regarded as dependable and valid. The MBI-HSS scale has three components: personal accomplishment, depersonalization, and emotional weariness. There are 22 statement items in this questionnaire (Maslach, Jackson and Leiter, 1997).

Researchers gathered data by giving respondents chosen based on the researcher's criteria the opportunity to complete research questionnaires. Previously, the researcher explained the purpose and benefits of the research to the respondents and gave informed consent through the Google form. If the respondent agrees, then proceed with filling out the questionnaire. The multiple logistic regression test with the ENTER technique was used to analyze the data with the SPSS for Windows version 22 application and a significance level of = 0.05 with the assumption that if 0.05, then H0 is disregarded, meaning that there is a relationship between demographics, work stress, self-efficacy, and fear of burnout in nurses who worked in all healthcare units during the COVID-19 pandemic.

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Table 1. Characteristic of Respondents in East Java, Indonesia (n=200)

Characteristics	n	%
Gender		
Male	58	29.0
Female	142	71.0
Age (in years)		
21 – 30	112	56.0
31 – 40	63	31.5
41 – 50	23	11.5
51 – 60	2	1
License Practical Nurse / Nurse		
Vocational nurse	76	38.0
Bachelor of Science	116	58.0
Bachelor of Science non nursing/ others	3	1.5
Magister/ Nursing specialist	5	2.5
Marital Status		
Single	70	35.0
Married	127	63.5
Divorced	3	1.5
Number of Children		
1	58	29.0
2	46	23.0
3	12	7.0
4-5	2	1.0
>5	11	6.0
No children	68	34.0
Salary (in million rupiahs)		
<3	102	51.0
3-6	83	41.5
7-9	11	5.5
>9	4	2.0
Work Unit		
COVID-19 hospitalization	27	13.5
Non COVID-19 hospitalization	55	27.5
Emergency room	9	4.5
ICU	21	10.5
ICCU	5	2.5
Other units in hospitals	41	20.5
Others	42	21.0
Employment Status		
Permanent	94	47.0
Non permanent	106	53.0
Length of Employment (in years)		
<1	54	27.0
1 – 5	59	29.5
6 – 10	29	14.5
>10	58	29.0
Position		
Practitioner	168	84.0
Head of the ward	19	9.5
Nurse manager	13	6.5
Total	200	100

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Result and Discussion

In this study, most of the respondents were between the ages of 21-30 (112 people or 56%), married (63.5%), and women (142 respondents or 71%) (Table1). Moreover, the majority of the respondents did not have any children 68 people (34%), had an income of < Rp3 million (51%), and earned a Bachelor of Science degree 116 people (58%). The majority worked in a non-COVID-19 inpatient care unit 55 respondents (27.5%). Most of the respondents were non-permanent/ contracted employees 106 respondents (53%), have worked for 1-5 years 59 people (29.5%), and were employed as nurse practitioners 168 people (84.0%)

In this study, most of the respondents had high job stress (119 people or 59.5%). Among the respondents, 66% stated that they felt no fear, 74.5% or 149 stated that they were very confident, and 54.5% or 109 stated that they did not experience burnout (Table 2).

Table 2. Distribution of Respondents Based on Job Stress, Fear, Efficacy and Burnout in East Java, Indonesia (n=200)

Variables	n	%
Job Stress		
Low job stress	81	40.5
High job stress	119	59.5
Fear		
No fear	132	66
Extreme fear	68	34
Efficacy		
No efficacy	0	0
Moderate efficacy	51	25.5
High efficacy	149	74.5
Burnout		
No burnout	109	54.5
Burnout	91	45.5
Total	**200**	**100**

Table 3. Simple Logistics Regression Analysis, Variable Candidate Selection with Simple Logistics: Variables with *p-Value* < 0.25 enter multivariate candidates

No	Variables	*p-value*	Multivariate Candidates
1	Age	0.103	Yes
2	Gender	0.663	No
3	Marital status	0.224	Yes
4	Number of children	0.133	Yes
5	Income	0.010	Yes
6	Education	0.940	No
7	Work unit	0.749	No
8	Employment status	0.614	No
9	Length of employment	0.109	Yes
10	Position	0.245	Yes
11	Social support	0.779	No
12	Job stress	0.002	Yes
13	Efficacy	0.363	No
14	Fear	0.778	No

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In this study, job stress emerged as the variable most significantly related to the incidence of burnout, even after controlling for confounding variables, such as age, length of employment, income, work unit, position, and number of children (Table 3). The results of the analysis show that the OR Odds Ratio for the job stress variable was 2.860, meaning that respondents who experience high job stress have three times the risk of experiencing burnout compared to those who do not experience a high level of stress.

According to the findings of a survey of 180 nurses, 83 (53.9%) experienced burnout during the COVID-19 pandemic (Sudarsih and Santoso, 2023). Most respondents, precisely 119 (59.5%) had high job stress. In a study, the association between psychosocial risk factors associated to the workplace and stress-related mental disorders (SRD) was examined. With varied incidence rates of 13% for psychological distress, 12-22% for emotional exhaustion, and a prevalence of stress symptoms reaching 50% in specific professions and countries, stress-related mental disorders (SRD) are regularly documented in the working population. The World Health Organization classified burnout as an "occupational phenomenon" in the ICD-11, the 11th revision of the International Classification of Diseases (Van Der Molen *et al*., 2020).

Nurses commonly experience severe psychological stress as a result of their heavy workloads, long work hours, and placement in risky environments. According to Maslach (1998), Tomaszewska (2019), and Dall'Ora *et al*. (2020), all of these factors contribute to causing burnout. According to Maslach's theory, burnout is a response to excessive job stress, characterized by an emotional exhaustion that manifests as unpleasant behaviors, social isolation, and a decline in productivity and self-confidence work.

Studies have proven that job stress impacts the emergence of burnout. This study shows that almost half of the respondents (91 people or 45.5%) experienced burnout. This corresponds to the research of (Salvagioni *et al*., 2017), which found that the burnout syndrome as a result of chronic stress at work harms the welfare and health of workers. Jackson, Schuler, and Schwab also defined that when it comes to interpersonal interactions, burnout is a state of emotional tiredness (MacDonald *et al*., 2019).

The high infection rates and long work hours of healthcare professionals on the scene of an epidemic put them at a significant risk of developing chronic stress. It has been demonstrated that this stress factor negatively affects mental health and causes burnout. Based on some of the literature above, there is an agreement between the results of this study and previous opinions, so it is vital for nurses to manage job stress as high job stress is a trigger factor for burnout. Burnout rates have increased steadily over the past few years among nursing staff in China (Huang, 2018). Nurses are more prone to burnout than other healthcare professionals because of their close interpersonal relationships with patients (Kowalczuk *et al*., 2020).

Nurses experience burnout because of the pandemic's challenging working circumstances and heavy workloads (Wu *et al*., 2020; Chen *et al*., 2020; Lai, Ma, and Wang, 2020; Li *et al*., 2020). The COVID-19 increased the risk of burnout among nurses (López-López *et al*., 2019). The results of this research are in line with those of a Chinese study (Yao, *et al*, 2018), indicate that 66.34% of the nursing staff there had burnout. These findings are also consistent with those of a cross-sectional study conducted on nurses at work in a Chinese city hospital, which found that 68.1% of nurses experienced burnout. This is also consistent with the research conducted by Galanis *et al* (2021) that utilized MBI to quantify nurses' burnout, resulting in a substantial prevalence during the COVID-19 epidemic. The findings showed that emotional tiredness, low personal achievement, and depersonalization were all commonly found in nurses with a prevalence of 34.1%, 15.2%, and 12.6% respectively. Nearly half of the respondents of this research reported that they experienced burnout, whereas the rest reported that they did not. One reason for this was the situation of the COVID-19

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(Jurnal Administrasi Kesehatan Indonesia)
p-ISSN 2303-3592, e-ISSN 2540-9301
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pandemic, which, was just beginning to spread when the study was conducted. However, respondents were still concerned about the rise in COVID-19 cases or the possibility of a third wave.

Job stress is the variable in this study that is substantially associated with burnout when confounding variables such as age, length of employment, income, work unit, position, and number of children were taken into account. The findings of the analysis indicate that OR (Odds Ratio) of the work stress variable was 2.860.

Healthcare professionals battling against a pandemic from the frontline are vulnerable to significant levels of chronic stress because of the high risk of infection and long work hours. Stress among nurses may be a factor in their burnout (Kim, 2020). Psychological effects on primary healthcare personnel are due to the COVID-19-related psychosocial work environment. Enhancing working conditions for primary healthcare personnel in the COVID-19 pandemic is critically important. Intervention measures that boost personal resilience must be put into place in addition to creating externally supportive work environments (Shi *et al*., 2022)

Burnout, which is frequently referred to as occupational stress by healthcare professionals, has been found to result from sustained job stress (Çalişkan Tür *et al*., 2016). Compared to other healthcare workers, nurses have a higher rate of job burnout (Arnetz *et al*., 2019; Xian *et al*., 2020; Kelly *et al*., 2019). The cause of 90% of employee health issues is job stress (Hassard, 2018). The World Health Organization stated that unmanaged workplace stress can result in a phenomenon known as burnout. Its three distinguishing traits are diminished professional competence, a developing sense of separation from one's work and a negative or cynical outlook on one's profession (WHO, 2019). The key stressors in nursing, which is considered to have rigorous and complex job requirements, have been identified as high standards, a lot of responsibilities and insufficient power (Jacobs and Lourens, 2016). Particularly in helping professionals in fields such as nursing, psychiatry, education, and social work, the detrimental effects of persistent occupational stress and the impact that burnout has on both the individuals and their businesses is well-documented (Wood *et al.*, 2020).

Stress levels are rising as a result of the 2019 coronavirus disease (COVID-19) pandemic, which could lead to instability among the nursing staff. Work related outcomes and factors that lead to nurse burnout globally must be better understood given the expertise of nurses and their proportion of the healthcare workforce (Shah *et al*., 2021). A growing number of people are concerned about how work stress affects nurses. Nurses make up the majority of healthcare professionals that provide 24-hour care for patients (Mohammed, 2019). The COVID-19 pandemic has impacted medical professionals on the frontline, most of them are nurses. According to literature from previous pandemics, nurses face a lot of stress, worry, and physical side effects because of their jobs (Fernandez *et al*., 2020).

The COVID-19 pandemic has caused nurses to face a number of challenges in their daily work. Nurses caring for patients suffering from the SARS-CoV-2 virus face a considerable level of psychological stress while carrying out their professional tasks, and they operate in a dangerous environment as a result of their workload. As a result, they experience extreme stress and professional burnout (Tomaszewska *et al*., 2022). This study is consistent with previous research, which stated that higher stress levels are inextricably linked to greater levels of burnout among nurses (Munnangi *et al*., 2018; Dev *et al*., 2020; Kim, 2020).

Conclusion

Job stress is a variable that is predicted to be the most dominant to cause burnout, which means that respondents who experience a high level of stress are at a greater risk of experiencing burnout than those who do not. To minimize the risk of burnout, all healthcare unit managers need

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p-ISSN 2303-3592, e-ISSN 2540-9301
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to pay special attention to making efforts in reducing job stress.

Abbreviations

WHO: World Health Organization; MBI-HSS: Maslach Burnout Syndrome Inventory-Human Services Survey; SRD: Stress-Related Mental Disorders; ICD: International Classification of Diseases; ICU: Intensive Care Unit; ICCU: Intensive Coronary Care Unit.

Declarations

Ethical Approval and Informed Consent

This research obtained ethical approval from the Health Research Ethics Committee of Aisyah Pringsewu University (NO:102/UAP.OT/KEP/EC/2022) and the researchers gave an informed consent form to be signed by respondents before data collection.

Conflict of Interest

The authors declare that they do not contradict the interests of any party.

Availability of Data and Materials

Data availability is accessible upon request.

Authors' Contribution

WS and SS came up with the idea for the study; WS developed the technique; and WS and SS wrote, evaluated, and edited the first draft of the publication.

Funding Source

Bina Sehat PPNI University and Indonesian Accreditation Agency for Higher Education in Health (IAAHEH / LAM-PTKes)

Acknowledgment

This manuscript is the winner of the research competition program on accreditation. The authors thank the Indonesian Accreditation Agency for Higher Education in Health (IAAHEH/LAM-PTKes) for supporting this research.

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p-ISSN 2303-3592, e-ISSN 2540-9301
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