
RESEARCH ARTICLE

Analysis of the Effect of Work Stress and Workload on Work Performance in FMC Bogor Hospital Nurses in 2023

Singgih¹ ✉ **Rapael Ginting² and Chrismis Novalinda Ginting³**

¹²³Master of Public Health Study Program, Faculty of Medicine, Universitas Prima Indonesia, Medan

Corresponding Author: Singgih, **E-mail:** singgih1297@gmail.com

ABSTRACT

The hospital provides services in inpatient, outpatient and emergency departments. The increase in the number of hospitals every year from 2016 amounted to 2046, expanding in 2021 to a total of 2514 public hospitals in Indonesia. (Statistics Center data for 2016-2021). This shows that the level of hospital competition is getting tighter, so the demands for hospitals to improve nurse performance are getting higher. Work performance can be affected by several things, including stress and workload based; research in local Indian hospitals showed 34% of nurses experienced moderate stress, and as many as 2% experienced high stress, to cause physical and mental health problems; another study involving nurse subjects at Makassar hospital also showed nurses who experienced stress and felt a heavy workload until work performance decreased by 91.7%. This study aims to see the relationship and significant influence between work stress and nurse workload on nurses' work performance. The research method is a *cross-sectional* analytical study and a method of research sampling with total sampling techniques. The results of univariate studies showed that most subjects were female, 65.7%, age range 26-30 years, high level of work stress (53.9%), and moderate workload (76.3%). The bivariate results in this study showed a relationship between nurses' work stress and workload (p value 0.024). Research shows no workload relationship to work performance (p value 0.84). The results of multivariate analysis with logistic regression showed that the variable work stress was associated with p value 0.011, with high stress having 11,014 times and low stress 3.522 against low work performance. The conclusion of the study can be seen in the relationship of work performance variables to stress, and high stress causes nurses to have a risk of 11,014 times experiencing low work performance.

KEYWORDS

Work Stress, Workload, Work Performance, Nurse

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1. Introduction

The hospital is an institution engaged in service services with a focus on promotive, preventive, curative and rehabilitative services. The hospital provides services in inpatient, outpatient and emergency departments. The increase in the number of hospitals every year from 2016 amounted to 2046, expanding in 2021 to a total of 2514 public hospitals in Indonesia. (Wicaksono A, Rumengan G, et al in 2022) This shows that the increasingly fierce level of hospital competition will demand the development of hospitals in the form of increasingly sophisticated facilities, and services from health workers, including nurses, must be able to provide the best service and ensure according to service standards from the Ministry of Health of the Republic of Indonesia. Hospital services are always related to work performance; when the performance of health workers decreases, this will accumulate, causing services to also be less good. (Wicaksono A, Rumengan G, et al in 2022)

Survey Bogor Family Medical Center Hospital, as a hospital with C accreditation, has a capacity of up to 103 beds, with a total of 76 nurses. Patients who seek treatment are referral patients from puskesmas, as well as those who come directly because of emergencies. Nurses who serve are divided into 3 work shifts, namely the morning shift from 07.00-14.00, the afternoon from

14.00-21.00 and the night shift from 21.00-07.00. The total number of nurses, when compared to bed capacity, will be a source of workload to work stress, which will affect work performance. Analysis of stress, workload and work performance in nurses will be screened through research tools in the form of questionnaires that will be distributed. The filling results will show the stress level and workload of each individual FMC hospital nurse.

The work performance of nurses is influenced by various factors, including work stress. Work stress is a factor that can encourage increased work performance, but on the other hand, excessive stress levels will reduce performance to cause various physical and mental illnesses and material losses to the workplace, in this case, hospitals. (Sarnia, Manaf S, Mahmud A. in 2022) Nurses have a high risk of experiencing work stress because they have to adapt to changes in guard shifts, be on the front line to serve the needs of patients and are able to communicate with family and health workers in the hospital. Various demands and situations during guard time can potentially be work stress for nurses. (Baker OG, Alshehri BD in 2020) Work stress in hospital nurses can be a negative impact; if exposed continuously, there will be problems in physical and mental health. (Gulvani 2014). A 2018 study of hospitals in India showed that 34% of nurses experienced moderate stress, and as many as 2% experienced high stress that caused health and mental disorders. (Chaudhari, A. P., Mazumdar, K., Motwani, Y. M et al. in 2018). The work stress of nurses at K.R.M.T Hospital, which has a moderate to severe level, reaches 40.5%; this is influenced by the workload of physical, mental, to individual development in their career. (Hasbi NA, Fatmawati, Alfira N. in 2019). Nurses in Sulawesi hospitals showed a prevalence of nurses experiencing moderate stress of 49.1% and 7.5% already experiencing severe stress. Factors that influence work stress are workload and hospital shifts. (Yusran S, et al. 2017). Another study showed that work stress in nurses at hospital x in Fifty City district had a significant relationship between work stress and work performance, and it was found that nurses who had the ability to cope well with stressors had good work performance in serving patients. Research by nurse subjects in Bogor showed a p value of 0.03 which shows a relationship between work stress and nurses' work performance. (Wicaksono A, Rumengan G, et al in 2022) Research by Ahmad EH et al. in 2018 with nurse subjects at Makassar Hospital also showed that nurses who experienced stress due to work had 91.7% decreased performance with an r value = 0.522 and p value of 0.001. The results of research by Rahman A, Salmawati L, Suatama IP in 2017 involving 37 nurses showed a p value result of 0.0634, which can be interpreted as no relationship between work stress and nurses' work performance.

Research shows the effect of workload on work performance with a p value of 0.043 and a regression coefficient of β -0.1; it can be concluded that there is a significant relationship between workload and performance at Hospital X Bogor City. From the results of the study, it can also be concluded that the high workload experienced by nurses will have an impact on decreasing work performance in nurses and vice versa. The responsibility of the nurse is to serve the patient by changing IVs, administering food and medicine on schedule, recording the patient's condition and reporting to the attending physician. Quite a lot of tasks will make nurses feel it becomes a workload, so the workload can be defined as a condition nurses feel they will not be able to complete their tasks. (Wicaksono A, Rumengan G, et al in 2022). Research is supported that workload has a significant influence on the work performance of nurses at Prof. Soeharso Surakarta Hospital and Dr H. Andi Abdurrahman Noor Hospital. (Sari et al in 2021; Saputera, Suhermin in 2021). The study is not in line with the results of a study involving 128 nurses at the Mataram General Hospital NTB, which showed no relationship between workload and nurses' work performance.

Based on the description above, which shows the results of different studies on the relationship between work stress and workload on nurses' work performance, researchers are interested in researching the Relationship of Work Stress and Workload to Work Performance in FMC Hospital Nurses in 2023.

1.1 Hypothesis

1. Work stress is related to the work performance of nurses in hospitals
2. Workload is related to the work performance of nurses in the hospital

2. Research Objectives

2.1 General Purpose

It is known the relationship between the effect of work stress and workload on the work performance of FMC Hospital nurses in 2023

2.2 Special Purpose

1. Knowing the distribution of age and gender characteristics of nurses at FMC Bogor Hospital in 2023
2. Knowing the distribution of nurse education levels at FMC Bogor Hospital in 2023
3. Knowing the distribution of nurses' stress levels at FMC Bogor Hospital in 2023
4. Knowing the distribution of nurses' workload at FMC Bogor Hospital in 2023
5. Know the distribution of nurse performance levels at FMC Bogor Hospital in 2023
6. Knowing the relationship between workload and nurse performance levels at FMC Bogor hospitals in 2023
7. Knowing the relationship between work stress and the level of nurse performance at FMC Bogor Hospital in 2023

8. Knowing the variables that have a significant effect on the performance of nurses at FMC Bogor Hospital in 2023

3. Research Methodology

3.1 Research Type and Design

This study is a cross-sectional analytical study to see the relationship between job stress and workload with work performance based on IWPQ at FMC Bogor hospital.

3.2 Time and Place of Research

Venue: FMC Bogor Hospital

Time: May-June 2023

3.3 Population and Research Sample

The target population is all nurses who are actively working. The affordable population is all nurses who actively work at FMC Bogor hospital. The study sample is the entire affordable population that meets the inclusion criteria and is willing to be included in the study.

3.4 Inclusion and Exclusion Criteria

3.4.1 Inclusion Criteria:

1. Nurses who actively work at FMC Bogor hospital
2. Minimum working time at the hospital is three months (have passed the *probation*)
3. The nurse agrees to be a respondent by giving written consent (*informed consent*).

3.4.2 Exclusion Criteria:

1. The nurse is pregnant.
 2. Have a history of being diagnosed with a psychiatric disorder.
 3. Uncooperative at the time of data collection
 4. Did not answer the questionnaire completely.
- The sampling technique used in this study is the total sampling population

3.5 Data Collection Methods

3.5.1 Data Type

The source of this research data is primary data from nurses at FMC Bogor hospital.

3.5.2 Data Collection Techniques

Data collection methods:

1. Disseminate "questionnaire packages" containing research explanations, informed consent, questions regarding respondent characteristics, stress level questionnaires, as well as workload questionnaires and IWPQ to affordable populations. The questionnaire will be distributed in *the form of Google form*.
2. Respondents who have filled in will *confirm*, and the results of filling out the questionnaire will be recorded in Google Drive, then will be checked to exclude answers from respondents who meet the exclusion criteria.

3.5.3 Research Variables

3.5.3.1 Independent Variables

1. Work Stress
2. Workload

3.5.3.2 Dependent variables

Work Performance

3.5.3.3 Research Instruments and Tools

1. *Google form* to become a media questionnaire form
2. In the *cognitive debriefing stage* in transcultural validation: the work stress questionnaire, workload and IWPQ work performance questionnaire

3.5.4 Data Processing and Analysis

3.5.4.1 Data Editing

The data from the questionnaire collection results are verified online. Editing is carried out to check the completeness of data on respondents' data forms as well as work stress, workload and IWPQ work performance questionnaires so as to facilitate data entry. If there is incomplete data, it will be excluded from the analysis.

3.5.4.2 Data Entry and Analytics

Furthermore, data entry is carried out to the computer through the coding process into the MS Excel database, and for data analysis, will be transferred to SPSS Statistics version 24.0

Data analysis was divided based on univariate and bivariate analysis.

1. Univariate analysis: knowing the description of characteristics is carried out to find out the description of respondent characteristics by displaying frequency distribution tables in order to obtain an understanding (descriptive picture) of the variables studied. The results of univariate analysis for categorical data are in the form of frequency and proportion distributions, while numerical data, if the data is normally distributed, will be displayed in the form of mean and SD.
2. Bivariate Analysis: Analytical tests to assess independent variables against dependent variables use *Chi-Square analysis*; at the limit of the meaning of the calculation of statistic p-value (0.05), if the calculation results are obtained $p < p\text{-value (0.05)}$, then it is said (Ho) is rejected and Ha is accepted.
3. Multivariate Analysis: The test used is *logistic regression* with a significance value of F; if less than 0.05, then it can be concluded that there is a joint influence between the independent variable and the dependent variable; the adjusted result R2 is used to measure the magnitude of the simultaneous influence of several independent variables on the dependent variable.

4. Results of Research and Discussion

4.1 Research Site Overview

Family Medical Center Bogor Hospital is a hospital with C accreditation which is located on the main road connecting Bogor City and Jakarta City and as the main gate of the Outer Ring Road of Bogor City. Patients who seek treatment are referral patients from puskesmas, as well as those who come directly because of emergencies. FMC Hospital is one of the privately owned health service centers, built on 6700 meters² of land, making it easier to transport patients in both private vehicles and public transportation from all majors (24 hours).

The place of research taken is the Family Medical Center Hospital in the Sentul area of Bogor, which has C accreditation and is located at the Outer Ring Road of Bogor City. Patients who seek treatment are referral patients from puskesmas, as well as those who come directly because of emergencies. FMC Hospital is a private hospital that has a land area of 6700 meters and has a wide enough road access so that patients can seek treatment easily. 24-hour hospital services with facilities from general practitioners to specialists. FMC Hospital is still continuing to develop in terms of buildings and human resources. The current building is 4 floors high with an emergency room, has 22 poly specialist rooms, 3 central surgical rooms, an intensive care room or more often known as ICU, NICU, HCU, perina room with high care, field and maternity room, inpatient room that can accommodate up to 103 beds with a total number of nurses 76 nurses consisting of 40 nurses who are ready to serve in the inpatient room.

4.2 Research Results

The study, which was conducted by distributing questionnaires to 76 nurses at FMC Hospital on June 5 – June 7, 2023, obtained the following results:

4.3 Univariate Analysis

4.3.1 General Data

1. Gender

Table 4.1 Distribution of Respondents Based on Gender of Nurses at FMC Bogor Hospital

No	Gender	Frequency (f)	Present (%)
1	Man	26	34.2
2	Woman	50	65.7
	Total	76	100%

Table 4.1 shows that most respondents were female, with 50 respondents (65.7%)

2. Age of Respondents

Table 4.2 Frequency distribution of respondents based on the age of nurses in FMC hospitals Bogor

No	Age	Frequency (f)	Presentase%
1	21-25 Years	8	10.5
2	26-30 Years	46	60.5
3	31-35 Years	10	13.1
4	36-40 Years	7	9.2
5	>40 Years	5	6.5
	Total	76	100

Table 4.2 shows that most respondents in the age range of 26-30 years are 46 people (60.5%).

4.3.2 Custom Data

1. Work Stress

Table 4.3 Frequency Distribution of Respondents Based on the Workload of Nurses at FMC Bogor Hospital

No	Workload	Frequency (f)	Percentage%
1	Low Work Stress	12	15.8
2	Moderate Work Stress	23	30.3
3	High Work Stress	41	53.9
	Total	76	100

Source: Primary Data, Year 2023

Table 4.3 shows that the work stress of most nurses is high as many as 41 respondents (53.9%).

2. Workload

Table 4.4 Frequency Distribution of Respondents Based on the Workload of Nurses at FMC Bogor Hospital

No	Workload	Frequency (f)	Presentase%
1	Light Workload	16	21.1
2	Medium Workload	55	72.4
3	High Workload	5	6.6
	Total	76	100

Source: Primary Data, Year 2023

Table 4.4 shows that the workload of most nurses is a medium workload of 55 respondents (72.4%).

3. Nurse Work Performance

Table 4.5 Frequency Distribution of Respondents Based on Nurses' Work Performance at FMC Bogor Hospital

No	Performance	Frequency (f)	Presentase%
1	Poor Work Performance	0	0
2	Medium Work Performance	18	23.7
3	Good Work Performance	58	76.3
	Total	76	100

Source: Primary Data, Year 2023

Table 4.5 shows that the work performance of most nurses is good, with as many as 58 respondents (76.3%).

4.3.3 Bivariate Analysis

Bivariate analysis is used to analyze relationships between variables. Bivariate analysis in this study used the chi-square test with $\alpha = 0.05$, which means related.

Table 4.6 The relationship between work stress and nurses' work performance at FMC Bogor Hospital

		Poor work performance	Sufficient work performance	Good work performance	P value
Work Stress	Low work stress	0	3	21	0.024
	Moderate work stress	0	10	31	
	High work stress	0	6	6	
	total	0	19	57	

Table 4.6 shows that 31 nurses in FMC hospitals with moderate work stress performed well. The results also showed that there was a relationship between work stress and work performance, namely p value 0.024.

Table 4.7 Workload Relationship with Nurse Work Performance at FMC Bogor Hospital

		Poor work performance	Sufficient work performance	Good work performance	P value
Workload	Low workload	0	3	13	0.84
	Medium workload	0	14	41	
	High workload	0	1	4	
	total	0	18	58	

In Table 4.7, there are 41 nurses with medium workloads who have good work performance. In the study, the results of the chi-square test obtained a p-value = 0.84 > 0.05, so it can be concluded that there is no relationship between workload and work performance.

4.3.4 Multivariate Analysis

Multivariate analysis is a method of managing a large number of variables with the aim of determining the influence of these variables on an object simultaneously or simultaneously. Multivariate analysis in this study uses a logistic regression test with the results of F value and F significance value; if less than 0.05, then it can be concluded that there is a joint influence between independent variables on the dependent variable, the results of the Exp (B) column are used to measure the magnitude of the simultaneous influence of several independent variables on the dependent variable.

Table 4.8 Analysis of logistic regression of variables in variables in the equations

Variable		B	Itself	Exp(B)
Work Stress	Low Work Stress	1259	0.129	3.522
	High Work Stress	2399	0.011	11.014
Burden	Low Workload	.545	0.467	1.724
	High Workload	.344	0.796	1.411
Constanta		-2.809	0.05	0.060

Table 4.8 of the sig column shows the significant effect of the independent variable on the dependent variable. The independent variable is influential if the p value is <0.05. The variable high work stress has a sig of 0.011 < 0.05; it can be concluded that there is a significant difference between the risk of high work stress variables on work performance when compared to low work stress. The Exp(B) column found that low work stress had a risk of 3.52 times experiencing low work performance but found a higher risk in the group experiencing high stress, which was 11,014 times the risk of experiencing low work performance when compared to low work stress.

4. Discussion

4.1 Research Content

4.1.1 The Relationship of Work Stress with Work Performance

The results of the bivariate analysis showed that work stress had a relationship to work performance, with a p value of 0.024. The prevalence of the moderate work stress group was 72.4%. Multivariate analysis with logistic regression showed that high stress was associated with low work performance with a sig of 0.011 and a risk of 11.014 times when compared to low work stress to experience low work performance. The results of the study are in line with the research. Chaudhari A. P. et al., in 2018, in Indian state hospitals, stated that 34% of nurses experience moderate stress, and it affects work performance to physical health. The research is also in line with research by Wicaksono in 2022 with nurse subjects in Bogor, showing a relationship between work stress and work performance. The results of the study are in line with nurses at Makassar hospital research by Ahmad EH et al. in 2018, which showed a p value of 0.001 with r 0.522 for work stress to affect work performance. The results of the study are not in line with research by Rahman A et al. in 2017, which showed no relationship between work stress, especially in the work relationship to work performance (p value 0.0634). Different research results can occur due to differences in research locations and sociodemographic characteristics of the subjects involved in the study. Research at FMC Bogor hospital shows a relationship between work stress and work performance. Data shows the number of beds 103 for hospitalization, plus the duties of nurses in poly and emergency rooms, to a total number of 76 nurses; this can be a source of imbalance between the number of patients, and the number of employees, can be a source of stress for nurses. Work stress at FMC hospitals is also related to time discipline when exchanging shifts based on interviews; often, colleagues arrive late even though it is time to change shifts. This is reinforced by the theory that high stress will form distress; when nurses experience distress, there will be a negative impact on health in the form of poor physical health so that the number of absences due to illness increases or mentally makes nurses feel uncomfortable working until they are not motivated, appear anxious or sad. The accumulation of any impact of high stress, according to this study, is that nurses are 11 times more likely to experience decreased work performance. Work performance decreases in nurses due to high stress; human resource recruitment steps can be carried out, and periodic evaluations related to stress levels so as to reduce stress levels in nurses and hospital services for the better.

4.1.2 Workload's Relationship to Work Performance

The results of the study based on Table 4.7 above show a p value of 0.84; it can be concluded that there is no relationship between workload and work performance. The results of this study are not in line with the research of Wicaksono A et al. in 2022 at Bogor Hospital, which shows the relationship between workload and work performance with a p value of 0.043 with a regression coefficient of β -0.1 which can be concluded that the high workload experienced by nurses will have an impact on decreasing work performance in nurses. Research also shows that the inability to deal with workload will cause performance to fall, which will have an impact on patient dissatisfaction with nurse services. (Wicaksono A, Rumengan G, et al in 2022). The results of similar studies on hospital nurses Prof. Soeharso Surakarta (p value 0.045) and hospital Dr. H. Andi Abdurrahman Noor (p value = 0.00) concluded that there is a relationship between workload and nurse work performance.

Research involving 128 nurses at the Mataram NTB general hospital showed no workload relationship to nurses' work performance. (Sari et al in 2021; Saputera, Suhermin in 2021). Research in line with the results of research by Astuti R et al. in 2018 showed a p value of 0.02 which means the relationship of workload to work performance with the theory that workload is the difference between job ability and job demands, researchers revealed that high workload will not make work performance drop because the ability of nurses at the place of researchers has worked according to standards.

The results of research conducted by FMC hospitals can be different because the dominant workload in medium-degree hospitals, with good working hours regulation divided into 3 shifts so that the most dominant workload can be medium workload instead of high workload, but in the interview results, it was found that there is a shift exchange time problem which is still often found late so that it becomes a source of workload for colleagues who have previously worked. The factor that supports the workload to be overcome by nurses is the ability of nurses' human resources to provide the ability to work according to the demands of hospital work standards so that workload is not a factor related to work performance in serving patients at FMC Bogor hospital.

4.1.3 Research Limitations

This study has limitations, including Data collection of independent and dependent variables by distributing questionnaires, which tend to be subjective and depends on the honesty of respondents in providing information.

5. Conclusion

Based on the results of the study, it can be concluded that the results of the univariate and bivariate analysis are as follows: The results of the univariate analysis for the distribution of characteristics showed that most respondents were female, with a total of 50 respondents (65.7%). The results of univariate analysis for the distribution of characteristics showed that most respondents were in the age range of 26-30 years, which was 46 people (60.5%). The results showed that the work stress of most nurses was high as

many as 41 respondents (53.9%). The results showed that the workload of most nurses was a medium workload of 55 respondents (72.4%). The results showed that the work performance of most nurses was good, with as many as 58 respondents (76.3%). The results showed that 31 nurses at FMC hospitals with high work stress had quite good work performance. The results also show that there is a relationship between work stress and work performance, namely p value 0.024, which means there is a relationship between work stress and work performance. The results showed 41 nurses with a moderate workload had good work performance. In the study, the results of the chi square test obtained p value = 0.84 > 0.05, so it can be concluded that there is no relationship between workload and work performance. The results of multivariate analysis with logistic regression showed that the work stress variable was associated with a p value of 0.011 with a risk of 11,014 times experiencing low work performance.

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