The Effect of Work Stress and Workload on The Performance Of Nurses In The Inpatient Installation Of Muhammadiyah Babat Lamongan Hospital

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ABSTRAK

This study aims to analyze the effect of work stress and workload on the performance of nurses in the Inpatient Unit of Muhammadiyah Babat Hospital. The research employs a quantitative method with a descriptive and associative approach. The sample consists of 36 nurses selected through a saturated sampling technique. Data were collected using a questionnaire that had been tested for validity and reliability, and then analyzed using the Statistical Package for the Social Sciences (SPSS) with multiple linear regression analysis. The results indicate that partially, work stress and workload have no significant effect on nurse performance, whereas simultaneously, both variables have a significant effect on performance. The coefficient of determination (R^2) of 33.4% shows that work stress and workload together explain the variability in nurse performance, while the remaining 66.6% is influenced by other factors outside the model. These findings suggest that there are other dominant factors influencing nurse performance. The results of this study are expected to serve as an empirical reference for academics in developing studies related to human resource management in the health sector, as well as a practical consideration for hospital management in designing strategies to improve the performance of nursing personnel in a more holistic and measurable manner.

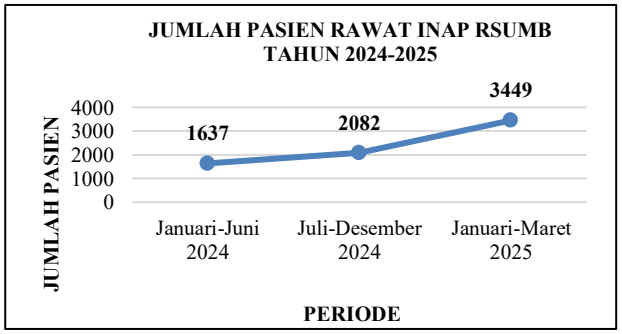
Keywords: *Work Stress, Workload, Performance*

INTRODUCTION

A hospital is a health facility that provides comprehensive health services, including inpatient, outpatient, and emergency services. As part of the service industry, hospitals play an important role in ensuring that people get the right to quality health services. One of the institutions that has contributed greatly in this field is Muhammadiyah Hospital, which is based on Islamic values and is part of Muhammadiyah Charity (AUM). (Amran *et al.,* 2021)

In Lamongan Regency there are four Muhammadiyah hospitals, one of which is Muhammadiyah Babat Hospital which has type C status and was established in 2020. As a relatively new hospital, RSU Muhammadiyah Babat faces various challenges in an effort to improve the quality of services and performance of health workers, especially nurses. (Syuhadi *et al.,* 2023)

Nurses are the largest health workers in hospitals who play an important role in providing services to patients (Muslim & Sutinah, 2020) . Nurses are health workers who work around the clock (24 hours) and are required to provide the best care (Will *et al.,* 2020) . However, they often face pressure due to the high number of patients, limited human resources, and long working hours, which can reduce performance. Based on pre-research interviews at the Inpatient Installation of Muhammadiyah Babat Hospital (December 27-28, 2024), nurses complained of high workload, lack of nursing staff, uncertain doctors' schedules, and limited rest time.



Source: RSUMB (2024)
Picture 1: Data on the number of hospitalized patients at RSUMB

Internal data from RSU Muhammadiyah Babat shows an increase in the number of inpatients from 1,637 patients (January-June 2024) to 2,082 patients (July-December 2024), and again to 3,449 patients (January-March 2025). The increase in the number of patients is not matched by the increase in the performance of nurses, which will actually decrease by 4.2% in 2024. The performance assessment was recorded at 52.1% in the January-June 2024 period, which then dropped to 47.9% in the July-December 2024 period. These conditions indicate excessive workload, fatigue, or a shortage of nurses that have the potential to affect nurse performance.

THEORETICAL FOUNDATION

1. Human Resource Management

Human resource management (HRM) is a part of general management that includes the activities of planning, organizing, implementing, and supervising the workforce, where people are seen as the main assets that need to be managed (Firmansyah, 2021) optimally. MSDM also includes the process of utilizing labor through functions such as workforce planning, recruitment, employee development, career planning, compensation, and employment relationship management (Sakti, 2023) . In addition, HR aims to maintain employee welfare and ensure that all employment activities run in accordance with legal provisions to achieve organizational and individual goals in a balanced manner (Metris, 2024).

2. Performance

In the theory developed by , it is explained that there is a relationship between arousal level (stress and workload) and a person's performance which is depicted through the (Yerkes & Dodson, 1908) *inverted U-curve pattern.* This theory states that performance will increase as arousal levels increase until they reach an optimal point, then decrease when the workload and stress exceed the individual's capacity. The indicators to determine the level of workload include:

a. *Underload Phase:* When the workload and work stress are too low, it will decrease motivation.
b. *Optimal Phase:* When the load and stress are at a balanced level that results in the best performance.
c. *Overload Phase:* When the load and stress exceed the individual's capacity, resulting in decreased performance due to physical and mental fatigue.

3. Work Stress

Karasek (1979) developed the *Job Demand-Control (JDC) Model* which is one of the main theories in explaining work stress. This theory states that stress levels are influenced by a combination of job demands and job control. The higher the demands of the job and the lower the control that the individual has, the more likely it is that work stress will arise. The main indicators in this theory include:

a. *Job Demands,* namely workload, time pressure, emotional pressure, and job complexity.
b. *Job Control,* which is the level of autonomy, flexibility, opportunity to use skills, and participation in decision-making.

Based on the interaction between the two dimensions, Karasek divides four categories of work:

a. *High Strain Jobs* (high demand, low control): High stress levels.
b. *Low Strain Jobs* (low demand, high control): Low stress level and stable conditions.
c. *Active Jobs* (high demand, high control): Optimal level of performance.
d. *Passive Jobs* (low demands, low control): Lowers motivation and job challenges.

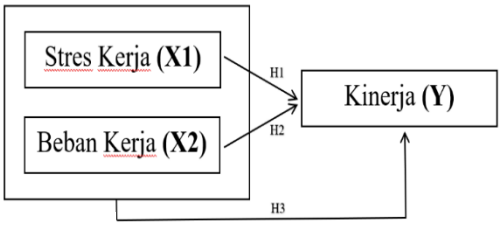
4. Workload

The *Multiple Resource Theory (MRT)* developed by explains that workload affects an individual's ability to complete tasks, especially when doing several activities simultaneously Wickens (2002) *(multitasking).* This theory states that humans have limited mental resources, where each task requires certain resources such as vision, hearing, language, comprehension, or motor movements. If two tasks use different resources, they can be performed simultaneously without significantly degrading performance. However, if two tasks use the same resource, there will be interference that can reduce the quality of performance. In its application, this theory is measured using *the NASA Task Load Index (NASA-TLX)* model developed by (Hart & Staveland, 1988). This instrument has six main indicators, namely:

a. *Mental Demand:* Mental demands in thinking and concentrating.
b. *Physical Demand:* The demands of physical force.
c. *Temporal Demand:* The time pressure to complete a task.
d. *Performance:* Perception of the achievement of work results.
e. *Effort:* The level of effort expended.

f. *Frustration Level:* The level of stress or dissatisfaction during work.

ANALYSIS MODEL



Picture 1. Analysis Model

H1: It is suspected that Work Stress has a negative effect on the Performance of Inpatient Installation Nurses at Muhammadiyah Babat Hospital.
H2: It is suspected that the workload has a negative effect on the Performance of the Inpatient Installation Nurses of Muhammadiyah Babat Hospital.
H3: It is suspected that Work Stress and Workload have a negative effect on the Performance of Inpatient Installation Nurses at Muhammadiyah Babat Hospital.

RESEARCH METHODS

This study uses a quantitative approach with descriptive and associative design to test the influence of work stress and workload on nurse performance. Data was collected through the distribution of questionnaires and interviews, then processed using the SPSS program. The research instrument used a five-point Likert scale on all variables. The research population consisted of 38 nurses in the Inpatient Installation of Muhammadiyah Babat Hospital, but only 36 nurses were used as samples because two of them served as the head of the room. The sampling technique used the saturated sampling method, while the data analysis was carried out by multiple linear regression test.

RESULT

1. Descriptive Analysis of Independent and Bound Variables

The results of the descriptive analysis based on respondents' responses showed that the work stress variable had 16 statements with a mean value between 3.14 and 3.92, which indicated that the nurse's work stress level was in the moderate category and still within reasonable limits. The workload variable has 12 statements with an average value ranging from 2.86 to 3.86, which shows that the workload of nurses is quite high but still tolerable. However, there is time pressure on some items which indicates the need for more optimal task management.

Meanwhile, the performance variable has 6 statements with an average value between 3.72 and 3.94, which falls into the high category, illustrating that nurses are able to carry out their duties effectively. Overall, these results suggest that work stress levels and a balanced workload contribute positively to improved nurse performance.

2. Test Research Instruments

a. Validity Test

The results of the validity test showed that all statement items in the three study variables, namely work stress, workload, and performance, had a calculated *r* value greater than *the r table* (0.329) at a significance level of 0.05. In the work stress variable, *the calculated r-value* ranges from 0.403 to 0.807. The workload variable has a *calculated r-value* between 0.409 to 0.756, while the performance variable shows a *calculated r-value* between 0.547 to 0.742.

These findings indicate that all statement items in the research instrument have met the validity criteria, so it can be concluded that the instrument used is able to measure each construct accurately and consistently in accordance with the research objectives

b. Reliability Test

The results of the reliability test showed that all study variables had *a Cronbach's Alpha* value above the minimum limit of 0.60, which was 0.913 for the work stress variable, 0.859 for the workload variable, and 0.721 for the performance variable. These values show that all statement items in the research instrument have a high level of

internal consistency. Thus, the instrument is declared reliable and trustworthy as a stable, consistent, and reliable measuring tool in collecting research data.

3. Classic Assumption Test

a. Normality Test

The results of the normality test using *the Kolmogorov-Smirnov* method showed *an Asymp value. The sig* is 0.200, which is greater than the significance level of 0.05. This shows that the residual data is normally distributed. Thus, the regression model used in this study meets the assumption of normality, so it can be used for further analysis.

b. Multicollinearity Test

The results of the multicollinearity test showed that the variables of work stress and workload had a VIF value of 2.256 (< 10) and a tolerance of 0.443 (> 0.10). These values indicate that there is no strong correlation between independent variables in the regression model. Thus, it can be concluded that this research model is free from multicollinearity problems, so that the relationship between independent and dependent variables can be analyzed accurately.

c. Heteroscedasticity Test

Based on the results of *the Glejser test, a* significance value of 0.207 was obtained for the work stress variable and 0.984 for the workload variable, both greater than 0.05. These results show that the regression model does not experience symptoms of heteroscedasticity, which means that the residual variance between observations is homogeneous. Thus, the regression model meets the assumption of homocedasticity and is feasible for multiple linear regression analysis.

4. Uji Hypothesis

a. T-test (partial)

Table 1. T-test (partial)

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Itself.
		B	Std. Error	Beta		
1	(Constant)	9.263	3.341		2.773	.009
	Work Stress (X1)	.094	.080	.253	1.186	.244
	Workload (x2)	.184	.108	.363	1.701	.098
a. Dependent Variable: Kinerja						

Based on the t-test table (partial), the work stress variable showed a significance value of 0.244 ($p > 0.05$) and a calculated t-value of 1.186, which is smaller than *the t* table of 2.034. These results indicated that work stress had no significant effect on nurse performance, so H1 was rejected.

Meanwhile, the workload variable had a significance value of 0.098 ($p > 0.05$) and a calculated t-value of 1.701, which is also smaller than *the t* table of 2.034. This shows that the workload does not have a significant effect on the performance of nurses, so H2 is also rejected.

Overall, *the results of the t-test* showed that neither work stress nor workload had a significant partial effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital. This can be caused because the level of stress and workload experienced is still within the tolerance limit, so it does not directly hinder the performance of the nurse.

b. F test (simultaneous)

Table 2. F test (simultaneous)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Itself.
1	Regression	72.972	2	36.486	8.259	.001b
	Residual	145.778	33	4.418		
	Total	218.750	35			
a. Dependent Variable: Kinerja						
b. Predictors: (Constant), Workload, Work Stress						

Based on the results of the analysis, the F value of the calculation was obtained of 8.259, which is greater than the F of the table of 3.276, with a significance value of 0.001 ($p < 0.05$). This shows that work stress and workload simultaneously have a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital. These findings indicate that the combination of work stress levels and workload plays an important role in determining nurse performance. Although each variable did not have a significant effect, together they showed a strong relationship with performance. This emphasizes that balanced stress and workload management is a crucial factor in maintaining and improving the performance of nurses in the hospital environment.

c. Coefficient of Determination Test (*R2*)

Table 3. Coefficient Determination Test

Model Summaryb				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578a	.334	.293	2.10179
a. Predictors: (Constant), Workload, Work Stress				

Based on table 4.15 in the determination coefficient test, the R Square *(R^2) value* of 0.334 shows that the independent variable in the regression model is able to explain 33.4% of the dependent variables. Meanwhile, 66.6% were influenced by other factors that were not included in this model such as work environment support, motivation, compensation, job satisfaction, leadership style, and other variables that may have an influence but were not studied in this study.

DISCUSSION

1. The Effect of Work Stress on Nurse Performance

The results of the study showed that work stress did not have a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital. These findings indicate that the level of stress experienced by nurses is still at manageable limits, so it does not decrease performance. The ability of nurses to control work pressure and adapt to the workload are factors that keep performance stable

This phenomenon is in accordance with *the Job Demand–Job Control* Karasek (1979) theory which explains that a person with a high level of job control is able to manage work pressure more effectively, so that the impact of stress on performance is minimal. In addition, these results support research that confirms that well-managed work stress can have a positive impact on performance improvement. Kusuma *et al.,* (2021)

However, there are indications that some nurses are still feeling pressure due to the high number of patients and the many requests from patients and families. This shows the importance of workload management and proportional distribution of nursing personnel so that work pressure does not result in stress that negatively impacts nurse performance.

2. The Effect of Workload on Nurse Performance

The results of the study showed that the workload did not have a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital. These findings indicate that although nurses face high job demands, the condition can still be managed well so that it does not negatively impact performance. Nurses are able to adjust, maintain emotional stability, and maintain professionalism in carrying out their duties.

These results are in line with research that states that a moderate workload can actually increase productivity, while an excessive workload will decrease performance. This phenomenon can be explained through Stuart O'T *et al.,* (2023) *Multiple Resource Theory* Wickens (2002) which explains that when a person is faced with many tasks at the same time, cognitive capacity will be divided and potentially lead to fatigue and decreased performance.

However, some nurses still feel pressure due to limited time in completing nursing procedures due to the high number of patients. This condition shows the need for more effective time management, proportional division of tasks, and additional nursing personnel.

3. The Effect of Work Stress and Workload on Nurse Performance

The results of the study showed that work stress and workload simultaneously had a significant positive effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital. This indicates that pressure and workload within reasonable limits can actually be a driving factor for nurses to increase their focus, responsibility, and professional skills. These conditions describe the *"optimal" phase* according to the theory in which a balanced stress level is able to increase motivation and performance. Yerkes & Dodson (1908)

However, when workloads increase beyond individual capacity, performance tends to decline due to the appearance of physical and mental fatigue *(overload phase).* These findings are consistent with previous research by

Hernandez & Garcia (2022) and Tambunan & Rahmatia (2024) which showed that health care worker performance decreases when the ratio of patients to nurses is unbalanced.

Therefore, it is important for hospital management to maintain a balance of workload and provide managerial support, as well as improve the competence and physical fitness of nurses in order to remain in optimal working conditions. Although there was a slight decrease in performance of 4.2%, the condition was still relatively normal and showed that nurses were still able to adapt to work pressures.

CONCLUSIONS AND SUGGESTIONS

1. Conclusion

Based on the results of data analysis and discussion on the influence of work stress and workload on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital, the following conclusions can be drawn:

a. Partial work stress did not have a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital, with a significance value of 0.244 ($p > 0.05$). This suggests that work stress does not have a significant role in affecting the performance of individual nurses.
b. The workload did not have a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital, with a significance value of 0.098 ($p > 0.05$). This shows that the workload experienced by nurses does not directly affect the performance of nurses.
c. Work stress and workload simultaneously had a significant effect on the performance of nurses in the Inpatient Installation of Muhammadiyah Babat Hospital, with a significance value of 0.001 ($p < 0.05$). This shows that both variables together have a contribution to nurse performance.

2. Suggestion

Because there are still some nurses who experience quite heavy workloads due to the high number of patients, mental demands, and time pressure due to the many tasks that must be completed at the same time. Therefore, it is recommended to the management of RSU Muhammadiyah Babat to improve the quality of nurse human resources through the right strategy, with the following steps:

a. Increase in the number of medical personnel to adjust the ratio of the number of nurses to patients.
b. Provide enough rest time while working to prevent fatigue.
c. Avoid overly busy work schedules so that nurses have sufficient physical and mental recovery time
d. An even distribution of tasks with a nursing team approach.
e. Provide time management training to prioritize tasks based on patient needs.

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