

ORIGINAL ARTICLE

The Effect of Workload, Work shift and Work duration to Work Fatigue of Inpatient Nurses at Gambiran Hospital Kediri City

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ABSTRACT

Background: Fatigue is a common problem in both formal and informal workplaces. World Health Organization (WHO) states that mental disorders in workers such as feelings of excessive fatigue lead to depression and are the second most common disease after heart disease. Work fatigue is a common problem in the workplace that is often encountered in the workforce and is a problem that requires attention. This study aims to Analyze the influence of workload, work shifts and work duration to work fatigue of inpatient nurses at Gambiran Regional Hospital, Kediri City. **Methods:** This research is quantitative with cross-sectional design, population in this research were all inpatient nurses total 174 nurses at Gambiran Hospital Kediri City. Based on slovin formula, sample in this research was 103 respondents. Data collection using questionnaire distributed directly to inpatient nurse, then analysis using multiple linier regression. **Results:** The regression analysis shows that workload and work duration significantly affect work fatigue among inpatient nurses at Gambiran Hospital, while work shifts do not. Work duration has the greatest influence, indicating that longer working hours increase fatigue more than workload. These findings align with previous studies showing that heavy workload and prolonged working hours contribute to nurse fatigue, whereas well-managed shift systems may mitigate its impact. **Conclusions:** The regression test results show that work duration has the greatest influence followed by workload, suggesting the need for further research on work fatigue with different variables among nurses in the Emergency Installation Room or Intensive Care Unit.

Keywords: Work fatigue, Workload, Work shift, Work duration, Hospital

INTRODUCTION

Fatigue is a common problem in both formal and informal workplaces. The World Health Organization (WHO) states that mental disorders in workers such as feelings of excessive fatigue lead to depression and are the second most common disease after heart disease. Work fatigue is a common problem in the workplace that is often found in workers and is a problem that must be addressed (Kurnia, 2023).

According to data from the International Labor Organization (ILO), work must be protected from diseases and injuries arising from work. There are 2.02 million people who die each year due to work-related accidents or diseases and 317 million

people suffer from fatal and non-fatal work-related diseases per year. Work fatigue is a factor that contributes 50 percent or more to the occurrence of work accidents (Hesti et al, 2023).

In Indonesia, every day there are an average of 414 work accidents, 27.8 percent of which are caused by high levels of fatigue. Data on work accidents published by the Indonesian National Police in 2012 in Indonesia, every day there are an average of 847 work accidents, 36 percent of which are caused by high levels of fatigue. Approximately 18 percent or 152 people are disabled. (Hesti. 2023). Fatigue is a multifaceted concept. The review found that many studies used only one measure to indicate fatigue. This is because there may be other factors contributing to fatigue levels that were not

measured or controlled. For example, the use of work hours did not take into account the quantity and quality of sleep in the previous 24 hours. In general, the review found that the data were collected based on hours worked, quantity and quality of sleep, and fatigue levels (Tracey et al, 2022).

Nurse workload is a dimension of all activities carried out by nurses while on duty in a health unit to provide nursing services quickly, carefully and accurately within the specified time, an unbalanced workload has a negative impact on nurses. (Shieva, 2019). A high workload will cause stress at work, lack of concentration in nurses and can cause complaints from patients, resulting in high levels of absenteeism in nurses. While a low workload will cause boredom and loss of focus on work (Koesoemowidjojo, 2017). Nurses workload can cause negative effects on patients, nurses and the health care system, such as decreased quality of service, increased risk of nursing errors, decreased patient satisfaction, nurse anxiety, nurse work stress, risk of infection, longer length of stay and risk of death (Handri et al, 2021).

Several studies say that the highest fatigue phenomenon in nurses in hospitals occurs in night shift nurses due to the physiological impact of poor sleep quality and disruption to the nurse's circadian rhythm which can cause fatigue in hospital staff. Work fatigue in nurses in hospitals can result in work accidents or decreased work productivity, in doing work such as serving patients, handling patients and changing IVs. Nurses often experience weakness, dizziness, drowsiness, headaches and yawning which are signs of fatigue. Fatigue can result in decreased work ability and body ability of workers (Amalya, 2022).

Heavy workload and sleep disturbances influenced by lack of sleep and disturbances in circadian rhythms due to shift work are the most frequent causes of work fatigue in nurses (Rusdi, 2014). The relationship between work fatigue and work duration, the longer a person works the more fatigue a person experiences without any preventive efforts to reduce the onset of fatigue (Setyawati, 2011).

Work fatigue can be reduced through various efforts to improve overall health and the physical environment in the workplace. Many things can be done such as providing a variety of working hours, adequate rest opportunities, providing space to relax and vacation time (Panghestu, 2024). Re-arranging the work shift schedule for nurses can also be done to lighten the workload and reduce the length of working hours, and fatigue management is needed for each nurse in order to prevent and inhibit the increase in complaints of work fatigue (Kamilia, 2022). This study aims to analyze the effect of workload, work shifts and work duration at Gambiran General Hospital Kediri.

METHODS

The research design used in this study is a quantitative method with a cross-sectional approach. The population in this study were all inpatient nurses totaling 174 respondents at Gambiran Regional Hospital Kediri. The sample in this study was determined using the Slovin formula, so that 103 nurses were obtained. The sampling technique used was simple random sampling. The variables studied in this study consisted of dependent and independent variables. The dependent variable in this study is work fatigue. Independent variables include workload, work shift and work duration. This study was conducted in February 2025 at Gambiran General Hospital Kediri. The data analysis method used was multiple linear regression.

RESULTS AND DISCUSSION

The results show that the p-value of 0.321 (>0.05) indicates that the data are normally distributed. Furthermore, the multicollinearity test (Table 1) reveals that all variables—workload, work shift, and work duration—have tolerance values greater than 0.1 (10%) and VIF values less than 10, suggesting that no multicollinearity exists in the regression model. Therefore, the data are considered valid and appropriate for further testing.

Table 1. Multicollinearity Test Result

Variable	VIF
Workload	1.018
Work Shift	1.042
Work Duration	1.037

Heteroscedasticity test results can be seen in table 2. The results show that all the variables of workload, workshift and workduration have a p value >0.05 which means that there is no heteroscedasticity problem, so it can be concluded that the regression model in this study is feasible to use and heteroscedasticity does not occur.

Table 2. Heteroscedasticity Test Results

Variable	t	P value
Workload	.273	0.785
Work Shift	-.577	0.565
Work Duration	.066	0.947

The results show that the linearity test can be seen that the p value > 0.05, it concludes that the linearity test assumption has been met. The result of the multiple linier regression test can be seen in table 3. Based on the regression equation formed in this regression test is: $Y=41.162 +0.057X1-0.616X2+0.356X3$

Tabel 3. Multiple Linear Regression Tes Results

Variable	B	t	P value
(Constant)	41.162	134.607	0.000
Workload	0.057	6.953	0.000
Work Shift	-0.616	-11.541	0.000
Work Duration	0.356	4.825	0.000

The value of the equation, it can be seen that:

- The alpha value = 41.622 shows the intercept or constant value in connecting the work fatigue variable (Y) with the workload variable (X1), work shift (X2), and work duration at (X3), this shows the point of intersection of the regression line with the Y axis when the values of the two independent variables are coefficients.
- Beta 1 value for the workload variable value (X1) is 0.057, which means that every increase in the positive workload variable by 1 unit will increase work fatigue (Y) by 0.057.

- Beta 2 value for the workshift variable value (X1) is -0.616, which means that every increase in the negative work shift variable by 1 unit will increase work fatigue (Y) by -0.616
- Beta 3 value for the work duration variable value (X1) is 0.356, which means that every increase in the positive work duration variable by 1 unit will increase work fatigue (Y) by 0.356

Workload and work duration have a significant effect on work fatigue of inpatient nurses at Gambiran Kediri General Hospital, while work shifts do not have a significant effect on work fatigue of inpatient nurses at Gambiran Kediri General Hospital.

This study is in line with previous research conducted by Andi and Agnesia, (2024) on nurses in the inpatient ward of the Haji Makassar Regional Hospital. The results of the study showed that workload affected the work fatigue of inpatient nurses. Workload is included in the factors that influence the occurrence of work fatigue, workload is a burden obtained from the activities carried out by a person. A heavy workload will affect nurse fatigue, where if the work that must be completed is so much, it takes a lot of time and energy to complete it, thus making someone feel tired in doing the job (Pada et al, 2019).

According to the researcher's assumption, nurses who work in the inpatient room at Gambiran Kediri Regional Hospital can easily experience work fatigue because nurses have greater job responsibilities by working 24 hours a day for 7 days with a work shift system, so that the nurse's workload can also increase. The problem of workload is also faced by nurses where the number of nurses is not comparable to the amount of work that must be completed.

Work duration has a greater influence on nurse work fatigue, work duration can cause work fatigue if someone works for a long time. This study is in line with previous research conducted by Anisya and Radha (2024) on nurses at the Muhammad Sani Regional General Hospital, Karimun Regency. The results of the study showed that there was a relationship between work duration and work fatigue.

According to the researcher's assumption, the excessive work duration that occurs in inpatient nurses at Gambiran Kediri General Hospital is caused by the large amount of work and has not been completed, besides that it occurs because of the lack of nursing staff so that the nurses have to work beyond normal working hours.

Work shifts do not have a significant effect on work fatigue of inpatient nurses at Gambiran Kediri General Hospital. This study is in line with previous research conducted by Nursehan (2021) on nurses in the inpatient ward of the Adventist Hospital Bandar Lampung. The results of the study showed that there was no significant relationship between work shifts and work fatigue.

According to the researcher's assumption, one of the main reasons that can explain this finding is that nurses at Gambiran Kediri Regional General Hospital may have a good shift work time management system and support from hospital management in terms of shift worktime division. For example, the existence of an even shift time division and fair work shift rotation can help reduce work pressure with shift work.

CONCLUSIONS

The results of the study showed that workload and work duration had a statistically significant influence on the work fatigue of inpatient nurses at the Gambiran General Hospital Kediri. While there is no significant influence of work shifts on inpatient nurse work fatigue at Gambiran General Hospital, Kediri. Based on these findings, it is suggested that hospital management optimize nurse scheduling and redistribute workload to prevent excessive fatigue. Further research is needed on work fatigue with different research variables on nurses in Emergency Installation Room or Intensive Care Unit.

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