



THE EFFECTS OF WORKLOAD AND SHIFT WORK ON NURSES' WORK STRESS AT MAYJEND HM RYACUDU REGIONAL GENERAL HOSPITAL

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Abstract:

Nurses face continuous service demands, complex clinical responsibilities, and rotating work schedules that may increase occupational stress. This study examined the effects of workload and shift work on nurses' work stress at Mayjend HM Ryacudu Regional General Hospital, North Lampung Regency. A quantitative design using descriptive and verification approaches was applied. The entire population of 105 nurses was included through saturated sampling. Data were collected through observation, questionnaires, and documentation and were analyzed using validity and reliability tests, a normality test, multiple linear regression, partial t-tests, a simultaneous F-test, and the coefficient of determination. Workload had a positive and significant effect on work stress ($t = 3.294$; $p = 0.001$), while shift work also had a positive and significant effect ($t = 19.277$; $p < 0.001$). Simultaneously, workload and shift work significantly affected work stress ($F = 1,264.762$; $p < 0.001$). The model explained 96.1% of the variance in nurses' work stress, while 3.9% was attributable to factors outside the model. These findings highlight the need for proportional workload distribution, balanced shift scheduling, and adequate recovery time to support nurses' well-being and service quality.

Keywords: workload, shift work, work stress, nurses

INTRODUCTION

Hospitals are required to provide optimal and continuous services 24 hours a day. Within this system, nurses are the health professionals who interact most frequently and directly with patients and their families. The intensity of care, responsibility for patient safety, and need to respond rapidly to clinical conditions make the nursing profession vulnerable to physical and psychological pressure. Poorly managed work stress can reduce concentration, impair workers' health, and affect the quality of health services (Robbins & Judge, 2023; World Health Organization, 2020).

Work stress is a state of tension that affects emotions, thought processes, and physical condition when job demands are perceived to exceed an individual's abilities or resources. In nursing services, such pressure may arise from the number of patients, the complexity of procedures, administrative demands, emotional interactions with patients and families, and the obligation to complete tasks within a limited time. Therefore, workload is an important factor that must be managed so that quantitative and qualitative demands remain balanced with



nurses' capacities (Manuaba, 2024; Schultz & Schultz, 2020).

In addition to workload, shift work is a defining feature of hospital services. The division of working hours into morning, afternoon, and night shifts enables continuous service delivery; however, an imbalanced rotation may disrupt sleep patterns, biological rhythms, recovery time, and workers' social lives. These conditions can trigger fatigue, reduced concentration, and increased psychological pressure, particularly when night shifts are staffed by a limited number of personnel or when rest intervals are inadequate (Suma'mur, 2024; Tarwaka, 2020).

A preliminary assessment of nurses at Mayjend HM Ryacudu Regional General Hospital, North Lampung Regency, revealed complaints of fatigue when patient numbers increased, sleep disturbances due to schedule changes, headaches, anxiety when tasks accumulated, and difficulty balancing work and family responsibilities. The number of nurses on night shifts was also perceived to be lower than on other shifts, even though the accuracy of medication administration and patient care had to be maintained. These conditions indicate that workload and shift arrangements may act as mutually reinforcing sources of stress.

Previous studies cited in the thesis manuscript indicate that workload is associated with nurses' work stress and that rotating work systems are associated with fatigue and psychological disturbances. However, empirical evidence may vary across hospitals because of differences in patient volume, assignment patterns, and shift policies. The research gap lies in the need to examine both factors partially and simultaneously among all nurses at Mayjend HM Ryacudu Regional General Hospital. Accordingly, this study aimed to analyze the effects of workload and shift work on nurses' work stress, both individually and jointly.

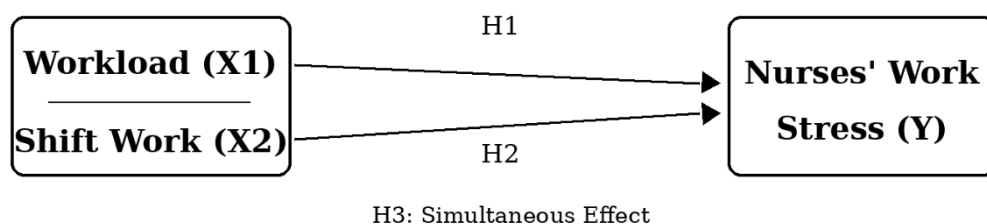


Figure 1. Conceptual framework of the relationships among the research variables

RESEARCH METHOD

This study used a quantitative design with descriptive and verification approaches. The descriptive approach was used to describe the conditions of the research variables, while the verification approach was used to test hypotheses concerning the effects of workload and shift work on work stress. The study was conducted at Mayjend HM Ryacudu Regional General Hospital, North Lampung Regency.

The study population consisted of 105 nurses. Because the entire population was accessible, saturated sampling was applied, and all population members were included as respondents (Sugiyono, 2022). Primary data were obtained

through observation and questionnaires, while documentation was used as supporting data. Questionnaire items were measured using a five-point Likert scale ranging from strongly disagree to strongly agree.

The independent variables were workload (X1) and shift work (X2), while the dependent variable was work stress (Y). Workload refers to task demands that must be completed in accordance with physical and mental capacities and available working time. Shift work refers to rotating work schedules designed to maintain 24-hour service. Work stress is the physical and psychological tension that arises when job demands exceed an individual's ability to cope.

Table 1. Operationalization of the Research Variables

Variable	Role	Operational Definition
Workload (X1)	Independent	Nurses' task demands based on quantity, complexity, physical and mental capacity, and the time available to complete the work.
Shift Work (X2)	Independent	Morning, afternoon, and night rotating work schedules designed to ensure that hospital services operate 24 hours a day.
Work Stress (Y)	Dependent	Emotional, cognitive, and physical tension caused by job demands that exceed an individual's capacity.

Data were analyzed using SPSS. The procedures included descriptive statistics, validity testing, Cronbach's alpha reliability testing, the Kolmogorov-Smirnov normality test, multiple linear regression, the t-test for partial effects, the F-test for simultaneous effects, and the coefficient of determination (R^2). The instrument was considered valid when the calculated r value exceeded the critical r value of 0.192 and reliable when Cronbach's alpha was greater than 0.60 (Azwar, 2021; Ghazali, 2020). Hypothesis decisions were made at a 5% significance level.

FINDINGS AND DISCUSSION

Instrument Quality and Analytical Assumptions

The test results showed that all questionnaire items for workload, shift work, and work stress had correlation coefficients greater than the critical r value of 0.192; therefore, the instrument was declared valid. Cronbach's alpha values for all variables were also above the 0.60 threshold, indicating internal consistency. The Kolmogorov-Smirnov test produced significance values above 0.05 for all variables, indicating that the data were normally distributed and that parametric analysis could proceed.

Table 2. Summary of Reliability and Normality Tests

Variable	Cronbach's alpha	Normality Sig.	Decision
Workload (X1)	0.911	0.200	Reliable; normal
Shift Work (X2)	0.890	0.199	Reliable; normal
Work Stress (Y)	0.896	0.200	Reliable; normal

Hypothesis Testing

The partial tests showed that workload had a positive and significant effect on nurses' work stress, with $t = 3.294$ and $p = 0.001$. Shift work also had a positive

and significant effect on work stress, with $t = 19.277$ and $p < 0.001$. Thus, the hypotheses concerning the effect of each independent variable on work stress were supported.

Simultaneously, workload and shift work had a significant effect on work stress. The F value of 1,264.762 with $p < 0.001$ indicated that the overall regression model was appropriate for explaining variations in respondents' work stress. The coefficient of determination of 0.961 showed that 96.1% of the variation in work stress within the sample was explained by workload and shift work, while the remaining 3.9% was associated with factors not included in the model.

Table 3. Summary of Hypothesis Testing Results

Hypothesis	Test	Statistic	Significance	Decision
H1: Workload → work stress	t-test	$t = 3.294$	0.001	Supported
H2: Shift work → work stress	t-test	$t = 19.277$	< 0.001	Supported
H3: Workload & shift work → work stress	F-test	$F = 1,264.762$	< 0.001	Supported

Effect of Workload on Work Stress

The positive effect of workload on work stress indicates that increased task demands tend to be followed by greater pressure perceived by nurses. When the quantity and complexity of work are not proportionate to the available time, energy, or support, nurses must expend greater physical and mental effort. This situation can lead to fatigue, impaired concentration, emotional tension, and difficulty recovering after work. The finding is consistent with Manuaba (2024) and Munandar (2014), who state that workload should be adjusted to workers' capacities to prevent it from developing into fatigue and stress.

In the context of Mayjend HM Ryacudu Regional General Hospital, initial complaints concerning high patient numbers, continuously accumulating tasks, and limited assistance at certain times reinforce the statistical findings. Consequently, workload evaluation should not be based solely on the number of nurses; it should also consider patient dependency levels, the complexity of procedures, administrative burdens, and the distribution of work across units and shifts.

Effect of Shift Work on Work Stress

Shift work had a positive and significant effect on work stress because rotating schedules alter nurses' sleep patterns, rest time, and social interactions. Overly rapid rotation, consecutive night shifts, or short intervals between shifts may reduce recovery time. Suma'mur (2024) and Tarwaka (2020) explain that disruptions to biological rhythms and fatigue caused by rotating work can reduce both physical and mental readiness. This study is also consistent with Wulan's (2020) findings concerning the relationship between physical workload and stress among inpatient nurses.

Respondents' complaints of sleep disturbances, fatigue, anxiety, and work-family conflict demonstrate that shift arrangements have consequences beyond working hours. Therefore, scheduling should consider the equitable distribution

of night shifts, limits on consecutive working days, adequate rest intervals, and schedule-exchange mechanisms that maintain sufficient staffing in each unit.

Simultaneous Effects and Managerial Implications

The simultaneous effects indicate that work stress is not the consequence of a single factor. A high workload may become more burdensome when performed during shifts that interfere with recovery time. Conversely, a well-designed rotating schedule may not effectively reduce stress when the quantity and complexity of tasks remain disproportionate. Therefore, management interventions should integrate workforce planning, patient distribution, schedule design, rest periods, supervisory support, and intershift communication systems.

The high coefficient of determination demonstrates the strong association of the two variables with work stress in the study sample. However, the findings should be interpreted within the limitations of a single-hospital design and perception-based questionnaire data. Other factors, such as the work environment, organizational support, work-family conflict, burnout, job satisfaction, and service-unit characteristics, remain relevant for future research. Stress management may also be strengthened through supportive supervision, access to counseling, fatigue-management education, and a workplace culture that encourages the reporting of excessive workloads without stigma (Rizaldi, 2021).

CONCLUSION

This study concludes that workload and shift work each have a positive and significant effect on nurses' work stress at Mayjend HM Ryacudu Regional General Hospital, North Lampung Regency. The two variables also have a significant simultaneous effect and explain 96.1% of the variation in respondents' work stress. These findings emphasize that improving nurses' well-being requires the integrated management of task loads and work schedules rather than separate interventions. Hospital management is advised to evaluate workload distribution based on patient numbers and complexity, ensure sufficient staffing on every shift, limit consecutive night shifts, and provide adequate rest time and psychosocial support. Future research should include multiple locations, use objective measures of workload and shift patterns, and incorporate the work environment, organizational support, work-family conflict, burnout, and job satisfaction to provide a more comprehensive understanding of nurses' work stress.

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