

## ORIGINAL ARTICLE

# The psychosocial factors associated with work stress among inpatient psychiatric nurses at RSJD Dr. Amino Gondohutomo Semarang: A cross-sectional study

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### ABSTRACT

**Introduction:** Nurses in psychiatric inpatient wards must remain highly alert because patient behavior can be unpredictable and potentially risky. Despite the demanding work environment, research on psychosocial factors associated with work stress among psychiatric nurses remains limited in Southeast Asia and other low- and middle-income countries (LMICs).

**Objectives:** This study aims to determine the relationships among mental workload, colleague support, and work shifts with work stress among female nurses working in the psychiatric inpatient ward at RSJD Dr. Amino Gondohutomo Semarang.

**Methods:** This quantitative analytic study used a cross-sectional study design. The population consisted of 111 female psychiatric inpatient nurses, and 60 respondents were selected through proportional sampling. Data were collected using structured questionnaires and analyzed using chi-square tests.

**Results:** Of the respondents, 38.3% experienced mild work stress, 51.7% reported low coworker support, and 38.4% had low mental workload. Nurses who frequently worked evening or night shifts reported a higher proportion of work stress than those on regular shifts. Significant associations were found between mental workload ( $p=0.008$ ), coworker support ( $p=0.002$ ), and shift work ( $p=0.043$ ) and work stress.

**Conclusion:** Work stress among psychiatric nurses is shaped by workload, peer support, and shift patterns, underscoring the need for a comprehensive psychosocial approach. Beyond individual coping strategies, such as maintaining adequate rest, organizational measures are essential to reduce work stress and enhance the quality of psychiatric nursing services. These measures include optimizing shift schedules, strengthening peer support, and ensuring adequate staffing.

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## 1. Introduction

The implementation of occupational safety and health (OSH) management systems plays an important role in ensuring a safe and productive work environment. According to the Regulation of the Minister of Manpower of the Republic of Indonesia Number 26 of 2014 concerning the Assessment of Occupational Safety and Health Management System Implementation, OSH management systems integrate various organizational components, including policies, procedures, planning, responsibilities, and resource allocation, to control workplace risks and maintain worker safety and health (Lusiana et al., 2018). The implementation of OSH management systems aims to minimize the occurrence of occupational accidents and work-related illnesses while promoting a safe and efficient working environment (Anggia et al., 2020).

Hospitals are complex healthcare institutions that provide a wide range of medical services, including preventive, curative, promotive, and rehabilitative care. As part of the

healthcare system, hospitals operate through various service units such as inpatient wards, outpatient clinics, and emergency departments that directly interact with patients. With the increasing demand for healthcare services, hospitals must ensure that their human resources are able to provide high-quality care. Human resources, particularly nurses, play a critical role in delivering healthcare services because they interact with patients more frequently than other healthcare professionals (Veronica et al., 2021). The heavy workload and responsibilities associated with nursing practice can influence nurses' productivity and overall job performance (Kartika et al., 2018; Rahman et al., 2024).

Work stress has become a significant global occupational health issue. In England, approximately 385,000 cases of work-related stress have been reported, while in Wales the number ranges between 11,000 and 26,000 cases (Macphee et al., 2017). Reports from the American National Association for Occupational Health indicate that nurses rank among the occupations with the highest levels of work-related stress and are also at risk of experiencing minor psychiatric disorders and depression (Luo et al., 2025). In Indonesia, the Indonesian National Nurses Association reported that 50.9% of nurses experience work stress, often characterized by symptoms such as dizziness, fatigue, irritability, lack of rest due to excessive workloads, and dissatisfaction with income. Studies in several countries have also documented high levels of stress among nurses. For instance, research in Taiwan found that 17.2% of nurses reported experiencing significant stress frequently, and 45.1% had encountered workplace assault in the previous six months (Shen et al., 2005). Similarly, a survey in China reported that 68.3% of nurses experienced high levels of work-related stress (Teles et al., 2014). High work stress among nurses may lead to various physical and psychological health problems, including headaches, insomnia, anxiety, and depression, which can ultimately affect the quality of healthcare services (Park et al., 2021; Tselebis et al., 2020).

The work environment of psychiatric nurses differs from that of nurses in general hospitals. While nurses in general hospitals primarily focus on patients' physical health, psychiatric nurses are responsible for addressing both psychological and behavioral conditions of patients. Psychiatric patients may exhibit unpredictable or aggressive behavior, requiring nurses to maintain high levels of patience, vigilance, and communication skills during care delivery (Elizar et al., 2019). Effective communication between nurses and patients is considered an important therapeutic component in psychiatric care. However, the emotional demands and unpredictable behavior of psychiatric patients may increase the risk of occupational stress among nurses. Excessive workload may further affect nurses' job performance, leading to difficulties in completing tasks, multitasking pressure, and reduced work productivity (Murni et al., 2024).

Several psychosocial factors may contribute to work stress among nurses, including mental workload, shift work schedules, and social support from colleagues. Psychiatric inpatient wards often require nurses to work rotating shifts and night shifts, which may disrupt sleep patterns and increase fatigue. In addition, the demanding nature of psychiatric care may intensify mental workload. Previous research has shown that psychosocial factors such as job demands, work schedules, and social support can significantly influence stress levels among healthcare workers (Junaković et al., 2021).

Despite increasing research on occupational stress among nurses, studies focusing specifically on psychiatric nurses remain limited, particularly in Southeast Asia and other low- and middle-income countries. International literature indicates that nurses frequently experience psychosocial pressures such as heavy workloads, insufficient peer support, and irregular shift schedules. However, most existing studies are conducted in high-income countries and may not fully reflect working conditions in Southeast Asian healthcare settings (Herz et al., 2025; Thapa et al., 2022). Research in Southeast Asia has reported high levels of burnout, anxiety, and psychological distress among healthcare workers, but relatively few studies have examined the combined influence of workload, shift work, and coworker support on stress among psychiatric nurses (Teo et al., 2022). Furthermore, theoretical frameworks such as the Job Demand-Control-Support Model and the Job Demands-Resources Model have rarely been applied in psychiatric nursing research in Indonesia, creating a theoretical gap in understanding occupational stress in this context (Li et al., 2025).

A preliminary survey conducted by the researchers involved interviews with three nurses working in the psychiatric inpatient ward at RSJD Dr. Amino Gondohutomo Semarang. The nurses reported experiencing work-related stress caused by heavy job demands, sleep disturbances due to night shifts, and the need to manage unpredictable patient behavior. Interviews with the Head of the Nursing Department also indicated that shift work arrangements were a major factor contributing to work stress. Night shifts in particular were reported to be longer than other shifts, with only two nurses assigned to each shift, which increased fatigue and disrupted sleep patterns. Nurses also reported experiencing aggressive patient behavior such as being scratched or physically assaulted during care delivery.

RSJD Dr. Amino Gondohutomo Semarang is a major psychiatric hospital in Central Java Province that provides a wide range of services, including psychiatric treatment, rehabilitation, laboratory services, pharmacy services, mental health counseling, and infection control services. The hospital employs approximately 240 nurses consisting of civil servants, contract staff, and non-civil servants. Considering the demanding nature of psychiatric nursing work and the potential psychosocial pressures faced by nurses, it is important to understand the factors that contribute to work stress in this setting.

Therefore, this study aims to analyze the relationship between mental workload, coworker support, and shift work with the occurrence of work stress among female nurses working in the psychiatric inpatient ward at RSJD Dr. Amino Gondohutomo Semarang.

## 2. Methods

This study employed a quantitative research design with a cross-sectional approach. A cross-sectional design was chosen because it allows the simultaneous measurement of exposure variables and outcomes within a specific population at a single point in time. In this study, psychosocial factors including mental workload, shift work, and coworker support were assessed alongside the outcome variable of work stress among psychiatric nurses. This design is commonly used in occupational health research because it allows researchers to examine associations between workplace factors and health outcomes efficiently within a limited time frame.

The study was conducted at RSJD Dr. Amino Gondohutomo Semarang, a psychiatric hospital located in Central Java Province, Indonesia. The study population consisted of 111 female nurses working in psychiatric inpatient wards. Inclusion criteria included female nurses who had worked in psychiatric inpatient units for at least two years and were actively involved in patient care during the study period. A minimum work experience of two years was required to ensure that respondents had sufficient exposure to the psychosocial demands of psychiatric nursing practice.

The sample size was calculated using Slovin's formula, resulting in a sample of 60 respondents. Proportional sampling was applied to ensure representation from each inpatient ward. Primary data were collected directly from respondents using structured questionnaires administered by the researchers. Prior to data collection, the researchers coordinated with hospital management to obtain a list of nurses working in psychiatric inpatient wards for the 2023–2024 period. Potential respondents were approached individually and provided with information about the study. Nurses who agreed to participate signed an informed consent form before completing the questionnaire.

The independent variables in this study included mental workload, coworker support, and shift work, while the dependent variable was work stress. Mental workload was measured using the NASA Task Load Index (NASA-TLX), which evaluates six dimensions including mental demand, physical demand, temporal demand, performance, effort, and frustration. Each dimension is rated on a scale of 0–100. Work stress was measured using the General Health Questionnaire (GHQ-12), which consists of 12 items scored on a Likert scale ranging from 0 to 3. Higher scores indicate greater levels of psychological distress. Coworker support was assessed using a 12-item questionnaire scored on a four-point Likert scale ranging from strongly disagree to strongly agree.

All instruments were translated into Indonesian using a forward–backward translation process to ensure linguistic accuracy. Content validity was reviewed by three experts in psychiatric nursing and occupational health. A pilot study was conducted among 20 psychiatric

nurses in a similar hospital to evaluate clarity and cultural relevance of the questionnaire. Reliability testing demonstrated good internal consistency for all instruments, with Cronbach’s alpha values of 0.877 for NASA-TLX, 0.765 for GHQ-12, and 0.780 for the coworker support scale.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS). Univariate analysis was used to describe the distribution of respondent characteristics and study variables. Bivariate analysis using the Chi-square test was conducted to examine the relationship between psychosocial factors and work stress. Statistical significance was determined at a p-value of less than 0.05. Ethical approval for this study was obtained from the Ethics Committee of RSJD Dr. Amino Gondohutomo Semarang and the Faculty of Public Health, Diponegoro University. Ethical principles including confidentiality, voluntary participation, and informed consent were maintained throughout the study.

### 3. Results and Discussion

#### Univariate Analysis

Univariate analysis was conducted to examine the variables obtained from the study, resulting in the distribution and percentage of each variable. Meanwhile, bivariate analysis was applied to evaluate the relationship between independent and dependent variables. Additionally, nurses often complain of dizziness after working the night shifts due to insufficient sleep, causing changes in their sleep patterns whether there is a statistically significant association using the Chi-Square test. This test is considered significant if the p-value < 0.05, indicating that there is a statistically meaningful relationship.

The data in Table 1 shows that female nurses at RSJD Dr. Amino Gondohutomo Semarang experience a low level of mental workload, which accounts for 38.3%. Then, the negative support from colleagues is more prevalent, at 51.7%, compared to positive support from colleagues, which is 48.3%. Furthermore, based on the work shifts of female nurses at RSJD Dr. Amino Gondohutomo Semarang, the majority work the night shift. The percentage of work stress among nurses is 41.7%. Furthermore, work stress among female nurses at RSJD Dr. Amino Gondohutomo Semarang is dominated by nurses experiencing mild work stress, which is 38.3%.

Table 1. Univariate Analysis Based on Mental Workload, Colleague Support, Shift Work, and Work Stress (n=60)

Variable	Category	Frequency	Percentage
Mental Workload	High	17	28,3
	Medium	20	33,3
	Low	23	38,4
Colleague Support	Negative	31	51,7
	Positive	29	48,3
Shift Work	Morning Shift	25	41,7
	Afternoon Shift	20	33,3
	Night Shift	15	25,0
Work Stress	High	17	28,3
	Medium	23	38,3
	Not Experiencing Work Stress	20	33,3
Total		60	

#### Bivariate Analysis

According to Table 2, nurses with elevated mental workload experience high work stress (58.8%) compared to nurses with a moderate mental workload (10%) and low mental workload (21.8%). The analysis results using the Chi-Square test show a p-value with a significance level ( $\alpha$ ) of 0.05. Based on these results, a p-value of 0.008 ( $p \leq 0.05$ ) was obtained, which is below the determined significance level. Therefore, it can be concluded that there is a significant relationship between mental workload and the work stress experienced by female nurses at RSJD Dr. Amino

Gondohutomo Semarang. Furthermore, nurses who perceive negative support from colleagues experience mild work stress (58.7%) compared to nurses who perceive positive support from colleagues (19.3%). The analysis using the Chi-Square test yields a p-value with a significance level ( $\alpha$ ) of 0.05. Based on these results, a p-value = 0.002 ( $p \leq 0.05$ ), which is below the specified significance level. Therefore, it can be concluded that there is a significant relationship between peer support and work stress experienced by female nurses at RSJD Dr. Amino Gondohutomo Semarang.

Then, nurses working the night shift experience a high level of work-related stress (53.3%) compared to nurses working the morning shift (24%) and afternoon shift (15%). The analysis using the Chi-Square test showed a p-value with a significance level ( $\alpha$ ) of 0.05. Based on these results, a p-value of 0.043 ( $p \leq 0.05$ ) was obtained, which is below the predetermined significance level. Therefore, it can be concluded that there is a significant relationship between shift work and the work-related stress experienced by female nurses at RSJD Dr. Amino Gondohutomo Semarang.

Table 2. Bivariate Analysis with Work Stress Complaints (n=60)

Variable	Work Stress			Total
	High	Medium	Not Experiencing Work Stress	
<b>Mental Workload</b>				
High	10 (58,8%)	3 (17,7%)	4 (23,5%)	17 (100%)
Medium	2 (10%)	8 (40%)	10 (50%)	20 (100%)
Low	5 (21,8%)	12 (52,1%)	6 (26,1%)	23 (100%)
<b>Colleague Support</b>				
Negative	3 (10,3%)	17 (58,7%)	9 (31,1%)	29 (100%)
Positive	14 (45,2%)	6 (19,3%)	11 (35,5%)	31 (100%)
<b>Shift Work</b>				
Morning Shift	6 (24%)	13 (52%)	6 (24%)	25 (100%)
Afternoon Shift	3 (15%)	7 (35%)	10 (50%)	20 (100%)
Night Shift	8 (53,3%)	3 (20%)	4 (26,7%)	15 (100%)

Table 3. Results of Chi-Square Analysis Between Independent and Dependent Variables (n=60)

Independent Variable	Dependent Variable	p-value	Conclusion
Mental Workload	Work Stress	0,008	The was a significant relationship between mental workload and work stress
Colleague Support	Work Stress	0,002	The was a significant relationship between colleague support and work stress
Shift Work	Work Stress	0,043	The was a significant relationship between shift work and work stress

This study's results indicate that female nurses in psychiatric inpatient units face high level work-related stress, mainly due to intense mental workload and difficult patient situations. Nurses with low mental workload had a higher prevalence of work-related stress compared to those with high mental workload (PR= 2,15; 95% CI: 1,32-3,49). Many nurses indicated they frequently deal with uncooperative patients, raising their emotional stress levels, while also handling dual responsibilities at home with limited family support. Furthermore, working rotating shifts intensifies their stress levels because of inconsistent rest schedules and disturbed work-life harmony. These stressors ultimately lead to decreased work productivity, suggesting that both occupational demands and personal-role pressures together impact the psychological health and performance of psychiatric nurses. Nursing staff working in psychiatric environments frequently encounter substantial mental workloads because of their responsibilities, such as

handling patient anxiety, complaints, and defense mechanisms. There is a positive correlation between high mental workload and increased stress levels in inpatient nurses at Hospital Malang City, with p-value 0,002 (Fikri et al., 2024)

Workload can be interpreted as a gap between a worker's capacity and the job demands that must be met. Meanwhile, mental workload can be understood as cognitive activity involving various aspects, such as perception and interpretation, in performing tasks. Work stress is generally triggered by task demands that exceed the worker's abilities, excessive workload, overly large responsibilities, and a work environment that is physically unsupportive (Natalia et al., 2017). This is reinforced by the demand control model developed by Robert Karasek (1979), which posits that the relationship between job demands and worker control is associated with work stress and health, working with high demands but low control will cause stress and health problems. Nurses working in mental hospitals provide nursing care that prioritizes the patient's mental health over physical health without compromising physical health. The patient's mental state, which can sometimes be unstable and unpredictable, requires nurses to have high patience in providing nursing care according to the patient's illness (Purwandari, 2015). The nurse's communication skills in interacting with patients are essential because communication is a key part of the healing process for patients with mental disorders. Additionally, nurses must be more alert and cautious when providing care due to the unpredictable and risky behavior of patients with mental disorders (Musni et al., 2024). According to this research, it was found that the majority of female nurses working at RSJD Dr. Amino Gondohutomo Semarang experience a low level of mental workload. The responsibilities of a nurse often include features that generate high levels of stress. Such qualities encompass a strict work schedule and preparedness to work whenever needed. During a shift, it is not uncommon for one nurse to care for as many as 8 to 10 patients (Al Fanani et al., 2023). Based on the interviews conducted, the causes of the perceived workload are the significant mental activity demands required during work in the inpatient psychiatric ward.

Nurses working in the inpatient psychiatric ward have the responsibility to handle patients with various diagnoses and sometimes uncooperative attitudes. Colleague support is a motivating system that occurs among colleagues to inspire other workers. Another understanding of peer support is individuals or groups of demands that depend on their who support the work being carried out in a reciprocal manner. In work, peer support means that employees mutually help each other by sharing knowledge and experience as well as providing support and encouragement. Forms of support that colleagues can provide include offering assistance by giving advice, guidance, or information in problem-solving (Damaianty et al., 2021). In this study, it was found that the majority of female nurses working at RSJD Dr. Amino Gondohutomo Semarang experience negative support from colleagues. Nurse who did not receive coworker support had a higher prevalence of work stress compared to nurses who received coworker support (PR= 2,22; 95% CI: 1, 4 – 3,50). Nurse communication also involves cooperation among nurses, doctors, and patient happens in a professional, ethical, and responsible manner through collaboration. This is because with social support, a nurse receives advice or positive impressions that are useful for solving problems. Therefore, a nurse who receives optimal support from colleagues to have a low level of stress because the nurse will feel it to discuss their problems with colleagues.

Shift work is a work schedule scheme provided by the company to its employees. It is usually divided into several hours, such as morning, afternoon, and night shifts. Due to the investment in machines that must be used continuously, day and night, to achieve optimal results, the proportion of shift workers has increased every year. As a result, workers are required to work during the day and night. For workers who find it difficult to adapt to regular work schedules, this can cause a number of problems (Amir et al., 2019). Based on this research, nurses participated in questionnaires, conducted directly by 2-3 people. This indicates an imbalance in the ratio between the number of nurses and patients. Nurses who worked night shift had a higher prevalence of work stress compared to nurses who worked morning and afternoon shift (PR = 2, 13; 95% CI: 1,30 – 3,45). This explanation is supported by a study conducted by Rahmatia Sari at the Southeast Sulawesi Provincial Mental Hospital in 2016, which found that work-related stress

is caused by the imbalance between the number of nurses and patients, with a ratio of 1:10. Meanwhile, to achieve good quality service, the ideal ratio between nurses and patients should be 1:2 or 3, meaning one nurse provides care to two patients (Marandeni et al., 2023). For psychiatric nurses, night shift is especially stressful and can have serious repercussions on their physical and mental health. Nurses working night shifts in psychiatric settings often deal with added challenges like erratic patient behaviors, elevated risks of violence, and limited staffing, which necessitate sustained vigilance and swift decision-making despite decreased alertness. Over the course of time, these factors induce psychological pressure, expressed through irritability, emotional weariness, and a decrease in empathy towards patients. Occupational burnout, characterized by depersonalization and decreased sense of personal success, is strongly related to the stress caused by night shifts (Chen et al., 2025)

Someone who works for a certain period outside of normal working hours is known as a shift worker. In such conditions, the body must quickly adjust to the shift system, which can cause stress. Shift workers, especially those working at night, experience disruptions in their biological cycles, which can lead to decreased ability and endurance, as well as a higher likelihood of vehicle or workplace accidents. Additionally, night shift workers tend to experience decreased concentration, memory, and critical thinking skills due to poor quality sleep.

Hospital and government institutions should, at the policy level, establish just shift rotation systems that limit consecutive night shifts and provide structured mental health support, including counseling and stress debriefing sessions. To reduce workload imbalance, it is also important to increase nursing staffing in the psychiatric unit and establish welfare policies such as risk-based incentives. In addition, encouraging family involvement through support strategies is essential to increase understanding of the occupational demands faced by psychiatric nurses, thereby strengthening social support networks beyond the workplace. Implementing these interventions collectively is critical for reducing stress, improving the well-being of nurses, and maintaining high-quality psychiatric care.

This study has several limitations. First, the study design was cross sectional, meaning that variables were measured at a single point in time and could not establish a temporal causal relationship between the factors studied and levels of work stress. Second, this study did not compare respondents' marital status, so differences in work stress levels based on these social conditions could not be analyzed in depth. Third, this study did not compare work stress level across hospital work units, so variations in work stress that may occur across service units in the mental hospital could not be comprehensively identified.

#### 4. Conclusion

This study shows that nurses working in inpatient wards at RSJD Dr. Amino Gondohutomo Semarang experience low mental workload (38.4%), receive negative support from colleagues (51.7%), and have mild work-related stress (38.3%). Furthermore, analysis indicates a significant relationship between mental workload ( $p = 0.008$ ), colleague support ( $p = 0.002$ ), and shift work ( $p = 0.043$ ) and work-related stress. These findings highlight that occupational stress among psychiatric nurses is shaped not only by physical workload, but also by broader psychosocial factors such as interpersonal support and shift-related strain. This underscores the importance of adopting a comprehensive psychosocial approach in managing psychiatric nursing environments.

The results imply that structured coping strategies outside working hours, including relaxation practices and light physical exercise, may help reduce shift-related stress and improve nurses' well-being and performance. At the organizational level, hospital management should strengthen peer support networks, optimize staffing across shifts, and implement systematic stress management programs. Such initiatives have the potential to enhance psychological well-being, reduce burnout risk, and improve the overall quality of psychiatric nursing services.

To broaden the evidence base, future studies are recommended to employ longitudinal designs to observe changes in stress over time, especially in high-stress units such as psychiatric wards, emergency departments, and intensive care units. Intervention studies evaluating peer support programs or modified shift schedules, as well as mixed-method research exploring

nurses' subjective experiences, would further enrich understanding of how psychosocial factors influence work stress in psychiatric settings.

### **Ethics approval and consent to participate**

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee of RSJD Dr. Amino Gondohutomo Semarang (Ethical Clearance No. 420/5750/2024) and the Ethics Committee of the Faculty of Public Health, Diponegoro University (No. 292/EA/KEPK-FKM/2024). Prior to data collection, all participants were provided with detailed information regarding the study objectives, procedures, potential risks, and benefits. Participation in the study was entirely voluntary, and written informed consent was obtained from all respondents before their involvement in the research. Participants were assured that their responses would remain confidential and that all collected data would be used solely for research purposes. Respondents were also informed that they had the right to withdraw from the study at any time without any consequences.

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