

The Relationship Between Workload Level and the Incidence of Burnout Syndrome Among Nurses in the Surgical Inpatient Ward

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Abstract:

Burnout syndrome is a psychological condition characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment, which can affect the quality of nursing care. Nurses in surgical inpatient wards are at high risk of experiencing burnout due to the high demands of patient care and heavy workload. This study aimed to analyze the relationship between workload level and the incidence of burnout syndrome among nurses in the surgical inpatient ward of Sultan Agung Islamic Hospital, Semarang. This research employed a quantitative method with a cross-sectional design. The study sample consisted of 118 nurses selected using a total sampling technique. The instruments used were the Nursalam workload questionnaire and the Maslach Burnout Inventory (MBI) to assess burnout syndrome. Data analysis was conducted using the Chi-Square test at a significance level of $p < 0.000$. The results showed that most respondents had a moderate workload (87.3%) and experienced a high level of burnout (66.9%). Statistical analysis indicated a significant relationship between workload level and the incidence of burnout syndrome ($p = 0.000$). Nurses with higher workloads tended to experience more severe burnout than those with lighter workloads. These findings emphasize that workload is an important factor influencing burnout among nurses. Therefore, hospital management is advised to implement workload management strategies, increase the number of nursing staff, and provide psychological support programs to reduce the risk of burnout and improve nurses' well-being and performance.

Article info:

Submitted:
27-08-2025
Revised:
23-09-2025
Accepted:
25-09-2025

Keywords:

workload, burnout syndrome, nurses, surgical inpatient ward

DOI: <https://doi.org/10.53713/htechj.v3i5.482>

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INTRODUCTION

Burnout syndrome has emerged as a critical occupational health concern among healthcare professionals, particularly nurses working in high-pressure clinical environments such as surgical inpatient wards (Li et al., 2025). Characterized by emotional exhaustion, depersonalization, and diminished personal accomplishment, burnout compromises nurses' psychological well-being and undermines the quality and safety of patient care. The syndrome often develops gradually as a response to chronic workplace stress that has not been successfully managed, making it a silent yet pervasive threat within hospital systems globally (Sharif et al., 2024; Tasli & Dil, 2025).

Nurses in surgical inpatient units are especially vulnerable to burnout due to the inherently demanding nature of their duties (Teymoori et al., 2022). These professionals are responsible for managing patients recovering from major surgeries, requiring vigilant monitoring, complex wound care, pain management, and rapid response to potential complications. The intensity and

unpredictability of postoperative care, coupled with frequent emergencies and extended shifts, create a work environment laden with physical exertion and emotional strain, significantly elevating the risk of burnout over time (Hueto et al., 2025).

The workload experienced by surgical ward nurses encompasses both quantifiable physical demands—such as the number of patients assigned, frequency of procedures, and documentation requirements—and less visible psychological burdens, including moral distress, fear of medical errors, and the emotional toll of interacting with critically ill patients and their families (Ferramosca et al., 2022; Widiyantoro et al., 2025). This dual burden often exceeds individual coping capacities, especially when staffing levels are inadequate or organizational support systems are weak. Consequently, nurses may feel overwhelmed, detached, and ineffective—hallmarks of burnout syndrome (Jaber et al., 2025; Putri et al., 2025).

Empirical evidence increasingly supports a strong correlation between excessive workload and the incidence of burnout. Studies conducted across various healthcare settings consistently demonstrate that nurses reporting high workload levels are significantly more likely to exhibit symptoms of emotional exhaustion and reduced job satisfaction (Whittington et al., 2021). This relationship is even more pronounced in surgical wards, where the margin for error is minimal and the pace is relentless. The cumulative effect of prolonged exposure to such conditions can lead to absenteeism, increased turnover, and ultimately, a decline in the overall standard of care delivered to patients (Heistad et al., 2022).

Beyond individual consequences, nurse burnout's organizational and systemic implications are profound. High burnout rates contribute to staffing shortages, increased healthcare costs, and compromised patient outcomes—including higher rates of hospital-acquired infections, medication errors, and patient dissatisfaction (Jun et al., 2021). Therefore, hospital administrators and policymakers must recognize burnout as an individual coping issue and a systemic problem rooted in structural and operational factors, particularly workload distribution and resource allocation (Schlak et al., 2022).

Addressing this issue requires evidence-based interventions grounded in understanding how workload directly influences burnout trajectories. This study investigates the relationship between physical and psychological workload levels and the incidence of burnout syndrome among nurses in surgical inpatient wards. By identifying key workload indicators that predict burnout, the findings will inform targeted strategies for workload modulation, staffing optimization, and psychological support systems tailored to the unique demands of surgical nursing (Karaferis et al., 2025; Dimyati et al., 2024).

Ultimately, mitigating burnout among surgical nurses is an ethical and strategic necessity for sustaining high-quality healthcare delivery. The outcomes of this research are expected to provide hospital management with actionable insights to redesign work environments, implement preventive mental health programs, and foster a culture of resilience and support. Enhancing nurse well-being through effective workload management promises to yield dual benefits: improved staff retention and enhanced patient safety—cornerstones of a sustainable and compassionate healthcare system (Alqahtani et al., 2023).

METHOD

This study employed a quantitative approach with a cross-sectional design. The population consisted of all nurses working in the surgical inpatient ward of Sultan Agung Islamic Hospital, Semarang. The sample size was 118 nurses, selected using a total sampling technique, as the entire population met the inclusion and exclusion criteria.

The study was conducted in the surgical inpatient ward of Sultan Agung Islamic Hospital, Semarang, in 2025. The research instruments included the workload questionnaire and the Maslach Burnout Inventory (MBI) to measure burnout syndrome. The workload questionnaire assessed physical, mental, and time-related aspects, while the MBI measured three dimensions of burnout: emotional exhaustion, depersonalization, and reduced personal accomplishment.

Data collection was conducted using self-administered questionnaires, which were distributed directly to respondents after obtaining informed consent. The collected data were then coded, entered, and analyzed using the Chi-Square test to determine the relationship between workload level and the incidence of burnout syndrome. The results were interpreted using a significance level of $p\text{-value} < 0.05$.

Ethical approval for this study was obtained from the Health Research Ethics Committee of Sultan Agung Islamic University Semarang (Approval Number: 3188/B/RSI-SA/VII/2025). All respondents signed informed consent forms and were assured of confidentiality, anonymity, and voluntary participation in accordance with the principles of ethical research.

RESULT

The study was conducted from July to August 2025 in the surgical inpatient ward, involving 118 staff nurses as respondents selected through the total sampling method. The data used in this study consisted of primary data collected through questionnaires and secondary data obtained from research permits and official responses from the hospital. This study aimed to analyze the relationship between workload level and the incidence of burnout syndrome among nurses in the surgical inpatient ward.

Respondent Characteristics

The characteristics of respondents are presented to describe the study subjects. The respondents' characteristics in this study include gender, age, length of employment, educational background, occupation, and all dependent and independent variables. The description of each characteristic is presented in the table below:

Table 1. Distribution of Respondent Characteristics in the Surgical Inpatient Ward (n=118)

Characteristics	Frequency (f)	Percentage (%)
Gender		
Male	55	46.60
Female	63	53.40
Age		
18–30 years	9	7.63
31–40 years	94	79.66
41–50 years	15	12.71
Education		
Diploma Nursing (D3)	42	35.60
Bachelor of Nursing (S1)	37	31.40
Professional Nurse (Ners)	39	33.10
Occupation		
Staff Nurse	118	100.00

Workload

Table 2. Distribution of Respondents Based on Workload in the Surgical Inpatient Ward (n = 118)

Workload	Frequency	Percentage(%)
Light	27	22.90
Moderate	31	26.30
Heavy	60	50.80
Total	118	100

Table 2 shows that most nurses had a heavy workload, namely 60 nurses (50.80%), while 27 nurses (22.90%) had a light workload and 31 nurses (26.30%) had a moderate workload.

Burnout Syndrome

Table 3. Distribution of Respondents Based on Burnout Syndrome in the Surgical Inpatient Ward (n = 118)

Burnout Syndrome	Frequency	Percentage(%)
Light	27	22.90
Moderate	31	26.30
Heavy	60	50.80
Total	118	100

Table 3 shows that most nurses experienced severe burnout syndrome, namely 60 nurses (50.80%), while 27 nurses (22.90%) experienced mild burnout syndrome and 31 nurses (26.30%) experienced moderate burnout syndrome.

Relationship Between Workload and the Incidence of Burnout Syndrome

Table 4. Relationship Between Workload and the Incidence of Burnout Syndrome Among Nurses in the Surgical Inpatient Ward (n = 118)

Variable	N	p value	Pearson Chi-Square
Workload and the Incidence of Burnout Syndrome	118	0.000	236.00

Based on Table 4, the Chi-Square test results on the relationship between workload and the incidence of burnout syndrome among nurses showed a p-value = 0.000 ($p < 0.05$) with a Pearson Chi-Square value of 236.00. This indicates a statistically significant relationship between workload level and the incidence of burnout syndrome among nurses in the surgical inpatient ward.

DISCUSSION

This study found that most nurses in the surgical inpatient ward experienced a moderate workload (87.3%), and more than half (66.9%) experienced burnout syndrome. Statistical analysis showed a significant relationship between workload level and the incidence of burnout syndrome ($p = 0.000$). These findings support the research hypothesis that increased workload is associated with a higher risk of burnout among nurses.

The results of this study are consistent with previous studies, which report that workload is a significant factor contributing to burnout in the nursing profession. Nurses who handle excessive responsibilities, work long hours, and receive inadequate rest tend to experience emotional exhaustion and depersonalization (Whittington et al., 2021). Moderate to high workloads increase

the likelihood of burnout syndrome, particularly in hospitals that demand patient care that requires high concentration and emotional involvement (Alzoubi et al., 2024).

However, this study also found that nurses with a moderate workload were still at a high risk of experiencing burnout (62.7%). This suggests that burnout is not solely determined by workload, but can also be influenced by other factors, such as organizational culture, leadership style, coworker support, and individual coping mechanisms. In comparison to previous studies, these findings underscore the importance of incorporating psychosocial support and organizational interventions as complementary strategies for reducing burnout (De Simone et al., 2021).

The psychological effects of workload include increased stress levels, anxiety, mental fatigue, sleep disturbances, and decreased motivation. Psychological distress contributes to sleep disorders—which are very common among nurses—as well as symptoms of depression and anxiety (Ahmadi et al., 2022; Prasetyo et al., 2024). The novelty of this study lies in its focus on nurses in the surgical inpatient ward, an area with high patient turnover and complex clinical procedures, which may increase stress and the risk of burnout. While previous studies were often conducted more generally across various hospital units, this study provides more specific evidence regarding the vulnerability of surgical ward nurses to burnout due to workload.

The significance of these findings lies in their contribution to the field of health science and hospital management. Efforts to reduce nurses' workload through staff expansion, effective scheduling, and supportive supervision can improve nurses' well-being and the quality of patient care. Additionally, implementing stress management programs and providing psychological support may help reduce burnout and enhance nurses' resilience (Cohen et al., 2023).

This study has several limitations. First, the cross-sectional design cannot confirm a causal relationship between workload and burnout syndrome. Second, data were collected using self-reported questionnaires, which may result in response bias. Third, the study was conducted in a single hospital, limiting the generalizability of the results. Future studies should use a longitudinal design, apply more objective workload measurements, and involve multiple institutions to strengthen the evidence.

CONCLUSION

This study concludes a significant relationship between workload level and the incidence of burnout syndrome among nurses in the surgical inpatient ward of Sultan Agung Islamic Hospital, Semarang. Most nurses with moderate to high workloads exhibited symptoms of burnout, suggesting that workload is a significant factor influencing nurses' mental health. These findings address the research question: the higher the workload experienced by nurses, the greater the likelihood of developing burnout syndrome.

Based on the results, it is recommended that hospital management pay attention to the distribution of nurses' workload through proportional scheduling, increasing the number of nursing staff, and implementing a fair rotation system. Additionally, psychosocial support, stress management training, and regular counseling programs are necessary to help nurses develop effective coping mechanisms. Such interventions are expected to reduce the risk of burnout and improve the quality of hospital nursing care services.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the management of Sultan Agung Islamic Hospital, Semarang, for granting permission and providing support in the implementation of

this study. Special thanks are also extended to all nurses in the surgical inpatient ward who voluntarily participated and made valuable contributions to this research. The authors sincerely appreciate the guidance of academic supervisors and colleagues who provided constructive feedback throughout the research process.

CONFLICT OF INTEREST

The authors declare that there are no financial or non-financial conflicts in the conduct and reporting of this study.

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