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Occupational Stress Among Nurses: An ENSS-Based Analysis at X Hospital, Boyolali in 2024

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ABSTRACT

Work-related stress among nurses remains a significant issue in Indonesia. According to a 2018 survey conducted by the Indonesian National Nurses Association (PPNI), approximately 50.9% of nurses in Indonesia experience occupational stress. This study aims to identify the contributing factors of work-related stress among nurses based on the Expanded Nursing Stress Scale (ENSS), which includes nine subscales: death and dying, conflict with physicians, inadequate preparation, problems with peers, problems with supervisors, uncertainty concerning treatment, problems with patients, workload, and discrimination. This research employed a cross-sectional study design with a sample of 76 nurses. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and bootstrapping techniques. The findings revealed that the three main constructs contributing most significantly to work-related stress were problems with supervisors (β = 0.224; p = 0.000), workload (β = 0.211; p = 0.000), and uncertainty concerning treatment (β = 0.201; p = 0.000). In contrast, discrimination did not show a significant effect (p = 0.232). In conclusion, problems with supervisors, workload, and uncertainty in treatment are the primary causes of work-related stress among nurses at Hospital X, Boyolali Regency, in 2024.
Keyword: *Expanded Nursing Stress Scale (ENSS), Nurses, Occupational Stress.*

ABSTRAK

Stres kerja pada perawat masih menjadi masalah serius di Indonesia. Berdasarkan survei Persatuan Perawat Nasional Indonesia (PPNI) tahun 2018, sekitar 50,9% perawat di Indonesia mengalami stres kerja. Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor penyebab stres kerja pada perawat berdasarkan *Expanded Nursing Stress Scale* (ENSS) yang mencakup sembilan subskala, yaitu: kematian dan sekarat, konflik dengan dokter, kurangnya persiapan, permasalahan dengan rekan kerja, permasalahan dengan atasan, ketidakpastian pengobatan, permasalahan dengan pasien, beban kerja, dan diskriminasi. Desain penelitian ini adalah *cross-sectional* dengan jumlah sampel sebanyak 76 perawat. Analisis data dilakukan menggunakan metode *Partial Least Square Structural Equation Modeling* (PLS-SEM) dan *bootstrapping*. Hasil penelitian menunjukkan bahwa tiga konstruk utama yang paling berkontribusi terhadap stres kerja adalah permasalahan dengan atasan (β = 0,224; p = 0,000), beban kerja (β = 0,211; p = 0,000), dan ketidakpastian pengobatan (β = 0,201; p = 0,000). Sementara itu, diskriminasi tidak menunjukkan pengaruh yang signifikan terhadap stres kerja (p = 0,232). Dengan demikian, dapat disimpulkan bahwa permasalahan dengan atasan, beban kerja, dan ketidakpastian pengobatan merupakan penyebab utama stres kerja pada perawat di Rumah Sakit X, Kabupaten Boyolali, pada tahun 2024.
Kata Kunci: Expanded Nursing Stress Scale (ENSS), Perawat, Stres Kerja.

Introduction

Occupational stress is widely recognized as a psychosocial hazard arising from a variety of sources in the work environment, including work organization, job design, working conditions, and peer relationships (ILO 2016; CDC 2022; ILO 2017). It arises when the demands of the job are out of balance with workers' knowledge, skills, coping abilities, or resources, or when they exceed the capacity of individuals or groups to meet the expectations of the company and its organizational culture. According to the International Labor Organization (ILO), job stress is an adverse physical and emotional response resulting from an imbalance between perceived job demands and an individual's perception of abilities and resources to deal with them (CDC 2022; ILO 2017; 2016).

The work environment in hospitals is one of the significant sources of stress for nurses, where high physical and mental demands are a burden that they must bear every day. Not only are nurses required to perform physical tasks such as assisting with patient mobilization, maintaining hygiene, and handling medical equipment, but they must also be able to provide emotional and spiritual support, especially to patients in critical or post-operative conditions (Shaifuddin et al. 2025; Mariana and Ramie 2021; Karina, Zulkifli, and Novrikasari 2021).

The Indonesian National Nurses Association (PPNI) survey in 2018 showed that 50.9% of nurses experience work stress, which is reinforced by local data such as in Banda Aceh (52.5% in 2017)(Afra and Putra 2017), Manado (54.3% in 2016)(Thio 2016), and RSUD Madani Palu (43.6% of nurses with high work stress out of 149 respondents in 2024)(Ladamu and Harisa 2025). In East Jakarta, the prevalence of job stress ranged from 45% to 65%, particularly in the inpatient ward. Among new nurses, 68.4% experienced severe job stress (Yana 2015).

Contributing factors include excessive workload, administrative duties, night shifts, lack of confidence, and frequent patient complaints. Nurses in emergency and inpatient units tend to experience higher levels of stress than those in outpatient units. The East Java study also found that job stress was significantly correlated with higher levels of anxiety and lower quality of life. Demographically, job stress was more common among nurses aged 26-35 years, with more than five years of experience, female, and married, with the main problems coming from relationships with superiors, workload, and conflicts with doctors or coworkers(Susanto et al. 2025; Hidayati, Denny, and Nugraheni 2025; Ladamu and Harisa 2025; Thio 2016).

Although numerous studies have been conducted, the use of an analytical quantitative approach based on PLS-SEM that integrates the nine ENSS subscales into a single structural model using primary data from local hospitals—particularly in the Central Java region in 2024—remains limited. This study aims to identify factors that cause occupational stress in nurses based on ENSS, which consists of nine subscales: Death and Dying, Conflict with Doctor, Inadequate Preparation, Problems with Coworkers, Problems with Supervisor, Uncertainty of Treatment, Problems with Patients, Workload, and Discrimination.

Methods

This study was an observational study with a cross-sectional approach aimed at analyzing factors causing occupational stress among nurses based on constructs in the Expanded Nursing Stress Scale (ENSS) questionnaire in X Hospital. The sample consisted of a minimum of 76 respondents, determined using a sample size formula for cross-sectional studies with a 95% confidence level and a 10% margin of error. The sampling technique used was non-probability sampling, involving only nurses working in isolation wards for infectious diseases. The research instrument was the Indonesian version of the ENSS questionnaire, previously validated by other researchers (Harsono, 2017), consisting of 57 items. The questionnaire was divided into nine subscales, namely: Death and Dying (items 1, 9, 17, 27, 37, 47, 53), Conflict with Doctors (items 2, 10, 28, 38, 48), Inadequate Preparation (items 3, 11, 19), Problems with Coworkers (items 4, 12, 20, 21, 22, 50), Problems with Supervisor (items 5, 30, 31, 40, 46, 49, 54), Treatment Uncertainty (items 6, 14, 18, 24, 29, 33, 36, 39, 43), Problems with Patients (items 7, 15, 25, 34, 35, 44, 52, 56), Workload (items 13, 23, 32, 41, 42, 45, 51, 55, 57), and Discrimination (items 8, 16, 26). Each item was rated using a Likert scale, and the results were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the contribution of each construct to occupational stress. The analysis was conducted using SmartPLS version 4.0. This study was registered with the Semarang State University Health Research Ethics Commission with number 123/KEPK/EC/2023.

Result and Discussion

Table 1. Characteristics of Respondents (N=76)

Characteristic	Frequency (f)	Percentage (%)
Gender		
Male	12	15.8
Female	64	84.2
Educational Level		
Diploma in Nursing (D3)	55	72.4
Bachelor of Nursing (S1)	12	15.8
Bachelor + Professional Nurse Program	9	11.8

Table 1 showed that the majority of respondents in this study were female nurses, totaling 64 individuals (84.2%), while male nurses accounted for 12 individuals (15.8%). In terms of educational background, most nurses held a diploma in nursing (D3), comprising 55 individuals (72.4%), followed by those with a bachelor's degree in nursing (S1) at 12 individuals (15.8%), and those with both a bachelor's degree and professional nurse qualification (Ners) at 9 individuals (11.8%). These findings indicated that the majority of nurses at Hospital X were women with a D3 Nursing educational background.

Table 2. Results of Path Coefficients Bootstrapping between ENSS Constructs and Occupational Stress

ENSS Construct	Path Coefficient	t-statistik	p-value	CI 95% (Bias Corrected)
Workload (X1)	0.211	12.514	0.000	0.182 – 0.241

Discrimination (X2)	0.017	1.195	0.232	-0.042 – 0.033
Problems with Patients (X3)	0.097	7.865	0.000	0.072 – 0.116
Treatment Uncertainty (X4)	0.201	14.38	0.000	0.175 – 0.228
Problems with Supervisor (X5)	0.224	9.569	0.000	0.185 – 0.278
Problems with Coworkers (X6)	0.112	5.268	0.000	0.083 – 0.171
Inadequate Preparation (X7)	0.090	7.536	0.000	0.069 – 0.116
Conflict with Doctors (X8)	0.081	6.781	0.000	0.058 – 0.104
Death and Dying (X9)	0.134	7.142	0.000	0.104 – 0.180

Based on the bootstrapping results in Table 2, most of the ENSS constructs showed a significant effect on occupational stress among nurses. The construct with the strongest influence was Problems with Supervisor (X5) with a path coefficient of 0.224, t-statistic of 9.569, and p-value of 0.000, followed by Workload (X1) ($\beta = 0.211$; $t = 12.514$; $p = 0.000$) and Treatment Uncertainty (X4) ($\beta = 0.201$; $t = 14.38$; $p = 0.000$). In addition, constructs such as Death and Dying (X9), Problems with Coworkers (X6), Inadequate Preparation (X7), Conflict with Doctors (X8), and Problems with Patients (X3) also showed a significant effect, with p-values < 0.05 and 95% confidence intervals that did not include zero. However, only the Discrimination (X2) construct did not have a significant influence on nurses' occupational stress, with a path coefficient of 0.017, t-statistic of 1.195, p-value of 0.232, and a 95% confidence interval ranging from -0.042 to 0.033. These findings indicate that most dimensions of the ENSS are valid predictors of occupational stress among nurses at X Hospital.

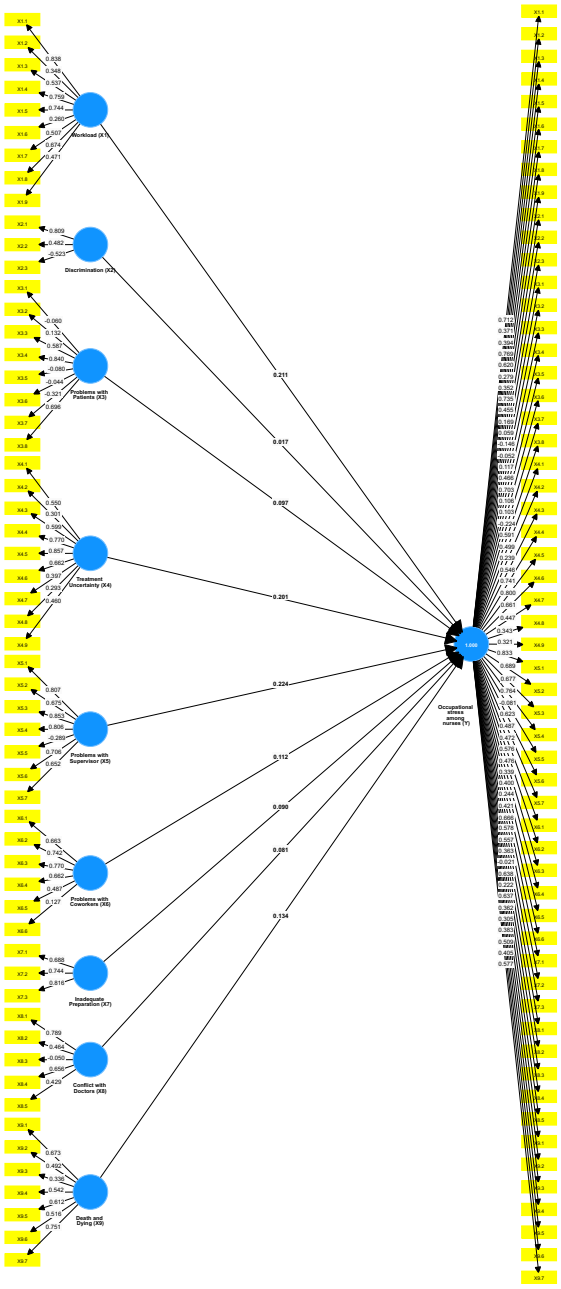

Figure 1. Diagram Path Coefficients Bootstrapping

Figure 1 showed that the results of the loading factor analysis on the main indicators in the structural model yielded mean loading factor values that were generally above the recommended threshold of 0.6. This indicated that the indicators had a strong and valid contribution in representing their respective latent constructs. For example, indicator X5.3 (Problems with Supervisor) had a loading factor of 0.853, X1.1 (Workload) had 0.838, and X4.5 (Treatment Uncertainty) had 0.857, all of which reflected the strength of the relationship between each indicator and its construct. Meanwhile, some indicators, such as X3.5 (Problems with Patients) with a negative loading factor (-0.080), indicated a lack of contribution to the construct and needed to be reviewed for validity. Overall, these results indicated that most indicators in this study met the criteria for convergent validity, thereby strengthening the model's accuracy in measuring job stress based on the ENSS framework.

The results of this study indicate that workload has a significant influence on nurses' work stress with a path coefficient of 0.211 and a highly significant p value ($p = 0.000$). This finding is in line with several studies that report that high workload is a major factor triggering stress among nurses. The higher the level of workload experienced by nurses, the higher the level of stress they experience, and the lower their work productivity(Cahya and Ariyani, 2024; Santoso and Zakiyah, 2018). Karasek's demand-control theory states that high job demands that are not balanced with adequate work control will trigger psychological stress. This shows that workload is not only a quantitative issue (number of tasks), but also qualitative, especially related to time pressure and administrative demands (Karasek 1990).

The results showed that various factors such as problems with patients, treatment uncertainty, conflicts with supervisors, coworkers, and doctors, lack of preparedness in carrying out tasks, and the experience of dealing with the death of patients significantly contributed to work stress in nurses. This finding is in line several studies that identify that stress in nurses comes from various sources, including the emotional burden of caring for patients (Goudarzian et al. 2024), clinical uncertainty (Singh et al. 2024), and disharmonious working relationships (Goudarzian et al. 2024; Moustaka and Constantinidis 2010). In addition, Wolotira, (2023); Wynn, (2020)also emphasized that repeated exposure to patient death without adequate emotional support can lead to compassion fatigue and burnout. This study supports Lazarus and Folkman's stress theory, which states that stress arises when individuals assess environmental demands beyond their coping abilities, so that various challenges in the nurse's work environment-both technical and emotional-can be a significant source of stress if not managed properly.

In contrast, workplace discrimination did not show a significant relationship to job stress in this study ($p = 0.232$). This is not in line with a number of previous studies, such as those conducted by Hammond et al., (2010); Keller et al., (2023) who found that discrimination based on race, gender, and seniority can increase psychological distress and disrupt employees' mental well-being. This difference in results could be due to organizational cultural factors and the social context in the respondents' work environment, where the issue of discrimination may not be perceived explicitly or disguised in other forms. Our findings indicate that workload has a significant effect on occupational stress ($\beta = 0.211$; $p = 0.000$), which

aligns with Karasek's demand-control theory (Biggs, Brough, and Drummond 2017), where high job demands combined with insufficient control can lead to stress. However, the role of supervisor support (assumed as a form of control) was not significant ($p = 0.08$), suggesting the possibility of other factors beyond formal control mechanisms moderating stress, thus challenging the core assumptions of the theory in this context.

This study has several limitations. First, its cross-sectional design does not permit the examination of causal relationships between variables. Second, the scope of the study—limited to 76 nurses in a single hospital in Boyolali—restricts the generalizability of the findings to other settings or populations. Third, the use of a quantitative approach through self-administered questionnaires may introduce response bias and does not allow for an in-depth understanding of the nuanced experiences of work-related stress among nurses. Notably, the finding that discrimination did not significantly contribute to occupational stress should be interpreted with caution. It is possible that the discrimination subscale within the ENSS does not fully capture culturally relevant or context-specific forms of discrimination in the Indonesian healthcare setting. For instance, subtle forms of perceived injustice or hierarchical bias may not be explicitly reported in a structured questionnaire. Future studies could benefit from incorporating qualitative methods to explore implicit bias, perceived unfairness, and other workplace dynamics that may not be adequately reflected in standardized instruments. Additionally, contextual factors—such as the relative homogeneity of the workforce—might also influence the perception or visibility of discrimination and warrant further exploration.

Conclusion

Based on the results and discussion of the study, it can be concluded that work stress in nurses is influenced by various factors, both structural and emotional in nature, with problems with supervisors, workload, and treatment uncertainty as the main contributors. In addition, negative interactions with patients, conflicts with peers and doctors, lack of preparedness, and the experience of facing the death of a patient were also shown to contribute significantly to stress levels. These findings reinforce previous theories such as Lazarus and Folkman's stress model and Karasek's workload theory, and are in line with the results of previous studies that highlighted the importance of organizational support, positive leadership, and clinical and emotional skills training in reducing nurses' job stress.

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