



Burnout Dimensions Among Emergency Nurses in Post-Pandemic East Kalimantan: A Cross-Sectional Study

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ABSTRACT

Objective

This study examined burnout dimensions and their associations with demographic and professional characteristics among emergency nurses in East Kalimantan, Indonesia, during the post-pandemic transition period.

Methods

A quantitative descriptive-analytic cross-sectional study was conducted in December 2022 in the emergency department of a Coronavirus Disease 2019 (COVID-19) referral hospital in East Kalimantan. Seventy-one full-time emergency nurses were recruited through total population sampling. Burnout was measured using the Maslach Burnout Inventory–Human Services Survey, and demographic and professional data were collected using a structured questionnaire. Data were analyzed using descriptive statistics and Spearman's rank correlation.

Results

Most participants reported low emotional exhaustion (83.10%), while high depersonalization was found in 45.07% and low personal accomplishment in 94.36%. Age showed weak negative correlations with emotional exhaustion ($r = -0.257$, $p = 0.031$), depersonalization ($r = -0.324$, $p = 0.006$), and reduced personal accomplishment ($r = -0.320$, $p = 0.006$). Length of employment showed weak negative correlations with depersonalization

($r = -0.261$, $p = 0.028$) and reduced personal accomplishment ($r = -0.266$, $p = 0.025$). Gender, marital status, and education level were not significantly correlated with burnout dimensions.

Conclusion

Routine multidimensional burnout monitoring and targeted professional support are recommended for emergency nurses.



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Background

The Coronavirus Disease 2019 (COVID-19) pandemic placed sustained pressure on health-care workers, especially nurses working in emergency departments. Emergency nurses were required to respond to urgent clinical conditions, high patient flow, infection risk, and rapidly changing service demands. These conditions increased the risk of burnout among nurses, which is important because it may affect staff well-being, quality of care, patient safety, and workforce stability (Cui *et al.*, 2021; Kakemam *et al.*, 2021; Paiva *et al.*, 2021; Park *et al.*, 2020). Demographic and professional characteristics may be associated with burnout dimensions. Previous studies have suggested that younger nurses and those with shorter work experience may be more vulnerable to burnout, whereas longer professional experience may be associated with better role adjustment and familiarity with clinical routines (Daryanto *et al.*, 2022; Dechasa *et al.*, 2021; Eskandari *et al.*, 2023; Membrive-Jiménez *et al.*, 2022). However, these associations may vary across settings because working conditions, staffing patterns, local health-care resources, and professional culture differ between hospitals and regions.

The Maslach Burnout Inventory–Human Services Survey (MBI-HSS) is one of the most widely used instruments for assessing burnout among human-service professionals (Maslach & Jackson, 1981; Maslach, Jackson, & Leiter, 1996). It measures burnout through three dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Emotional exhaustion reflects emotional depletion caused by work demands, depersonalization reflects detached or cynical responses toward patients or work, and reduced personal accomplishment reflects a lower sense of professional effectiveness and achievement (Doherty *et al.*, 2021; Edú-Valsania, Laguía, & Moriano, 2022). Compared with global or single-item burnout questions and occupation-specific stress scales, the MBI-HSS provides a more detailed assessment because each burnout dimension is measured separately. The instrument has been used in health-care studies involving emergency medicine professionals, nurses, oncology nursing professionals, and nurse managers (Petrino, Riesgo, & Yilmaz, 2022; Cui *et al.*, 2021; Kakemam *et al.*, 2021; Membrive-Jiménez *et al.*, 2022; Paiva *et al.*, 2021). However, because the MBI-HSS relies on self-report, responses may be influenced by social desirability, professional stigma, recall bias, temporary emotional states, and cultural interpretation. Therefore, burnout scores should be interpreted by dimension and should not be treated as a clinical diagnosis or reduced to a single score without considering the work context (Doherty *et al.*, 2021; Edú-Valsania, Laguía, & Moriano, 2022; Kendrick *et al.*, 2020).

Evidence on burnout among Indonesian health-care workers increased during the COVID-19 pandemic. Several studies in Indonesia examined health professionals in Malang, health workers from multiple provinces, and COVID-19 survivor nurses (Daryanto *et al.*, 2022; Soemarko & Khoe, 2022; Lee *et al.*, 2023). However, local evidence from emergency nurses in

East Kalimantan remains limited. East Kalimantan is relevant because hospitals in the region contributed to pandemic response while continuing to provide emergency care for urgent and severe cases. The post-pandemic transition period also raised questions about whether burnout patterns among emergency nurses remained evident after the most acute phase of the pandemic had passed (Daryanto *et al.*, 2022; Petrino, Riesgo, & Yilmaz, 2022).

This study aimed to describe the levels of emotional exhaustion, depersonalization, and personal accomplishment among emergency nurses in East Kalimantan and to examine their associations with demographic and professional characteristics. The study provides local evidence that may help hospital managers identify groups of nurses who require closer burnout monitoring and professional support.

Methods

Study Design

This study used a quantitative descriptive-analytic cross-sectional design. This design was appropriate because the study aimed to describe burnout levels and examine associations between burnout dimensions and participant characteristics at one point in time (Membrive-Jiménez *et al.*, 2022). However, this design cannot establish causal relationships or explain changes in burnout over time.

Setting and Participants

The study was conducted in December 2022 in the emergency department of a COVID-19 referral hospital in East Kalimantan, Indonesia. The emergency department was selected because nurses in this unit manage urgent and severe cases and are exposed to high work demands. Total population sampling was used. The inclusion criteria were full-time registered emergency nurses who had worked in the emergency department for at least one year and agreed to participate. Nurses who were on leave, recently transferred to the emergency department, or undergoing psychological treatment were excluded. Leave status and recent transfer status were verified through administrative records, while psychological treatment status was identified through participant self-report during eligibility screening. After applying the inclusion and exclusion criteria, 71 nurses were eligible and participated in the study.

The minimum required sample size was calculated using the Yamane formula for a finite population: $n = N / [1 + N(e^2)]$, where n is the minimum sample size, N is the accessible population, and e is the margin of error (Yamane, 1967). The accessible population in this study consisted of 71 emergency nurses. Using a 5% margin of error, the calculation was $n = 71 / [1 + 71(0.05^2)] = 71 / 1.1775 = 60.30$. Therefore, the minimum required sample size was rounded up to 61 participants. Because this study used total population sampling, all 71 eligible emergency nurses were included, exceeding the minimum required sample size (Yamane, 1967).

Age was categorized into three groups: ≤ 30 years, 31–39 years, and ≥ 40 years. This grouping was used to describe age-related differences among emergency nurses while maintaining adequate numbers of participants in each category for descriptive analysis. In this study, age was used as an approximate indicator of career stage: nurses aged ≤ 30 years were considered to represent early-career nurses, those aged 31–39 years represented mid-career nurses, and those aged ≥ 40 years represented more senior nurses. This categorization was used for descriptive purposes because age is commonly examined as a demographic factor associated with burnout among nurses and health-care workers (Daryanto *et al.*, 2022; Dechasa *et al.*, 2021; Membrive-Jiménez *et al.*, 2022).

Instruments

Data were collected using the MBI-HSS and a demographic questionnaire. The MBI-HSS was developed by Maslach and Jackson to assess burnout among human-service professionals

(Maslach & Jackson, 1981). This instrument measures three burnout dimensions: emotional exhaustion, depersonalization, and personal accomplishment. Emotional exhaustion refers to emotional depletion related to work demands, depersonalization refers to detached or cynical responses toward patients or work, and personal accomplishment reflects perceived professional effectiveness and achievement. This instrument consists of 22 items distributed across three dimensions: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). Items are rated on a seven-point frequency scale ranging from 0 = never to 6 = every day (Maslach, Jackson, & Leiter, 1996; Doherty *et al.*, 2021). Scores are calculated separately for each dimension and categorized as low, moderate, or high according to MBI-HSS scoring guidance. Emotional exhaustion was categorized as low at scores of ≤ 16 , moderate at 17–26, and high at ≥ 27 . Depersonalization was categorized as low at scores of ≤ 6 , moderate at 7–12, and high at ≥ 13 . Personal accomplishment was categorized as low at scores of ≤ 31 , moderate at 32–38, and high at ≥ 39 . In this study, lower personal accomplishment scores were interpreted as reduced personal accomplishment, indicating higher burnout risk in this dimension.

The MBI-HSS used in this study was the Indonesian version adopted from Yulianto (2020) that demonstrated satisfactory construct validity based on confirmatory factor analysis in an Indonesian sample of 504 participants. The three-correlated factor model showed good model fit, with RMSEA = 0.048, CFI = 0.943, and TLI = 0.934. Regarding reliability, the original MBI-HSS showed acceptable internal consistency, with Cronbach's alpha coefficients of 0.89 for emotional exhaustion, 0.77 for depersonalization, and 0.74 for personal accomplishment on the frequency scale. These findings support the use of the MBI-HSS as a reliable multidimensional burnout instrument, although interpretation should still consider the self-reported nature of the questionnaire (Maslach & Jackson, 1981; Yulianto, 2020). The demographic questionnaire collected information on age, gender, marital status, education level, and length of employment. These variables were selected because demographic and professional characteristics are commonly examined in burnout research among nurses and health-care workers (Daryanto *et al.*, 2022; Dechasa *et al.*, 2021; Kakemam *et al.*, 2021; Membrive-Jiménez *et al.*, 2022).

Data Collection and Ethical Considerations

Data were collected in person during designated work hours. Before completing the questionnaire, participants received information about the study objectives, voluntary participation, confidentiality, and their right to withdraw without consequences. Written informed consent was obtained from all participants. Questionnaires were anonymized using numerical codes. Completed questionnaires were checked for completeness before data entry. Ethical approval was obtained from the Abdul Wahab Sjahranie Hospital Ethics Committee before data collection (approval number: 348/KEPK-AWS/IX/2021). Data were stored securely, and access was limited to the research team. Because the questionnaire addressed psychological well-being, participants were informed about available support pathways if they experienced discomfort while completing the survey.

Data Analysis

All statistical analyses were performed using IBM SPSS Statistics for Windows, Version 26. Descriptive statistics were used to summarize participant characteristics and study variables. statistical significance was determined at a p-value of < 0.05 . Descriptive statistics were used to summarize demographic characteristics and burnout dimensions. Frequencies and percentages were used for categorical variables. The burnout scores were not normally distributed, Spearman's rank correlation was used to examine associations between demographic and professional characteristics and burnout dimensions. Correlation strength was interpreted as weak ($r = 0.10$ – 0.39), moderate ($r = 0.40$ – 0.69), and strong ($r \geq 0.70$). Statistical significance was set at $p < 0.05$. All questionnaires were complete, and no imputation was required.

Results

A total of 71 emergency nurses participated in this study. All returned questionnaires were complete and included in the analysis. Based on Table 1, most participants were female (61.97%), aged 31–39 years (49.29%), married (88.73%), and had Diploma III education (70.42%). The largest employment group had worked for 6–9 years (45.07%). Burnout levels were assessed using the MBI-HSS. The distribution of burnout dimensions is shown in Table 2. Most participants had low emotional exhaustion (83.10%). For depersonalization, 45.07% of participants were in the high category. For personal accomplishment, 94.36% of participants were in the low category, indicating higher burnout risk in this dimension. Spearman's rank correlation was used to examine associations between demographic and professional characteristics and burnout dimensions. The results are presented in Table 3. Age showed weak negative correlations with emotional

Table 1. Demographic Characteristics of Participants (n = 71)

Variable	Category	n	%
Age	≤ 30 years	22	30.99
	31–39 years	35	49.29
	≥ 40 years	14	19.72
Gender	Male	27	38.03
	Female	44	61.97
Marital status	Married	63	88.73
	Single	7	9.86
	Widow/Widower	1	1.41
Education level	Diploma III	50	70.42
	Bachelor/Diploma IV/S1	12	16.90
	Ners professional program	9	12.68
Length of employment	1–5 years	15	21.13
	6–9 years	32	45.07
	≥ 10 years	24	33.80

Table 2. Distribution of Burnout Dimensions (n = 71)

Dimension	Category	n	%
Emotional exhaustion	High	4	5.63
	Moderate	8	11.27
	Low	59	83.10
Depersonalization	High	32	45.07
	Moderate	13	18.31
	Low	26	36.62
Personal accomplishment	High	2	2.82
	Moderate	2	2.82
	Low	67	94.36

Table 3. Correlations between Participant Characteristics and Burnout Dimensions

Characteristic	EE r	EE p	DP r	DP p	RPA r	RPA p
Age	-0.257	0.031	-0.324	0.006	-0.320	0.006
Gender	-0.099	0.410	-0.130	0.281	-0.141	0.241
Marital status	-0.026	0.829	0.010	0.932	0.011	0.931
Education	0.194	0.105	0.216	0.070	0.215	0.071
Length of employment	-0.209	0.081	-0.261	0.028	-0.266	0.025

EE = emotional exhaustion; DP = depersonalization; RPA = reduced personal accomplishment.

Spearman's rank correlation was used. Statistical significance was set at $p < .05$.

exhaustion, depersonalization, and reduced personal accomplishment. Length of employment showed weak negative correlations with depersonalization and reduced personal accomplishment. Gender, marital status, and education level were not significantly correlated with any burnout dimension.

Discussion

This study examined burnout dimensions among emergency nurses in East Kalimantan during the post-pandemic transition period. The finding of low emotional exhaustion suggests that acute emotional fatigue may have been less prominent at the time of data collection. However, this result should not be interpreted as full psychological recovery. The high proportion of depersonalization and low personal accomplishment indicates that burnout-related concerns remained evident, particularly in relation to professional detachment and reduced sense of achievement. This pattern is relevant because burnout dimensions may develop or persist differently. Emotional exhaustion may decrease when acute workload pressure declines, but depersonalization and low professional accomplishment may continue if nurses experience prolonged work strain, reduced motivation, or limited recognition of their professional role. Similar concerns have been discussed in studies of health-care workers during the COVID-19 pandemic and its later phases (Buran & Altın, 2021; Petrino, Riesgo, & Yilmaz, 2022). Alternative explanations should also be considered. Low emotional exhaustion may reflect actual reduction in acute fatigue, but it may also be influenced by self-report bias, professional stigma, or reluctance to disclose psychological distress. Because this study did not measure stigma, cultural norms, or response bias, this interpretation should be treated cautiously (Kendrick *et al.*, 2020).

These findings are consistent with previous studies using Maslach-based burnout measures, which showed that burnout dimensions may differ across health-care workers. Burnout among nurses has been associated with perceived quality of patient care and adverse events, indicating that depersonalization and other burnout dimensions may have implications for both staff well-being and care processes (Kakemam *et al.*, 2021). Variation across emotional exhaustion, depersonalization, and personal accomplishment has also been reported among oncology nursing professionals, supporting the need to interpret each burnout dimension separately (Paiva *et al.*, 2021). The high proportion of low personal accomplishment in this study may reflect reduced professional recognition, limited role support, or difficulty maintaining a sense of achievement in demanding clinical settings. Similar concerns have been reported among nurses and nurse managers in previous studies using burnout-related measures (Cui *et al.*, 2021; Membrive-Jiménez *et al.*, 2022).

Age, Length of Employment, and Burnout Dimensions

Older nurses tended to report lower emotional exhaustion, depersonalization, and reduced personal accomplishment. Nurses with longer employment also tended to report lower

depersonalization and reduced personal accomplishment. However, the correlation coefficients were weak. Therefore, the findings should be interpreted as modest associations rather than strong predictive relationships. One possible explanation is that older and more experienced nurses may have greater familiarity with emergency department routines and role expectations. Previous studies have also reported associations between professional experience and burnout among nurses and health-care workers (Daryanto *et al.*, 2022; Dechasa *et al.*, 2021; Eskandari *et al.*, 2023). However, because this study used a cross-sectional design, it cannot determine whether age or work experience reduces burnout. Longitudinal studies are needed to clarify changes in burnout over time.

Gender, marital status, and education level were not significantly associated with burnout dimensions in this sample. This finding should be interpreted cautiously because the study was conducted in a single hospital with a relatively small sample. Previous studies have also shown that associations between demographic factors and burnout are inconsistent, suggesting that burnout may be more strongly influenced by work-related factors, clinical role demands, workload, and organizational support than by demographic characteristics alone (Dechasa *et al.*, 2021; Membrive-Jiménez *et al.*, 2022; Paiva *et al.*, 2021). From the Maslach burnout perspective, burnout is mainly understood as a work-related psychological response involving emotional exhaustion, depersonalization, and reduced personal accomplishment. Therefore, non-significant associations with gender, marital status, and education level do not necessarily mean that these factors are unimportant, but they may have limited explanatory value in this single-site emergency nursing sample (Edú-Valsania, Laguía, & Moriano, 2022).

Study Limitations and Future Research

This study has several limitations. First, the cross-sectional design only provides a snapshot of burnout at one point in time and cannot establish causal relationships or recovery trajectories. Second, the study was conducted in one hospital with 71 emergency nurses, which limits generalizability to other hospitals, regions, or health-care settings. Third, burnout was measured using self-reported questionnaires, which may be affected by social desirability bias, professional stigma, or reluctance to disclose psychological distress. Fourth, the study did not measure resilience, leadership, workload, staffing adequacy, organizational support, or cultural factors. Therefore, these issues can only be discussed as possible contextual explanations or practical implications based on previous literature, not as findings directly demonstrated by this study. Fifth, nurses undergoing psychological treatment were excluded based on the eligibility criteria established before data collection. Although this was intended to reduce potential bias related to active treatment status, it may have underestimated burnout severity among the broader emergency nursing workforce. Future studies should include this group as a separate subgroup or adjust for psychological treatment status in the analysis.

Future studies should use longitudinal designs to examine changes in burnout over time and to identify factors associated with improvement or worsening of burnout dimensions. Multisite studies involving different hospital types and regions are also needed to improve generalizability. Mixed-methods studies may also help explain how emergency nurses interpret burnout and professional support in their daily work (Foo *et al.*, 2023; Pang *et al.*, 2021).

Conclusion

This study found that burnout among emergency nurses in East Kalimantan was characterized by low emotional exhaustion but high depersonalization and low personal accomplishment. Age was weakly and negatively correlated with all three burnout dimensions, while length of employment was weakly and negatively correlated with depersonalization and reduced personal

accomplishment. The findings suggest that emergency departments should monitor burnout across all three MBI-HSS dimensions rather than focusing only on emotional exhaustion. In this study, low emotional exhaustion did not mean that burnout risk was absent, because depersonalization and low personal accomplishment were still prominent.

The weak associations involving age and length of employment suggest that younger and less experienced nurses may benefit from closer professional support. Practical strategies may include structured orientation, mentoring by senior nurses, peer discussion, and regular supervision. These strategies should be understood as practical implications rather than direct causal conclusions, because mentorship, leadership, workload, and organizational support were not directly measured in this study. These findings suggest that younger and less experienced nurses may require closer burnout monitoring and professional support. Because this was a single-site cross-sectional study, the findings should be interpreted cautiously and confirmed through longitudinal and multisite research.

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