

Original Research

Prevalence and Associated Factors of Burnout Risk among Emergency Nurses during COVID-19 Pandemic



I Made Dwie Pradnya Susila^{1*} & Ida Ayu Agung Laksmi¹

¹STIKES Bina Usada Bali, Badung, Indonesia

Article Info	Abstract
Article history: Received: 20 November 2021 Accepted: 29 March 2022	<p><i>Introduction:</i> The Emergency Department (ED) nurses are the first health care professionals to treat patients infected during COVID-19 pandemic. The workload of ED nurses is quite heavy because generally patients who are rushed to the ED are emergency patients who need to get health services as quickly and accurately as possible. This study aimed to determine the prevalence and associated factors of burnout risk among Emergency Nurses during COVID-19 pandemic in Bali.</p> <p><i>Methods:</i> A cross-sectional study was carried out on the risk of burnout among emergency nurses in Bali. This research was conducted in June 2021 involving 85 emergency nurses who are members of the Indonesian emergency and disaster nurse association in Bali. The instrument used to identify the nurses' burnout is the Maslach Burnout Inventory Indonesian version. Statistical analysis was carried out using the Spearman Rank test with a level of significance ($\alpha < 0.05$).</p> <p><i>Results:</i> The ED nurses burnouts during the COVID-19 pandemic in Bali have average burnout ranged from 9.8 to 34.58. Most of the respondents (72.9%) were in mild emotional exhaustion, 69.4% experienced moderate depersonalization and 45.9% had low personal accomplishment. Hospital resource have co-morbidities and previous experience of treating patients with infectious diseases statistically correlated with ED nurses burnouts.</p> <p><i>Conclusion:</i> Hospital resources, having co-morbidities and experience in caring for communicable diseases statistically are associated factors of burnout risk among Emergency Nurses during COVID-19 pandemic.</p>
Keywords: ED nurse, burnout, COVID-19, associated factor	

*Corresponding Author:

e-mail: dwiepradnya@gmail.com



This work is licensed under a Creative Commons Attribution 4.0 International License.

INTRODUCTION

The COVID-19 pandemic has put an increasing burden on the health care system, including an increase in the burden of health workers. The heaviest risk occurs in the safety aspect of health workers, who are very vulnerable to being exposed to COVID-19 so they are very at risk of contracting and threatening their lives and safety [1]. The ED nurse is one of the medical personnel who plays an important role in providing health services to patients. Most patients infected with COVID-19 will enter through the ED as the first access to a hospital. As a result, ED nurses are the first health care professionals to treat patients infected with a new infectious disease [2].

The workload of ED nurses is quite heavy because generally patients who are rushed to the ED are emergency patients who need to get health services as quickly and accurately as possible. Nurses on duty in the Emergency room must be on standby for 24 hours to treat patients whose number and severity are unpredictable. In addition, the responsibilities of the ED nurse are quite large because it involves the safety of one's life [3]. However, nurses working in emergency departments are the ones dealing with the most critical patients and thus, are the most exposed to a high risk of contagion and work-related stress [4].

Previous study has shown that burnout level in ED nurses who experienced the MERS-CoV outbreak was 3.02 on a 5-point scale (60.4 on a 100-point scale) [2]. Burnout is known to be driven by high work stress, high time pressure and workload, and poor organizational support [5]. According to a

systematic review of 9 reports nurses' burnout published over the past 2 years, the factors influencing burnout have been largely divided into individual factors such as gender, age and work-related factors [4]. Symptoms of burnout will be seen in the form of work stress, it can be in the form of disobedience to a company regulations or policies of an organization, lacking or incompetent in doing work, not willing to take part in training, performance is below existing standards, conflicts between co-workers and indifferent to service to patients or clients [1].

With an increase in resilience, the nurses can cope with the negative conditions. Better adaptation and achievements are increased, and thereby they experience a better quality of working experience, which minimizes the burnout among them. This study aimed to determine the prevalence and associated factors of burnout risk among Emergency Nurses during COVID-19 pandemic in Bali.

METHODS

A cross-sectional study was carried out on the risk of burnout among emergency nurses in Bali. This research was conducted in June 2021 involving 85 emergency nurses who are members of the Indonesian emergency and disaster nurse association in Bali.

The instrument used to identify the nurses' burnout is the Maslach Burnout Inventory Indonesian version. It consisted of 22 items, under three different dimensions viz emotional exhaustion, depersonalization, and personal accomplishments. The emotional exhaustion domain assessed by a 9-item scale identifies the feeling of being emotionally

overextended and over- exhausted by one's work. Depersonalization domain [5 items] in the tool measures an unfeeling and impersonal response toward the recipient of one's service, care, treatment, or instruction. There are eight items in the personal accomplishment domain [6]. In this study. Previous test results prove that the data fit with the 3-correlated factor models that show the correlation of emotional exhaustion and depersonalization factors = 0.966, emotional exhaustion and personal accomplishment = - 0.590 and personal accomplishment and depersonalization = -0.701 [7].

Data were collected online via a platform compliant with the General Data Protection Regulation (GDPR) and using a simple random sampling method. Three independent people tested the usability of the online questionnaire before the survey was released. The Health Research Ethics Commission of STIKES Bina Usada Bali has declared this study ethically feasible with the number 052/EA/KEPK-BUB-2021.

Statistical analysis was performed using IBM SPSS 23.0 Statistics. Descriptive statistics included frequency, proportions (%), mean, and standard deviations. Univariate analysis was conducted to describe the characteristics of respondents such as age, gender, marital status, comorbid factors, hospital resources

from the hospital and experience of caring for infectious patients. Bivariate analysis was carried out using the Spearman Rank test with a level of significance ($\alpha < 0.05$) to determine the relationship between the independent variables and each variable of burnout.

RESULTS

Eighty-five ED Nurses in Bali participated to the online survey. The higher the score for emotional exhaustion and depersonalization, the severe is the burnout, while a lower score of personal accomplishment indicates more severe burnout.

Table 1 shows an overview of ED nurses burnout during the COVID-19 pandemic. Most of the respondents (72.9%) were in mild emotional exhaustion, 69.4% experienced moderate depersonalization and 45.9% had low personal accomplishment.

Based on table 2 above, it can be seen that the factors that have a significant correlation with ED nurse burnout are the completeness of hospital resource where they work, have co-morbidities and previous experience of treating patients with infectious diseases. Demographic factors such as age, gender, education level, marital status were found to have no correlation with ER nurse burnout during the COVID-19 pandemic.

Table 1
Overview of Emergency Nurse Burnout (n=85)

Psychological Problem Variables	Mean (SD)	n (%)
Burnout (Emotional Exhaustion)	14.39 (7.964)	
Low Emotional Exhaustion		62 (72.9 %)
Moderate Emotional Exhaustion		17 (20 %)
Heavy Emotional Exhaustion		6 (7.1 %)
Burnout (depersonalization)	9.8 (6.1)	
Low Depersonalization		8 (9.4 %)
Moderate Depersonalization		59 (69.4 %)
Heavy Depersonalization		18 (21.2 %)
Burnout (Personal accomplishment)	34.58 (8.195)	
High Personal accomplishment		30 (35.3 %)
Moderate Personal accomplishment		16 (18.8 %)
Low Personal accomplishment		39 (45.9 %)

Table 2
Correlation among burnout and characteristic respondents

	Emotional Exhaustion		Depersonalization		Personal accomplishment	
	p- value	r	p- value	r	p- value	r
Age	0.903	0.013	0.710	-0.041	0.376	-0.097
Length of work	0.676	0.046	0.902	-0.014	0.987	0.002
Sex	0.875	0.017	0.059	-0.206	0.617	0.055
Level of education	0.490	0.076	0.596	0.058	0.087	-0.187
Marital status	0.078	0.192	0.580	0.061	0.702	0.042
Position	0.869	-0.018	0.573	-0.062	0.596	-0.063
Having co-morbidities	0.000*	0.526	0.406	0.092	0.200	0.280
Completeness of hospital facilities	0.063	-0.203	0.030*	-0.235	0.000*	0.573
Experience of Caring for Infectious Diseases	0.038*	-0.225	0.090	-0.185	0.001*	-0.350

*p < 0.05

DISCUSSION

This study aimed to determine the prevalence and associated factors of burnout risk among Emergency Nurses during COVID-19 pandemic in Bali. One of the systematic review explained that the prevalence ED and intensive Nurses overall burnout ranged from 49.3 to 58 using the same, namely Maslach Burnout Inventory [4]. In contrast to the findings in this study with average burnout

ranged from 9.8 to 34.58. This shows that ED nurses in Bali during the COVID-19 pandemic had lower burnout when compared to the results of previous studies in the world [4, 8]. A previous study found that nurses in the emergency department expressed a moderate to a high level of resilience and resilience demonstrates a significant tool to bring down the burnout [6].

Many pandemic-related variables were associated with burnout, e.g., shortage in resources, worry regarding COVID-19, and stigma [4]. Maslach, Schaufeli, & Leiter (2001) explained that the factors that can cause burnout are divided into two, namely: 1) situational factors including job, professional, and organizational characteristics and 2) individual factors such as demographic factors, personality factors, and work attitudes [9]. Characteristics of respondents such as age, gender, level of education, marital status were identified as demographic factors, position, had comorbidities and previous experience of caring for infectious diseases were identified as personality factors which were also part of individual factors while length of work, completeness of hospital facilities or workplace were identified as a situational factor.

Table 2 shows the factor of completeness of hospital facilities where respondents work identified as a situational factor statistically correlated with depersonalization with p-value (0.030), with a correlation coefficient value of 0.235 which means it has a relationship very weak. Depersonalization is the development of cynical and callous feelings towards others which is shown as an effort to protect oneself from feelings of disappointment and avoid uncertainty in work [9].

The factor of completeness of hospital resources where respondents work also has a significant correlation personal accomplishment. In addition, this study found that most respondents have low personal accomplishment. Low personal accomplishment described as reduced

productivity or capability, low morale, and an inability to cope. Correlation between personal accomplishment [self-achievement] and completeness of hospital resources shown by correlation value (0.573) which means that the more complete the hospital facilitation, the higher the nurse's self-achievement. A Previous study found that a poor hospital resources for the treatment of MERS-CoV increased MERS-CoV-related burnout [2]. The principles of MERS-CoV infection prevention and control strategies associated with healthcare suggest the need for hospital resources [2].

Personal accomplishment also has a significant relationship with having comorbidities and experience in caring for infectious diseases. Having co-morbidities can cause anxiety and fear because they can exacerbate infection due to COVID-19. However, one previous study found that psychomorbidities were statistically associated with psychological problems compared with medical comorbidities [10].

Having co-morbidities and experience in caring for infectious diseases also statistically correlated with the domains of emotional exhaustion. Emotional exhaustion refers to feelings of being emotionally overextended and depleted of one's emotional resources [11]. In this study, the average emotional exhaustion of respondents was $14.39 \pm 7,964$ which means that it is in the category of mild emotional exhaustion.

In many previous studies, demographic variables failed to provide inconclusive evidence to consider a risk factor for burnout [6, 12]. In addition, in this study there are no correlation among demographic variables

(such as age, gender, length of work, education level, marital status work position) and burnout ED Nurse. This is in contrast to previous study that burnout correlated with increasing years of working in ED (p-value = 0.03), the longer nurse working in the ED, the more experienced and more responsibilities they would have, thus high likely to develop burnout [12].

The lower burnout value of ED nurses in Bali during the COVID-19 pandemic when compared to several previous studies could be due to several factors, including a work safety dan policy. Vaccine is one of the COVID-19 prevention tools which is a government policy and has been regulated in legislation [13]. In Indonesia, vaccines are the main focus in efforts to resolve the COVID-19 pandemic with an achievement rate of 77.73% for dose 1 and 53.91% for dose 2 in December 2021 [14]. Comprehensive vaccination has been established as the first line of defense [15]. ED nurses in Bali have been vaccinated up to the third booster dose provided by the respective hospital. In addition, most of the ED nurses had received the complete vaccine at the time of data collection.

Although the results of this study found a lower burnout score than some previous studies, burnout remains a psychological problem that needs attention. Therefore, strategies are needed for dealing the emotional helplessness and mental suffering expressed after the end of the pandemic such as create proper spaces for listening and exchanging feelings in order to prevent burnout [16].

This study has limitation that many other variables of work related factors are not

investigated. A large number of studies found that work process inefficiencies, excessive workloads (e.g., work hours, overnight call frequency, nurse-patient ratios), income, organizational climate factors (e.g., management culture; lack of physician-nurse collaboration, value congruence, opportunities for advancement, and social support), and deterioration in control, autonomy, and meaning at work have been associated with burnout among nurses [17-20]. Another study found that more COVID-19 related stress was associated with more burnout caused by COVID-19 pandemic exhaustion. Stress may lead individuals to experience higher levels of burnout [21].

CONCLUSION

Emergency Department nurses burnout during the COVID-19 pandemic in Bali has average burnout ranged from 9.8 to 34.58. Hospital resources, having co-morbidities and experience in caring for communicable diseases statistically are associated factors of burnout risk among Emergency Nurses during COVID-19 pandemic. The principles of COVID-19 infection prevention and control strategies associated with healthcare suggest the need for administrative controls, hospital resources, and attention to reduce the work-related burden on health professionals.

REFERENCES

- [1] M. D. Y. Santoso, "Faktor-Faktor Yang Berhubungan Dengan Burnout Pada Tenaga Kesehatan Dalam Situasi Pandemi Covid-19," *J. Keperawatan Trop. Papua*, vol. 04, pp. 1-10, 2021.

- [2] J. S. Kim and J. S. Choi, "Factors Influencing Emergency Nurses' Burnout During an Outbreak of Middle East Respiratory Syndrome Coronavirus in Korea," *Asian Nurs. Res. (Korean Soc. Nurs. Sci.)*, vol. 10, no. 4, pp. 295–299, 2016, doi: 10.1016/j.anr.2016.10.002.
- [3] T. Mandasari, M. Choiri, and R. A. Sari, "Analisa Beban Kerja Perawat Ugd Menggunakan Maslach Burnout Inventory Dan Modifikasi Heart (Studi Kasus : RSUD. X)," *J. Rekayasa dan Manaj. Sist. Ind.*, vol. 2, no. 5, pp. 1044–1054, 2014.
- [4] M. R. Gualano *et al.*, "The burden of burnout among healthcare professionals of intensive care units and emergency departments during the covid-19 pandemic: A systematic review," *Int. J. Environ. Res. Public Health*, vol. 18, no. 15, 2021, doi: 10.3390/ijerph18158172.
- [5] S. Dugani *et al.*, "Prevalence and factors associated with burnout among frontline primary health care providers in low- and middle-income countries: A systematic review," *Gates Open Res.*, vol. 2, p. 4, 2018, doi: 10.12688/gatesopenres.12779.1.
- [6] S. Jose, M. Dhandapani, and M. C. Cyriac, "Burnout and resilience among frontline nurses during covid-19 pandemic: A cross-sectional study in the emergency department of a tertiary care center, north india," *Indian J. Crit. Care Med.*, vol. 24, no. 11, pp. 1081–1088, 2020, doi: 10.5005/jp-journals-10071-23667.
- [7] H. Yulianto, "Maslach Burnout Inventory-Human Services Survey (MBI-HSS) Versi Bahasa Indonesia: Studi Validasi Konstruk pada Anggota Polisi," *J. Pengukuran Psikol. dan Pendidik. Indones.*, vol. 9, no. 1, pp. 19–29, 2020, doi: 10.15408/jp3i.v9i1.13329.
- [8] D. Hu *et al.*, "Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study," *EClinicalMedicine*, vol. 24, 2020, doi: 10.1016/j.eclinm.2020.100424.
- [9] C. Maslach, W. Schaufeli, and M. P. Leiter, "Job Burnout," *Annu. Rev. Psychol.*, vol. 52, pp. 397–422, 2001, doi: 10.1016/B978-0-12-397045-9.00149-X.
- [10] E. M. Giusti *et al.*, "The Psychological Impact of the COVID-19 Outbreak on Health Professionals: A Cross-Sectional Study," *Front. Psychol.*, vol. 11, no. July, pp. 1–9, 2020, doi: 10.3389/fpsyg.2020.01684.
- [11] U. Klusmann, K. Aldrup, J. Schmidt, and O. Lüdtke, "Is emotional exhaustion only the result of work experiences? A diary study on daily hassles and uplifts in different life domains," *Anxiety, Stress Coping*, vol. 34, no. 2, pp. 173–190, 2021, doi: 10.1080/10615806.2020.1845430.
- [12] M. I. Zakaria, R. Remeli, M. F. Ahmad Shahamir, M. H. Md Yusuf, M. A. Azizah Ariffin, and A. M. Noor Azhar, "Assessment of burnout among emergency medicine healthcare workers in a teaching hospital in Malaysia during COVID-19 pandemic," *Hong Kong J. Emerg. Med.*, vol. 28, no. 4, pp. 254–259, 2021, doi: 10.1177/1024907921989499.

- [13] F. Gandryani and F. Hadi, "Pelaksanaan Vaksinasi Covid-19 Di Indonesia: Hak Atau Kewajiban Warga Negara (the Vaccination of Covid-19 in Indonesia: Citizen Right or Citizen Duty)," *J. Rechts Vinding Media Pemb. Huk. Nas.*, vol. 10, no. 1, pp. 23–41, 2021.
- [14] Kementerian Kesehatan Republik Indonesia, "Vaksin Dashboard." 2021.
- [15] Y. Huang and L. Yu, "Sources of care stress of nursing staff for patients with infectious diseases during the prevalence of covid-19: A case study of some regional teaching hospitals in southern taiwan," *Healthc.*, vol. 9, no. 4, 2021, doi: 10.3390/healthcare9040462.
- [16] F. Ornell, S. C. Halpern, F. H. Paim Kessler, and J. C. de Magalhães Narvaez, "The impact of the COVID-19 pandemic on the mental health of healthcare professionals," *Cad. Saude Publica*, vol. 36, no. 4, 2020, doi: 10.1590/0102-311X00063520.
- [17] K. Ahola and J. Hakanen, "[Burnout among health care professionals].," *Duodecim.*, vol. 126, no. 18, pp. 2139–2146, 2010.
- [18] M. D. McHugh, A. Kutney-Lee, J. P. Cimiotti, D. M. Sloane, and L. H. Aiken, "Nurses' widespread job dissatisfaction, burnout, and frustration with health benefits signal problems for patient care," *Health Aff.*, vol. 30, no. 2, pp. 202–210, 2011, doi: 10.1377/hlthaff.2010.0100.
- [19] E. L. Woodhead, L. Northrop, and B. Edelstein, "Stress, Social Support, and Burnout among Long-Term Care Nursing Staff," *J. Appl. Gerontol.*, vol. 35, no. 1, pp. 84–105, 2016, doi: 10.1177/0733464814542465.
- [20] J. Moghaddasi, H. Mehralian, Y. Aslani, R. Masoodi, and M. Amiri, "Burnout among nurses working in medical and educational centers in Shahrekord, Iran.," *Iran. J. Nurs. Midwifery Res.*, vol. 18, no. 4, pp. 294–7, 2013.
- [21] M. Yıldırım and F. Solmaz, "COVID-19 burnout, COVID-19 stress and resilience: Initial psychometric properties of COVID-19 Burnout Scale," *Death Stud.*, vol. 0, no. 0, pp. 1–9, 2020, doi: 10.1080/07481187.2020.1818885.