Asia Pacific Environmental and Occupational Health Journal (ISSN 2462 -2214), Vol 8 (1): 22 – 29, 2022

HEALTH WORKERS BURNOUT DURING COVID-19 PANDEMIC IN INDONESIA: PREVALENCE AND CONSEQUENCE

Dewi Sumaryani Soemarko[1,2], Ray Wagiu Basrowi[3], Levina Chandra Khoe[1], Marsen Isbayuputra[1]

[1]Department of Community Medicine, Faculty of Medicine, Universitas Indonesia, Indonesia
[2]Occupational and Environmental Health Research Center, IMERI, Universitas Indonesia, Indonesia
[3]Danone Specialized Nutrition Indonesia

Corresponding author: Levina Chandra Khoe;Email address: levinachandramd@gmail.com or levina.chandra01@ui.ac.id.

ABSTRACT

Objective: This study aims to understand the prevalence and factors affecting burnout syndrome among health workers in Indonesia.

Method: A cross-sectional online survey using Google Form platform was disseminated to health workers using snowball approach. The link was shared through social media groups containing health workers. We used Indonesian version of Maslach Burnout Inventory (MBI) questionnaire to assess the three domains of burnout, i.e., emotional exhaustion, depersonalization, and personal accomplishment.

Result: A total of 1,461 health workers from 33 provinces in Indonesia participated in this study. The majority of respondents were female (75.6%), married (73.5%), and worked as general physician (49.0%). About 82% of health workers reported moderate level of burnout. High emotional exhaustion was experienced in 22.1% respondents, high depersonalization among 11.2%, and low personal accomplishment in 29.4%. Job category and experience in treating COVID-19 were associated with high level of emotional exhaustion and depersonalization ($p < 0.05$).

Conclusion: Moderate level of burnout syndrome was reported among health workers in Indonesia during the COVID-19 pandemic. This condition is related to job category, marital status, and experience in treating COVID-19 patients.

Keywords: *Occupational health, burnout, pandemic, COVID-19*

1. Introduction

The spread of Coronavirus in Indonesia has been recognized since March 2020. As of 13 October, the number of cases in Indonesia has reached nearly 350,000 and ranked the second highest country in the Southeast Asia. The impact of COVID-19 pandemic is experienced by the whole society, including health care workers, who directly treated the COVID-19 patients. They are people on the front lines who are at high risk of contracting COVID-19.

Studies have been exploring the impact of COVID-19 pandemics on health care workers, especially related to burnout syndrome. Burnout is defined as a psychological syndrome caused by a prolonged response to various stressors. This condition is described by three main characteristics, namely emotional exhaustion, depersonalization, and reduced personal accomplishment [1,2]. Emotional exhaustion refers to the feelings of lack of energy when the person is emotionally overwhelmed with the work.

Depersonalization is a condition when the person develops a cynical attitude towards persons for whom work is done. While reduced personal accomplishment refers to the diminished feeling of competence in doing the work [2]. Even before the emergence of COVID-19 pandemic, burnout phenomenon has been found among healthcare workers. Studies in high-income countries have shown that nearly half of outpatient healthcare providers experienced high levels of emotional exhaustion, depersonalization, and low personal accomplishment [3-5].

This is also supported by a systematic review that reported more emotional exhaustion among outpatient providers compared to inpatient physicians. Nevertheless, both outpatient and inpatient have no significant differences in terms of depersonalization and low personal accomplishment. In this study, the burnout syndrome was associated with lack of community support, high volume of patients and paperwork, long waits for specialists and tests, also medicolegal concerns [6]. Similar result was found in studies conducted among middle- and low-income countries. The studies found more than one-third of healthcare providers experienced moderate to high levels of emotional exhaustion, depersonalization, and low personal accomplishment. The estimation of burnout varies between countries, specialties, type of work (inpatient/outpatient), and location (urban/rural) [7].

Besides physicians, nurses, residents, and medical students are also exposed to high stressors arising from work environment. Study in France found that one-third of intensive care unit (ICU) nursing staff had severe burnout syndrome (BOS) [8]. While in Indonesia, studies among ICU and inpatient nurses had low to moderate level of BOS. These studies may not reflect the situation in the country, since these studies conducted only in single institution and might be affected by the management in the workplace [9].

The prevalence of BOS among residents and medical students in their first clinical year were also high. About 44% of residents in anesthesiology had severe BOS, 35% of medical students had high level of emotional exhaustion, 57% had high level of depersonalization, and 51% had low personal accomplishment [10,11]. Healthcare workers are very susceptible to job burnout due to high emotional pressure and workload, unpredictable situation, and risk of contracting various infectious diseases. In the midst of COVID-19 pandemic, the challenges are even bigger, e.g., the disease pathophysiology is still unknown, the mode of transmission is unclear, and the number of COVID-19 patients is increasing. In addition, there are misperception about COVID-19 among public and the support from government and health facilities are limited. These could contribute to the high level of BOS among healthcare workers. Recent survey among 33 countries reported that half of the respondents had emotional exhaustion during the COVID-19 pandemic [12].

Other study in Japan revealed that one-third of healthcare workers had BOS, with the highest among radiological technologists, followed with laboratory medical technologists and nurses. Factors contributing to the job burnout include high workload, high job stress, high time pressure, limited organizational support, and unfamiliarity with personal protective equipment [13].

Given that there are various factors affecting the level of BOS among healthcare workers, and the preparedness of healthcare system in each country in facing pandemic situation is not the same for all nations, gathering opinions from healthcare workers would provide us an overview of how COVID-19 pandemic affect the mental health of healthcare workers. This study aims to understand the prevalence and factors affecting BOS of healthcare workers during COVID-19 pandemic.

2. Materials and Method

This study applied an online cross-sectional survey among healthcare workers between August 11 and 25, 2020. This study was approved by the Research Ethics Committee of Faculty of Medicine, Universitas Indonesia (No.KET-660/UN2.F1/ETIK/PPM.00.02/2020). Respondents were asked for informed consent before they filled in the survey.

2.2. Criteria for Respondents

The inclusion criteria were those working as healthcare workers in Indonesia, including primary care physicians, specialists, dentists, nurses, laboratory personnel, and pharmacists. Potential respondents were approached via message containing a link to the survey posted in social media platform (Whatsapp group, Facebook, Instagram).

2.3. Data Collection

The survey was performed using Google Form method which is a cloud-based questionnaire. Respondent's demographic characteristics (age, gender, marital status), job experiences (working time, duration of work, job category), working environment (type of workplace, support from workplace), and activities related to COVID-19 (working at COVID referral hospital, experience in treating COVID-19 patients) were asked in the questionnaire.

The prevalence of burnout among healthcare workers during COVID-19 pandemic was assessed using the validated Indonesian version of the Maslach Burnout Inventory (MBI) [14]. There are 22-item questions containing 3 domains of burnout, i.e., emotional exhaustion, depersonalization, and personal accomplishment. The responses were constructed on a 7-point, Likert scale, -ranging from 0 (never) to 6 (every day). The cut-off scores were used for emotional exhaustion: low: ≤16, moderate: 17-26, high: ≥ 27; for depersonalization: low: ≤6, moderate: 7-12, high: ≥ 13, for personal accomplishment: low: ≥ 39, moderate: 38-32, and high: ≤ 31.

The qualitative approach to estimate the level of BOS were used by counting the number of 'yes' answer in first and second domain, and 'no' answer in the third domain. The level of BOS is defined by the total score of three domains, with the total score for severe BOS > 16, moderate: 8-16, and low < 8.

2.4. Data Analysis

A descriptive analysis was performed for each variable in the survey. Chi square ($\chi 2$) test for categorical variables and the Mann-Whitney U test for continuous variables were used. Logistic regression analysis was performed to evaluate the association between job category, experience in treating COVID-19 patients, working at COVID-19 referral hospital, the use of personal protective equipment (PPE) with BOS. All analyses were performed using SPSS statistical software version 20.0 (IBM Corp) with two-sided alpha = 0.05.

3. Results

Of 1,628 respondents, 1,461 (89,7%) gave their consent and included in the analysis. Respondents came from 33 provinces in Indonesia, with main respondents from Java Island (66.5%), followed with Sumatra Island (12%), and Kalimantan (7.2%). The median age of respondents was 35 years, with a range between 18 to 63 years. In terms of working period, the respondent's median was 5 years (6 months to 32 years). The working hours were significantly changed before and during COVID-19 pandemic (43.6 ± 14.0 hours versus 38.5 ± 15.3 hours, $p < 0.05$). The workers spent less working hour per week in current pandemic situation. Table 1 describes the respondent's demographic characteristics.

The majority of respondents (82%) had moderate level of BOS, and only 1% of them had severe BOS. High emotional exhaustion was experienced in 22.1% respondents, high depersonalization among 11.2%, and low personal accomplishment in 29.4%. Across different job category, all healthcare workers had moderate level of BOS (> 80%).

The score in each domain were as followed: emotional exhaustion 16.4 ± 13.1, depersonalization 4.3 ± 5.9, and low personal accomplishment 36.1 ± 9.8. If we categorized using qualitative approach, about 17% (248/1461) had low BOS, 82% (1197/1461) at moderate level, and only 1% (16/1461) at severe level. In the bivariate analysis, gender, age, marital status, job category, experience in treating COVID-19 patients, and working at COVID-19 referral hospitals were significantly associated with the subscales of burnout.

In the multivariate analysis, emotional exhaustion was associated with marital status (OR = 1.39, 95% CI = 1.05-1.85, $p < 0.05$), job category (OR = 1.66, 95% CI = 1.27-2.16, $p < 0.05$), and experience in treating COVID-19 patients (OR = 1.62, 95% CI = 1.21-2.15, $p< 0.05$). While depersonalization was associated with job category (OR = 1.51, 95% CI = 1.12-2.04, $p < 0.05$) and experience in treating COVID-19 (OR = 1.55, 95% CI = 1.11-2.15, $p < 0.05$), and low personal accomplishment was associated with marital status (OR = 1.54, 95% CI = 1.17-2.04, $p < 0.05$) and job category (OR = 1.39, 95% CI = 1.08-1.81, $p < 0.05$).

A comparison between those who had experience versus no experience in treating COVID-19 patients for each domain of MBI was performed. Emotional exhaustion was associated with general physician (OR = 2.14, 95% CI = 1.56-2.93, $p < 0.05$), all physicians (OR = 2.09, 95% CI = 1.56-2.81, $p < 0.05$) and midwives (OR = 2.43, 95% CI = 1.54-3.85, $p < 0.05$). Depersonalization was associated with general physician (OR = 2.01, 95% CI = 1.38-2.92, $p < 0.05$) and all physicians (OR = 2.08, 95% CI = 1.47-2.96, $p < 0.05$). While no association was found in the domain of low personal accomplishment ($p > 0.05$).

4. Discussion

The World Health Organization (WHO) classifies burnout as" occupational phenomenon" and no longer as medical condition. Burnout is a syndrome resulted from unmanaged prolonged stress at the workplace. Health workers are known to be at high risk for workplace stress compared to other professionals [15]. The consequences of burnout are not only affected healthcare workers, but also patients. It may harm professional effectiveness, reduces concentration, and affects patient safety [16].

Prior to COVID-19, the prevalence of healthcare workers' burnout have ranged from 43% to 48%, with highest level of emotional exhaustion (99.6%) and depersonalization (98.0%), also lowest personal achievement (99.3%) found among nurses in South Africa, 7 Other study measured the global prevalence of burnout among nurses and found 11.23% had BOS [17]. In Indonesia, there is no known published study on national prevalence of BOS among healthcare workers. Nevertheless, we found several studies conducted in a single hospital, i.e. about 4% of inpatient nurses in a single hospital had severe BOS, and 44% of residents had BOS [10,18].

During COVID-19 pandemic, global data from 33 countries showed 51% of healthcare workers had burnout [12]. A study in Japan had lower burnout prevalence rate, i.e. 31.4% among healthcare workers [13]. Our study found 82% of healthcare workers had moderate level of BOS, and only 1% had severe BOS. Burnout prevalence rate varies widely because of different measuring instruments. Morgantini et al measured the prevalence of burnout by a single item on a 7-point Likert scale using the statement, "I am burned out from my work" [12]. While Matsuo et al used validated Japanese version of the MBI with different number of item questionnaire and different cut-off with our study [13]. Therefore, the audience should be careful in interpreting the burnout prevalence rate and the rate should not be compared directly.

Marital status, job category, and experience in treating COVID-19 patients were three factors that significantly associated with burnout subscales in this study. Married healthcare workers had higher risk for burnout compared to singles. However, we did not analyze further whether the singles were those unmarried or divorced/widowed. In the current pandemic situation, healthcare workers have high risk of contracting COVID-19 virus and may experience fear of contagion and spreading the virus to their family [19,20]. Nevertheless, we cannot conclude that similar fear was not experienced by those who unmarried.

In terms of job category, we found no significant differences between general physicians and other healthcare workers in association with burnout syndrome ($p > 0.05$). However, in the subgroup analysis, physicians and midwives who treated COVID-19 patients had significant association with emotional exhaustion, compared to those who had no experience in treating COVID-19 patients. The result of our study was not similar with those conducted in Japan, where nurses, laboratory medical technologists, radiological technologists, and pharmacists had higher burnout prevalence compared to physicians. Matsuo et al conducted study in a single hospital, whereas our study was not limited to a single institution. In addition, the respondents were recruited through snowball sampling via social media platform, in which physicians were easier to reach by our team.

This study has several limitations. Even though this was the first study in Indonesia that assess the burnout prevalence of healthcare workers, this study did not conduct a deep analysis on the healthcare workers' concern in the midst of pandemic. Shanafelt et al [21] held discussion with healthcare professionals in United States to understand their concern during COVID-19 pandemic.

Their main concern was related to the access to appropriate PPE, fear of spreading the virus to their families/relatives, fear of not having access to testing, the uncertainty of organization support towards their personal and family needs if they

were infected, support for their child education and other needs, also access to updated information.

Our study did not have sufficient data to confirm whether Indonesian healthcare workers had similar reasons. Nevertheless, the news spread in television and social media had raised the issue of stigmatization on healthcare workers by the public. Other limitations was the use of social media as recruitment method. There is a potential selection bias in which only healthcare workers who were active in social media would be recruited in our study, and we might not capture those probably older, live in remote islands and cannot access internet. Since Indonesia is a vast country with thousands of islands, our study might represent merely those who live in urban or semiurban areas.

5. Conclusion

Our study reported 82% of Indonesian healthcare workers were at moderate level of burnout syndrome. Emotional exhaustion was significantly associated with marital status, job category, and experience in treating COVID-19 patients. Furthermore, this condition was more apparent in the physicians and midwives who treated COVID-19 patients. Government should pay attention on the high rate of BOS among healthcare workers as they are the main core of the healthcare system. Mitigation measures should be taken immediately by government and healthcare institutions by providing organizational support, peer group support, or psychological services.

Conflicts of Interest

The author declares no conflict of interest.

Acknowledgement

We thank the Study Program in Occupational Medicine, Department of Community Medicine, Faculty of Medicine, Universitas Indonesia for all the support. We are also grateful for Professor Ari Fahrial Syam, the Dean of Universitas Indonesia, for his continuous support. Last, this study would not be possible without the help from health workers community and professional association, i.e. Indonesian Doctors Association, Indonesian Midwives Association, Indonesian Pharmacist Association, and Indonesian Health Laboratory Technology Expert Association.

References

1. Montero-Marín J, García-Campayo J, Mera DM, del Hoyo YL. (2009). A new definition of burnout syndrome based on Farber's proposal. J Occup Med Toxicol, 4:31. https://doi.org/10.1186/1745-6673-4-31

2. World Health Organization. (2019). Burn-out an "occupational phenomenon": International Classification of Diseases. 28 May 2019. Available from: https://www.who.int/mental_health/evidence/burn-out/en/ [Accessed date: September 18, 2020]

3. Lee FJ, Stewart M, Brown JB. (2008). Stress, burnout, and strategies for reducing them: what's the situation among Canadian family physicians?. Can Fam Physician, 54:234–5.

4. Roberts DL, Shanafelt TD, Dyrbye LN, West CP. (2014). A national comparison of burnout and work-life balance among internal medicine hospitalists and outpatient general internists. J Hosp Med, 9:176–81. 10.1002/jhm.2146

5. Soler JK, Yaman H, Esteva M, Dobbs F, Asenova RS, Katic M, et al. (2008). Burnout in European family doctors: the EGPRN study. Fam Pract, 25:245–65. 10.1093/fampra/cmn038

6. Roberts DL, Cannon KJ, Wellik KE, Wu Q, Budavari AI. (2013). Burnout in inpatient-based versus outpatient-based physicians: a systematic review and meta-analysis. J Hosp Med, 8(11):653-64. doi: 10.1002/jhm.2093. PMID: 24167011.

7. Dugani S, Afari H, Hirschhorn LR, Ratcliffe H, Veillard J, Martin G, et al. (2018). Prevalence and factors associated with burnout among frontline primary health care providers in low- and middle-income countries: A systematic review. Gates Open Res, 2:4. doi:10.12688/gatesopenres.12779.2

8. Poncet MC, Toullic P, Papazian L, Kentish-Barnes N, Timsit JF, Pochard F, Chevret S, Schlemmer B, Azoulay E. (2007). Burnout syndrome in critical care nursing staff. Am J Respir Crit Care Med,175(7):698-704. doi: 10.1164/rccm.200606-806OC. Epub 2006 Nov 16. PMID: 17110646.

9. Ramdani ML. (2020). Factor analysis relating to burnout syn-drome among ICU-ICCU nurses. [Analisis faktor yang berhubungan dengan burnout syndrome pada perawat ruang ICU-ICCU]. Paper presented at: The 4th National Seminar for Community Service Research year 2019. [Seminar Nasional Hasil Penelitian dan Pengabdian pada Masyarakat IV tahun 2019]; October 19, 2020; Purwok-erto, Indonesia.

10. Sutoyo D, Kurniadi R, Fuadi I. (2018). Burnout syndrom among anesthesiology residents in faculty of medicine Padjadjaran University [Sindrom burnout pada peserta program pendidikan dokter spesialis anestesiologi dan terapi intensif fakultas kedokteran universitas padjadja-ran]. Jurnal Anestesi Perioperatif ,6:153-61.

11. Dianti NA, Findyartini A. (2019). The relationship of motiva-tion type with prevalence of burnout among medical stu-dents of Universitas Indonesia transitioning from pre-clinical to clinical stage in 2018 [Hubungan tipe mo-tivasi terhadap kejadian burnout pada mahasiswa fakultas kedokteran Universitas Indonesia pada masa transisi dari pendidikan preklinik ke klinik tahun 2018]. eJKI, 7:115-21.

12. Morgantini LA, Naha U, Wang H, Francavilla S, Acar Ö, Flores JM, et al. (2020). Factors contributing to healthcare pro-fessional burnout during the COVID-19 pandemic: A rapid turnaround global survey. PLOS ONE, 15:0238217. https://doi.org/10.1371/journal.pone.0238217

13. Matsuo T, Kobayashi D, Taki F, Sakamoto F, Uehara Y, Mori N, et al. (2020). Prevalence of health care worker burnout during the coronavirus disease 2019 (COVID-19) pan-demic in Japan. JAMA Network Open3:e2017271

14. Noveria PS. (2008). The implication of drug addicted patients management with burnout syndrome among workers at XY hospitals in Jakarta [theses]. Depok, Indonesia: Uni-versitas Indonesia.

15. Birhanu M, Gebrekidan B, Tesefa G, Tareke M. (2018). Work-load determines workplace stress among health profes-sionals working in Felege-Hiwot Referral Hospital, Bahir Dar, Northwest Ethiopia. J Environ Public Health, 2018:6286010. doi:10.1155/2018/6286010

16. World Health Organization. (2019). Health workforce burn-out. Bull World Health Organ ,97:585-6. doi: http://dx.doi.org/10.2471/BLT.19.020919

17. Woo T, Ho R, Tang A, Tam W. (2020). Global prevalence of burnout symptoms among nurses: A systematic review and meta-analysis. J Psychiatr Res,123:9-20

18. Purnawati Y, Martiana T, Hargono R, Rahman FS. (2020). The analysis of workload and safety communication against burnout syndrome in inpatient nurses. Indian Journal of Forensic Medicine & Toxicology,14:2269-73.

19. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychi-atry ,7(3):228-229. doi:10.1016/S2215-0366(20)30046-8

20. Souadka A, Essangri H, Benkabbou A, Amrani L, Majbar MA. (2020). COVID-19 and healthcare worker's families: be-hind the scenes of frontline response. E Clinical Medicine, 23:100373. doi:10.1016/j.eclinm.2020.100373

21. Shanafelt T, Ripp J, Trockel M. (2020). Understanding and Ad-dressing Sources of Anxiety Among Health Care Profes-sionals During the COVID-19 Pandemic. JAMA, 323(21):2133–2134. doi:10.1001/jama.2020.5893

Tabel 1. Respondent's Characteristics

Variable	n	%
Gender		
• Male	357	24.4
• Female	1104	75.6
Marital status		
• Not married	387	26.5
• Married	1074	73.5
Job category		
• General physician	716	49.0
• Specialists	150	10.3
• Dentists	17	1.2
• Dental specialists	8	0.5
• Midwives	390	26.7
• Nurses	151	10.3
• Laboratory personnel	16	1.1
• Pharmacists	13	0.9
Type of workplace		
• Public hospital	375	25.7
• Private hospital	277	19.0
• Community health centre	459	31.4
• Private clinic	349	23.9
• Laboratory	1	0.1
Working at COVID-19 referral hospital (n = 1070)		
• Yes	469	43.8
• No	601	56.2
Experience in treating COVID-19 patients (n= 1414)		
• Yes	804	56.9
• No	610	43.1
Changes in working hours		
• Yes	737	50.4
• No	724	49.6
Availability of PPE at workplace (n= 1433)		
• Yes	1405	98.0
• No	28	2.0
Routine PCR swab test at workplace		
• Yes	372	25.5
• No	1089	74.5
Routine rapid test at workplace		
• Yes	603	41.3
• No	858	58.7

Table 2. Determinant Factors Associated with Burnout in Healthcare Workers

Burnout subscales	Risk factors	OR (95% CI)	p value
Emotional exhaustion	Gender	1.17 (0.88-1.57)	0.27
	Age	1.70 (0.95-3.07)	0.08
	Marital status	1.39 (1.05-1.85)	0.02*
	Job category	1.66 (1.27-2.16)	0.00*
	Treating COVID-19	1.62 (1.21-2.15)	0.00*
	COVID-19 referral hospital	1.14 (0.86-1.50)	0.36
Depersonalization	Gender	1.35 (0.98-1.85)	0.07
	Age	1.55 (0.76-3.15)	0.23
	Marital status	1.37 (1.00-1.87)	0.05
	Job category	1.51 (1.12-2.04)	0.01*
	Treating COVID-19	1.55 (1.11-2.15)	0.01*
	COVID-19 referral hospital	1.19 (0.87-1.63)	0.26
Low personal accomplishment	Gender	1.18 (0.88-1.56)	0.25
	Age	1.28 (0.76-2.17)	0.35
	Marital status	1.54 (1.17-2.04)	0.00*
	Job category	1.39 (1.08-1.81)	0.01*
	Treating COVID-19	0.99 (0.75-1.29)	0.51
	COVID-19 referral hospital	1.09 (0.83-1.44)	0.95

** p is significant when <0.05*

Table 3. Association between Experience in Treating COVID-19 Patients with Burnout Subscales Based on Job Category

Burnout subscales	Job Category	OR (95% CI)	P value
Emotional exhaustion	General physician	2.14 (1.56-2.93)	0.00*
	All physicians (GP & specialists)	2.09 (1.56-2.81)	0.00*
	Nurses	0.64 (0.32-1.25)	0.13
	Midwives	2.43 (1.54-3.85)	0.00*
Depersonalization	General physician	2.01 (1.38-2.92)	0.00*
	All physicians (GP & specialists)	2.08 (1.47-2.96)	0.00*
	Nurses	0.56 (0.25-1.25)	0.11
	Midwives	1.39 (0.75-2.58)	0.18
Low personal accomplishment	General physician	1.04 (0.76-1.41)	0.83
	All physicians (GP & specialists)	1.12 (0.84-1.49)	0.45
	Nurses	0.58 (0.29-1.13)	0.08
	Midwives	0.96 (0.63-1.48)	0.48

** p is significant when <0.05.*