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Risk of Burnout among Younger Health Quarantine Workers in Indonesia

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Abstract

Introduction: Burnout is a work-related stress condition commonly associated with long working hours and high job demands, making health quarantine workers particularly vulnerable. Evidence on the role of age in burnout is inconsistent, although older workers are often assumed to be at higher risk. This study investigates the relationship between age and burnout among health quarantine workers to determine which age group is more prone to burnout and to provide evidence that can guide early preventive interventions.
Methods: A cross-sectional study was conducted in September–October 2025 using secondary data from a survey by PT Y. Burnout was measured using the Maslach Burnout Inventory (MBI) questionnaire.
Results: Burnout prevalence among health quarantine workers was 25.4%. Multivariate analysis showed a *p*-value of 0.049 for age. Statistical tests showed *p*-values > 0.05 for the relationships between gender, education level, marital status, having children under five years old, work patterns, length of service, work area, employment status, or commuting distance with overall burnout.
Conclusion: More than one-fourth of health quarantine workers experienced burnout, with younger workers showing the highest risk. Age was the strongest predictor of burnout, indicating greater vulnerability among younger staff. Targeted support for early-career workers is essential to reduce burnout risk and strengthen workforce well-being.
Keywords: burnout, health quarantine workers, work pattern, age

Abstrak

***Pendahuluan**: Burnout merupakan kondisi terkait stres yang dipengaruhi oleh jam kerja panjang dan tuntutan pekerjaan yang tinggi, sehingga membuat petugas bidang kekarantinaan kesehatan menjadi kelompok yang sangat rentan. Bukti mengenai peran usia dalam burnout masih tidak konsisten, meskipun pekerja yang lebih tua sering diasumsikan memiliki risiko lebih tinggi. Penelitian ini menelaah hubungan antara usia dan burnout pada petugas bidang kekarantinaan kesehatan untuk mengidentifikasi kelompok usia yang lebih rentan serta mendukung upaya pencegahan dini.*
***Metode**: Sebuah penelitian potong lintang dilakukan pada bulan September-Oktober 2025 dengan menggunakan data sekunder dari hasil survei oleh PT Y. Instrumen pengukuran burnout yang digunakan adalah kuesioner MBI.*
***Hasil**: Prevalensi burnout pada petugas bidang kekarantinaan kesehatan adalah 25,4%. Pada analisis multivariat hubungan umur dengan burnout didapatkan nilai p=0,049. Didapatkan nilai p>0,05 pada uji statistik hubungan jenis kelamin, tingkat pendidikan, status pernikahan, jumlah anak, memiliki anak balita, pola kerja, masa kerja, wilayah kerja, status kepegawaian, jarak rumah ke tempat kerja dengan burnout.*
***Kesimpulan**: Lebih dari seperempat petugas kekarantinaan kesehatan mengalami burnout, dengan pekerja yang lebih muda menunjukkan risiko paling tinggi. Usia merupakan faktor yang paling dominan terjadinya burnout, yang menunjukkan bahwa petugas yang lebih muda lebih rentan. Dukungan yang ditujukan khusus bagi pekerja di periode awal karier sangat penting untuk menurunkan risiko burnout dan meningkatkan kesejahteraan tenaga kerja.*
***Kata kunci**: burnout, petugas kekarantinaan kesehatan, pola kerja, umur*

Introduction

Burnout is defined as a state of prolonged occupational stress that remains unresolved over time.[1] It represents a condition of stress and emotional exhaustion, frustration, and fatigue that arise from a mismatch between individual expectations and workplace realities.[2] Maslach conceptualized burnout as comprising three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment. This framework provides an understandable definition for each dimension that lines up with measurement instruments for this study.[3]

Emotional exhaustion is the most obvious manifestation of burnout reflecting stress due to excessive workload and loss of emotional energy. Depersonalization refers to a sense of detachment marked by cynicism or a diminished sense of concern toward work and others in the workplace. Reduced personal accomplishment is characterized by feelings of inefficacy, low self-esteem, and dissatisfaction with self performance.[3]

Several factors has been identified as contributors to burnout such as shift work patterns with ≥12-hour shifts, night duties, ≤8 days off per month, and a lack of flexibility in scheduling that increases emotional exhaustion. Psychological pressures and job complexity also play a role, encompassing role conflict, minimal task variety, unclear job expectations, the complexity of patient care, and requirements related to accreditation processes. In addition, interpersonal dynamics within the workplace, including communication quality and the strength of relationships among colleagues, physicians, and supervisors, further influence the risk of burnout. [4]

The risk factors for burnout can be categorized into demographic factors, occupational factors, and organizational factors. Demographic factors include gender, age, marital status, number of children, education level, and social or family support. Each individual possesses distinct characteristics and stress-coping mechanisms. Family or social support does not always act as a protective factor. Occupational factors include length of service, workload, work shifts, task complexity, and job autonomy. High workload and low job control significantly increase the risk of burnout. Organizational factors involve the work system, organizational culture, leadership, and managerial support. An imbalance between job demands and organizational resources is a primary cause of burnout.[3]

Health quarantine workers work in a governmental institution under the Ministry of Health of the Republic of Indonesia, responsible for preventing and controlling the entry or exit of diseases and other public health risks at national points of entry such as airports and land border posts.[5] They are required to work with long hours shift as part of their role in delivering direct services to the public. The long hours shift duration can reach up to 28 hours per shift, with an average of 56–84 working hours per week, under an irregular rotating shift schedule.[6] Health quarantine workers face long working hours, unpredictable shift systems, and constant readiness demands during emergency situations. These conditions potentially contribute to burnout, which can negatively affect work productivity and the quality of public health services in the airport environment.[7]

A study in 2022 concluded that there was no significant association between age, gender, education, marital status, commuting distance, or task-related factors with burnout. However, mental workload, length of service, and locus of control were significantly associated with burnout.[8] A study conducted in 2019 also found that burnout was a major and prevalent problem among healthcare workers in Iran, driven by diverse and increasing occupational stressors.[9]

Among various determinants of burnout, age has received substantial theoretical attention. Age was categorized as ≤40 and >40 years to distinguish younger from older workers, consistent with previous occupational health studies that used a 40-year cut-off when examining various work-related outcomes among healthcare workers.[11,12] In many occupational settings, older workers are believed to be more vulnerable to burnout, due to the cumulative psychological load accumulated over years of service, increased administrative responsibilities, and age-related changes in physical and cognitive endurance. They are also more likely to occupy roles with greater responsibility, potentially increasing emotional strain and contributing to burnout.[12-14] Several studies instead showed that younger healthcare workers experience higher burnout, driven by limited work experience, underdeveloped coping strategies, irregular shift adaptation, and pressure to demonstrate competence.[15,16]

The primary objective of this study was to examine the association between age and burnout among health quarantine workers. In particular, this study aimed to determine whether older workers are indeed at higher

risk of burnout, as theoretically assumed.[12] In addition, the study sought to generate evidence that can guide early anticipatory measures to prevent the progression of burnout and avert further psychological or occupational complications among health quarantine workers.

Methods

The study utilized a cross-sectional design using secondary data from the results of a survey on work patterns, fatigue, and productivity among health quarantine workers. The study was conducted from September to October 2025. Secondary data were collected in September 2025 from PT Y. The study was conducted between September and October 2025. Secondary data were collected in September 2025 from PT Y.

The target population involved all health quarantine workers across Indonesia, whereas the accessible population included the data of all health quarantine workers in Jakarta who completed the survey from PT Y in December 2024. The inclusion criteria was the availability of complete secondary data, while incomplete data were excluded. The sample size was calculated using an analytical study sample size formula based on the difference in burnout proportions between younger and older workers, yielding an estimated required sample size of 514 participants. The study sample was determined through total sampling of the accessible population that met the inclusion and exclusion criteria. The final sample consisted of 114 respondents representing the majority of health quarantine workers.

The dependent variable was burnout, measured using the Maslach Burnout Inventory (MBI) questionnaire. The independent variables included gender, age, education level, marital status, number of children, having children under five years old, work pattern, length of service, work area, employment status, and commuting distance.

There is no universally accepted absolute cutoff for determining burnout. In this study, burnout was determined by identifying the presence of burnout manifestations, defined as a high score in emotional exhaustion and/or depersonalization.[17]

This study obtained ethical approval from Health Research Ethics Committee of the Faculty of Medicine, University of Medicine, under approval number KET-1320/UN2.F1/ETIK/PPM.00.02/2025. To ensure the confidentiality of respondent identities, the data used in this study were fully anonymized.

Results

Burnout prevalence among health quarantine workers was 25.4%, mentioned at Table 1. Female respondents accounted for the majority. The median age was 42 years, and most respondents held a bachelor's degree. The majority were married and had two children, while 76.3% had no children under five years old. More than half worked under an office-hour schedule, with a median length of service of 12 years. Most respondents were assigned to the main office area and were civil servants. The median commuting distance was 28.5 km. Details are provided in Table 1.

Burnout was more prevalent among male respondents, with a mean age of 37 years, diploma education, unmarried status, an average of two children, and those with children under five years old. Burnout was also higher among those with long hours shift schedules, a median length of service of 10 years, working in Terminal A, non-permanent government employment, and an average commuting distance of 27 km. Details are shown in Table 1.

Variables were initially screened using a p-value <0.25, although this criterion was not applied rigidly. Previous studies have shown that length of service is strongly correlated with age,[18] and including both variables may compromise model stability. Therefore, length of service was excluded from the final model. Work pattern, gender, and age met the selection criteria and were entered into the logistic regression analysis. Age retains a significant association with burnout after adjustment for work pattern and gender (p=0.049). Details are provided in Table 2.

Discussion

This study found that younger health quarantine workers were more likely to experience burnout than older workers, which contradicts the initial hypothesis that older workers would have higher burnout due to accumulated work stress, increased responsibilities, and age-related declines in physical and psychological endurance.[3,13,14] This unexpected finding shows that age is a complex factor in occupational burnout and cannot be assumed to act in a single direction.[3,4] There

Table 1. Statistical analysis of demographic and occupational factors toward burnout (n=114)

Variable	With Burnout	Without Burnout	p	OR (95%CI)
Gender				
Male	10 (33.3%)	20 (66.7%)	0.247[C]	1.711 (0.685 – 4.271)
Female	19 (22.6%)	65 (77.4%)		
Age (y)	37 (25–58)*	43 (24–58)*	0.051[M]	
Education Level				
High school	2 (20%)	8 (80%)	1.000[F]	0.713 (0.142 – 3.568)
Diploma[V1]	9 (28.1%)	23 (71.9%)		
Bachelor's Degree [V1]	16 (27.1%)	43 (72.9%)		
Master's Degree [V1]	2 (15.4%)	11 (84.6%)		
Marital Status				
Single[V2]	5 (29.4%)	12 (70.6%)	1.000[F]	1.057 (0.344 – 3.242)
Widowed[V2]	- (0%)	2 (100%)		
Married	24 (25.3%)	71 (74.7%)		
Number of Children (c)	2 (0 – 4)*	2 (0 – 5)*	0.270[M]	
Having Children under 5 y.o				
Yes	8 (29.6%)	19 (70.4%)	0.567[C]	1.323 (0.506 – 3.459)
No	21 (24.1%)	66 (75.9%)		
Work Patterns				
Long hours shift	18 (32.1%)	38 (67.9%)	0.106[C]	2.024 (0.854 – 4.799)
Office hour	11 (19%)	47 (81%)		
Length of Service (y)	10 (0-33)*	13 (0-36)*	0.086[M]	
Work Area				
Terminal A[V3]	4 (44.4%)	5 (55.6%)	0.327[C]	1.585 (0.628 – 3.997)
Terminal B[V3]	6 (33.3%)	12 (66.7%)		
Terminal C[V3]	6 (25%)	18 (75%)		
Emergency Ward[V3]	4 (36.4%)	7 (63.6%)		
Terminal H[V3]	1 (8.3%)	11 (91.7%)		
Main office	8 (20%)	32 (80%)		
Employment Status				
Civil servants [V4]	26 (26.3%)	73 (73.7%)	1.000[F]	0.675 (0.059 – 7.728)
Government employee with work agreement [V4]	2 (16.7%)	10 (83.3%)		
Non-permanent government employee	1 (33.3%)	2 (66.7%)		
Commuting Distance (Km)	27 (8 – 60)*	29 (1 – 98)*	0.948[M]	
Total	29 (25.4%)	85 (74.6%)		

* median (minimum – maximum)
[V1; V2; V3; V4] merged in the statistical analysis
[C] *Chi Square*
[F] *Fisher Exact Test*
[M] *Mann Whitney*

are several reasons why younger workers may experience higher burnout. Younger workers are usually in the early stages of their careers and are still adjusting to the demanding nature of health quarantine work, including rapid decision making, irregular shift schedules, and constant attentiveness. Their limited work experience and less-developed coping strategies may make them more vulnerable to emotional exhaustion and

Table 2. Logistic regression analysis

Variable	With Burnout	Without Burnout	Nilai p	aOR	95%CI
Konstanta			0.139	0.195	
Work Patterns					
Long hours shift	18 (32.1%)	38 (67.9%)	0.162	1.880	0.776 – 4.558
Office hour	11 (19%)	47 (81%)			
Gender					
Male	10 (33.3%)	20 (66.7%)	0.166	1.969	0.755 – 5.134
Female	19 (22.6%)	65 (77.4%)			
Age (y)	37 (25–58)*	43 (24–58)*	0.049	1.048	1.001 – 1.099

* median (minimum – maximum)
Bold p-value indicates significant results

depersonalization.[9,19] Younger workers may also feel greater pressure to demonstrate competence, quickly learn new skills, and manage multiple responsibilities at once.[15,16] These expectations, combined with working in a high-risk public health environment, can increase psychological strain and contribute to burnout.[17,20,21]

This finding is consistent with other research showing that younger workers tend to face higher levels of burnout due to career instability, limited autonomy, and inadequate experience in dealing with job stress.[15,16] Research shows that individuals with fewer years of clinical practice are at greater risk of burnout than those who have spent more time in the profession.[22] For example, burnout has been reported more frequently among healthcare workers aged 22–34 years compared with those over 35 years old.[23] Likewise, the likelihood of burnout appears to be elevated during the first two years of medical training.[24]

In contrast, older workers may have advantages that help protect them from burnout. They often possess more experience, clearer role expectations, and stronger coping mechanisms that help them manage stress more effectively.[9,13] Over time, working in high-demand environments may build resilience and better emotional regulation.[3,4] It is also possible that the "healthy worker survivor effect" is present, meaning that older workers who remain in the system are those who have already adapted to job stress, while those more vulnerable may have left earlier.[13,14] Respondents aged 50–65 years reported substantially better well-being, suggesting that longer professional tenure may enhance the ability to manage occupational stress. Whereas, healthcare workers under the age of 40 demonstrated greater vulnerability to burnout and stress.[25,26]

In addition to age, this study found that other demographic and occupational factors such as education level, marital status, employment status, work area, and commuting distance were not significantly associated with burnout. This suggests that burnout in health quarantine workers may be influenced more by occupational demands such as unpredictable workload, rotating shifts, and continuous operational readiness, rather than individual characteristics.[17,20] The lack of significant associations may also reflect the similar level of work demands across roles, meaning that all workers experience relatively equal stress regardless of background.[5,6,27]

The nonsignificant association between work area and burnout may be due to similar public health risks and readiness requirements across administrative and field roles.[5,6] Likewise, employment status did not show an association with burnout, which may be explained by the high proportion of civil servants in the sample, resulting in little variation in job security and workload.[27,28] The absence of an association between commuting distance and burnout differs from previous studies showing that long commutes can increase fatigue.[29] This difference may reflect better transportation access or variations in how workers perceive travel burden.

This study adds to the growing body of literature showing that age-related burnout patterns are complex and require context-specific strategies. However, the study has several limitations, particularly in its coverage of variables, which were limited to demographic and occupational characteristics. Future longitudinal studies are recommended to explore causal mechanisms and better understand how age interacts with job demands, coping resources, and psychosocial factors over time.

Conclusions

The prevalence of burnout among health quarantine workers was 25.4%. Younger workers were more likely to experience burnout after adjustment for work pattern and gender, indicating that older workers had a lower risk. Age emerged as the most influential factor associated with burnout in this population. These findings highlight younger workers as a particularly vulnerable group within quarantine health systems. Targeted strategies including structured mentoring, stress management training, early career support, and increased organizational resources can help reduce burnout among younger workers, while sustained support for older workers remains essential for maintaining long-term workplace resilience and well-being.

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References

1. WHO. Burn-out an "occupational phenomenon": International classification of diseases [Internet]. Geneva: World Health Organization; 2019 [cited 2025 Sep 7]. Available from: https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases
2. Kamus Besar Bahasa Indonesia. Burnout [Internet]. Jakarta: Badan Pengembangan dan Pembinaan Bahasa; 2025 [cited 2025 Jan 25]. Available from: https://kbbi.web.id/burnout
3. Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annu Rev Psychol 2001;52:397-422.
4. Dall'Ora C, Ball J, Reinius M, Griffiths P. Burnout in nursing: A theoretical review. Hum Resour Health 2020;18:41.
5. Sadikin BG. Peraturan Menteri Kesehatan Republik Indonesia Nomor 10 Tahun 2023 tentang organisasi dan tata kerja unit pelaksana teknis bidang kekarantinaan kesehatan. Jakarta: Kementerian Kesehatan RI; 2023.
6. Nugrahini N. Surat edaran Kepala Balai Besar Kekarantinaan Kesehatan Soekarno Hatta Nomor KP.04.06/C.IX.6/2415/2024 tentang jam kerja bagi pegawai Balai Besar Kekarantinaan Kesehatan Soekarno Hatta. Jakarta: BBKK Soekarno Hatta; 2024.
7. Kurniasari K, Rahmiputri KD. Hubungan burnout syndrome dan kualitas tidur pada tenaga medis: Suatu ulasan artikel. J Akta Trimedika 2025;2:585-600.
8. Maulana M. Faktor-faktor yang berhubungan dengan burnout pada tim vaksinasi COVID-19 di Kabupaten Subang (2020–2022). Jakarta: Fakultas Kedokteran Universitas Indonesia; 2022.
9. Bazmi E, Alipour A, Yasamy MT, Kheradmand A, Salehpour S, Khodakarim S, et al. Job burnout and related factors among health sector employees. Iran J Psychiatry 2019;14:309-16.
10. Chongchitpaisan W, Bandhukul A. The prevalence of burnout and the COVID-19 risk exposure control measure among health workers during pandemic in hospitals in Thailand. J Med Health Sci 2025;32: 172-85.
11. Lützerath J, Bleier H, Stassen G, Schaller A. Influencing factors on the health of nurses—A regression analysis considering individual and organizational determinants in Germany. BMC Health Serv Res 2023;23:100.
12. Mendes B, Miguel I. Age and burnout: The mediating role of emotion-regulation strategies. **Soc Sci** 2024;13:274.
13. Hatch DJ, Freude G, Martus P, Rose U, Müller G, Potter GG. Age, burnout and physical and psychological work ability among nurses. Occup Med (Lond) 2018;68:246-54.
14. Mauno S, Minkkinen J, Tsupari H, Huhtala M, Feldt T. Do older employees suffer more from work intensification and other intensified job demands? Evidence from upper white-collar workers. Scand J Work Organ Psychol 2019;4:3.
15. Taranu S, Ilie A, Turcu AM, Stefaniu R, Sandu I, Pislaru A, et al. Factors associated with burnout in healthcare professionals. Int J Environ Res Public Health 2022;19:14701.
16. El-Menyar A, Ibrahim WH, El Ansari W, Gomaa M, Sathian B, Hssain AA, et al. Characteristics and predictors of burnout among healthcare professionals: A cross-sectional study in two tertiary hospitals. Postgrad Med J 2021;97:583-9.
17. Harry E, Sinsky C, Dyrbye LN, Makowski MS, Trockel M, Tutty M, et al. Physician task load and the risk of burnout among US physicians in a national survey. Jt Comm J Qual Patient Saf 2021;47:76-85.
18. Guzzo R. Tenure, age, and performance: What employers need to know. Denver: Society for Human Resource Management; 2022.
19. Fitri Q, Sari MT, Rahmadhani DY. Hubungan burnout dengan mekanisme koping pada perawat pelaksana di ruang rawat inap Rumah Sakit Jiwa Daerah Provinsi Jambi. J Akad Baiturrahim Jambi 2022;11:185.
20. Reith TP. Burnout in United States healthcare professionals: A narrative review. Cureus 2018;10:e3681.
21. Sun P, Wang M, Song T, Wu Y, Luo J, Chen L, et al. The psychological impact of COVID-19 pandemic on health care workers: A systematic review and meta-analysis. Front Psychol 2021;12: **626547.** doi:10.3389/fpsyg.2021.626547.
22. Matsuo T, Kobayashi D, Taki F, Sakamoto F, Uehara Y, Mori

N, et al. Prevalence of health care worker burnout during the coronavirus disease 2019 pandemic in Japan. JAMA Netw Open 2020;3:e2017271.
23. AlJhani S, AlHarbi H, AlJameli S, Hameed L, AlAql K, Alsulaimi M. Burnout and coping among healthcare providers working in Saudi Arabia during the COVID-19 pandemic. Middle East Curr Psychiatry 2021;28:29.
24. Alkhamees AA, Assiri H, Alharbi HY, Nasser A, Alkhamees MA. Burnout and depression among psychiatry residents during COVID-19 pandemic. Hum Resour Health 2021;19:46.
25. McFadden P, Ross J, Moriarty J, Mallett J, Schroder H, Ravalier J, et al. The role of coping in the wellbeing and work-related quality of life of UK health and social care workers during COVID-19. Int J Environ Res Public Health 2021;18:815.
26. Lim KHJ, Murali K, Thorne E, Punie K, Kamposioras K, Oing C, et al. The impact of COVID-19 on oncology professionals—one year on: Lessons learned from the ESMO resilience task force survey series. ESMO Open 2022;7:100374.
27. Adi N. Laporan survei pola kerja dan kelelahan kerja serta produktivitas pada petugas BBKK Bandara Soekarno-Hatta. Jakarta: BBKK Soekarno Hatta; 2024.
28. Ramdan IM, Fadly ON. Analisis faktor yang berhubungan dengan burnout pada perawat kesehatan jiwa. J Keperawatan Padjadjaran 2016;4:170-178. doi:10.24198/jkp.v4n2.7.
29. Nata S, Jamil P, Rawee M. A growing concern: Long commutes and mental fatigue among workers. Makara J Health Res 2024;28.