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PREVALENCE OF BURNOUT SYMPTOMS IN NURSES HOSPITAL ASSIGNED TO COVID-19 ISOLATION ROOMS

Prevalensi Gejala Burnout Perawat di Rumah Sakit yang Ditugaskan di Ruang Isolasi COVID-19

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Abstract

Background: Burnout is a health problem that may happen to nurses and may impact patient safety and organization in any situations, especially during the second wave of COVID-19 pandemic.
Aims: This study aimed to identify the prevalence of burnout among nurses in charge of isolation rooms and its relationship to their demographics factor.
Methods: This research design is descriptive-analytic quantitative and cross-sectional. It involved 124 nurses assigned to isolation rooms for COVID-19 patients admitted to the first referral hospital in Bali. Data were collected using a questionnaire adopted from the Maslach Burnout Inventory to identify burnout symptoms. Demographic questionnaire was administered to garner respondents' demographics.
Results: High category of burnout was related to emotional exhaustion found in 66.1% of the respondents, depersonalization in 33.1%, and reduced personal accomplishment in 0.8%. Age, marital status, education, and gender were not related to burnout. Nurses who worked in non-ICU experienced higher burnout than ICU ($p < 0.05$).
Conclusions: The prevalence of burnout symptoms in the nurses who were in charge in COVID-19 isolation rooms is in the high category. Hospital management must consider demographic factors to improve the work environment, recruit new employees, conduct routine health checks, and provide mental health treatments consistently.

Keywords: Burnout symptoms, COVID-19 pandemic, isolation room.

Abstrak

Latar Belakang: Burnout *merupakan masalah kesehatan yang dapat terjadi pada perawat dan dapat berdampak pada keselamatan pasien dan organisasi pada berbagai situasi terutama pada masa pandemi COVID-19 gelombang kedua.*
Tujuan: *Penelitian ini bertujuan untuk mengidentifikasi prevalensi gejala burnout perawat di ruang isolasi dan hubungannya dengan faktor demografi.*
Metode: *Penelitian ini merupakan deskriptif analitik kuantitatif yang dilakukan secara potong lintang. Penelitian ini menggunakan 124 perawat yang ditugaskan di ruang isolasi COVID-19 pada rumah sakit rujukan pertama di Bali. Data dikumpulkan pada tahun 2021 menggunakan kuesioner dari Maslach Burnout Inventory untuk mengidentifikasi gejala* burnout*. Selain itu, kuesioner demografi digunakan untuk mengevaluasi demografi responden.*
Hasil: *Kategori burnout tinggi pada dimensi* burnout *didapatkan aspek kelelahan emosional pada 66,1% responden, depersonalisasi pada 33,1%, dan penurunan prestasi diri pada 0,8% responden. Uji analisis korelasi menunjukkan bahwa usia, status perkawinan, pendidikan, dan jenis kelamin tidak berhubungan dengan* burnout*. Perawat yang bertugas di ruang non-ICU mengalami* burnout *lebih tinggi dari ruang ICU ($p < 0,05$).*
Kesimpulan: *Prevalensi gejala* burnout *pada perawat yang bertugas di ruang isolasi COVID-19 berada pada kategori tinggi. Manajemen rumah sakit perlu mengidentifikasi karakteristik demografis yang akan meningkatkan lingkungan kerja, penerimaan pegawai, pemeriksaan kesehatan, dan pelayanan kesehatan mental secara berkala.*

Kata kunci*: Gejala* burnout*, pandemi COVID-19, ruang isolasi.*

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Introduction

Burnout is a chronic, prolonged and energy-draining condition characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Bährer-Kohler, 2017). Fatigue and stress are the main burnout symptoms that affect worker well-being. Stress is a process of rebuilding homeostasis. Herbert Freudenberg in 1974 explained that burnout is a professional pathology that involves stressful conditions, especially in people who carry out nursing activities. According to Christina Maslach in 1997, burnout involves some symptoms such as emotional exhaustion, depersonalization, and reduced personal achievement that arise in workers who work in contact with people (Lupo *et al.*, 2021). People who work in social public services such as social workers, nurses, teachers, and employees are at risk of burnout.

Hospitals are dominantly occupied by nurses who spend most of their time there. A good hospital environment will encourage nurses to work productively. Nurses who have high work stress will easily experience burnout, especially during the COVID-19 pandemic (Abarghouei *et al.*, 2017). This situation results in health problems and challenges health system resilience. As the frontliners in the health system, nurses have an essential role in serving and caring for sick people directly at hospitals. They are directly in contact with COVID-19 patients during this pandemic (Hu *et al.*, 2020).

Psychological illnesses and other mental health symptoms are some possible threats for health personnel actively involved in the diagnosis, treatment, and care of COVID-19 patients. Excessive workload, lack of personal protective equipment (PPE), abundance of news exposure , unavailability of certain medications, and lack of emotional support may add to the mental burden of health workers, particularly nurses. (Luceño-Moreno *et al.*, 2020). Thus, studying the health professional's state of mind and the potential harm is necessary during this pandemic. More than half of the 958 health professionals in Wuhan experienced anxiety and depression symptoms. Notably, 54% of them experienced anxiety symptoms, and 58% had depression. A higher prevalence of stress was found in health workers than other health professionals. Research showed out of 1,257 health workers in China, 760 of whom were from Wuhan, 71.5% showed symptoms of fatigue, 44.6% anxiety, 50.4% depression, and 34% insomnia. Nurses as frontline professionals and others who serve health services during the COVID-19 outbreak likely have more possibilities of experiencing burnout symptoms (Lai *et al.*, 2020).

Research showed during the pandemic in Singapore female nurses and administrative health staff were susceptible to burnout which happened most to nurses. Disengagement and exhaustion occurred to 79.7% and 75.3% of respondents, respectively. Among the respondents, 86.8% met the thresholds for either of the symptoms, and 68.2% for both (Tan *et al.*, 2020).

Health workers in Spanish were found to experience higher levels of fatigue during the pandemic than before. The prevalence of burnout symptoms was at 43.4% since the number of health workers in contact with COVID-19 treatment (49.6%) was higher than those with other diseases (34.6%). They developed some concerns about infection in the workplace, the risk of transmission to nurses' families, and the pandemic period which lasts even longer. Besides, they feel worried about patient safety, practice, and quality of care that they give. Being a physician or nurse doubles the risk of burnout (Torrente *et al.*, 2021).

The first wave of COVID-19 pandemic likely contributes to the occurrence of burnout in the second wave (Bellanti *et al.*, 2021). During the second wave, many nurses were exhausted in carrying out their duties. Therefore, they

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dealt with exhaustion, decreased productivity, clinical assignment errors, and lack of attention to patient condition because they suffered severe psychological and mental health issues (Galanis *et al.*, 2021).

Burnout occurs due to several factors such as emotional exhaustion, depersonalization, and reduced personal accomplishment. Marital status and work experience are likely associated with emotional exhaustion. Employment status and age could be correlated with depersonalization. Reduced personal accomplishment is specifically related to marital status. A survey conducted by Persatuan Perawat Nasional Indonesia (Indonesian National Nurses Association) reported 50.9% of nurses from four Indonesian provinces felt stressful, disoriented, weary, and sleepless due to heavy workloads and low salary. The uncertainty during the pandemic makes nurses handle increasing workloads (Putra and Setyowati, 2019).

The high prevalence of burnout impacts patient safety, organization, and its staff. Burnout nurses are less optimal in carrying out nursing care and turn out having physical, social, and psychological health issues. It is also associated with extrinsic factors such as workload, extended hours, and interpersonal relationships (Garcia *et al.*, 2019; Schlak *et al.*, 2021).

Burnout symptoms seem to have correlation with age, gender, marital status, childbearing, health level, type of work shift, health service area and performance. For people who feel burnout symptoms, they tend to get angry very easily, face conflicts between workers, cry easily, and experience victimization. Once employees are less enthusiastic, stagnant, frustrated, and apathic at work, this may lead to turnover in which they decide to leave the organization, adjust work responsibilities and switch their job (Andarini, 2018).

Based on the above background, the prevalence of burnout among nurses in charge of COVID-19 patients in isolation rooms of the first referral hospital was investigated.

Method

This study is analytic observational research using a cross-sectional approach. It was conducted at one of the university hospitals designated as a COVID-19 referral hospital in Bali from September to October 2021. Online survey was distributed to 124 nurses in charge of COVID-19 patients in isolation rooms. Informed consent and research procedures were informed before filling out the questionnaire. The Maslach Burnout Inventory (MBI) questionnaire was used to measure burnout symptoms in addition to a demographic questionnaire to gather information on age, gender, education, marital status, and work location based on cut-off points according to categories (high, intermediate and low level). This demographic questionnaire consists of 22 statements about emotional exhaustion in seven statements, depersonalization in seven statements, and personal achievement in eight statements (Maslach *et al.*, 2013; Putra and Setyowati, 2019).

The validity test of the MBI-HSS was conducted using the confirmatory factor analysis method which proves whether Maslach's burnout theory (1981) fulfills one-dimensionality of the questionnaire. The confirmatory factor analysis (CFA) results showed that all items on the MBI scale were valid, and thus none of the items were eliminated. The adapted MBI can be used for future research because all items are valid and significant, and none have a negative factor load (Yulianto, 2020).

Supporting data were obtained by reviewing hospital documents such as the hospital's work plan, nurse schedule, bed occupancy ratio, work strategy plans, and management reports. A chi-square test was done in SPSS to examine the frequency distribution of possible burnout levels in the nurses.

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Results and Discussion

Demographic characteristics

The respondents were mostly women (54%), and they were mostly aged between 21 and 30 years (83%) and married (67.7%); most of them had nursing certification (66%)and worked in non-ICU for COVID-19 (57.3%). Table 1 presents the demographic characteristics of the respondents.

Table 1. Demographic characteristics of respondents

Demographic	n	%
Gender		
Male	57	46
Female	67	54
Age (years)		
21-30	103	83.1
31-40	21	16.9
Education		
Associate Degree III	29	23.4
Associate Degree IV	3	2.4
Bachelor	1	0.8
Nursing certification	91	73.4
Marital Status		
Single	40	32.3
Married	84	67.7
Location		
ICU	53	42.7
Non-ICU	71	57.3

**Source: Primary data 2021*

Relationship between burnout and nurse' demographic factors

As many as 25 males and 27 females experienced high burnout. Thirteen male respondents experienced moderate burnout, and 19 males had low burnout. Moreover, 22 female respondents had low burnout, and 18 females suffered moderate burnout. Gender was not related to burnout (p = 0.86). Research in a government hospital in East Java found similar findings that gender did not deal with burnout (Putra *et al.*, 2021).

Results showed 37 respondents aged 21-30 years and four respondents aged 31-40 years experienced low burnout. In addition, 26 respondents aged 21-30 years experienced moderate burnout, and those who experienced high burnout were five people. Forty respondents aged 21-30 years had moderate burnout, and 12 respondents aged 31-40 years experienced high burnout. Age was not related to burnout (p = 0.23). Previous research showed similar results about burnout factors in nurses with mental problems (Ramdan and Fadly, 2016).

Seven respondents with associate degree III and 32 respondents with nursing certification experienced low burnout. Two respondents with associate degree IV had low experience, and one respondent of the group had high burnout. One respondents with bachelor's degree experienced high burnout.Of respondents with associate degree III, six people experienced moderate burnout, and 16 people had high burnout. Among nursing certified respondents, 32 people had low burnout, 25 had moderate burnout, and 34 had high burnout. The statistical analysis suggests education had no significant relationship with burnout (p = 0.40). Supporting this result, previous research found burnout syndrome in nurses in ICU and emergency rooms did not have a relationship with education level (Mariana *et al.*, 2020).

Furthermore, eleven married respondents and thirty single respondents experienced low burnout. The number of married respondents with moderate burnout was 20 people, and that with high burnout was 34 people. Eleven unmarried respondents had moderate burnout, and 18 of them had high burnout. This study showed an insignificant relationship between marital status and burnout. Previous research among nurses in the inpatient installation rooms also showed no significant association between marital status and burnout (Mawarti, 2018).

Regarding patient rooms, 30 respondents in ICU and 53 respondents in non-ICU experienced low burnout. Seventeen respondents in ICU had low burnout, 19 of them had moderate burnout,

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and 17 of them experienced high burnout. The number of respondents in non-ICU rooms with low burnout was 24 people, that with moderate burnout was 12 people, and that with high burnout was 35 people. It indicates a relationship found between work location and burnout (p = 0.03). Results reveal that nurses in non-ICU experienced more burnout than those in ICU possibly due to increased workload during the second wave of the pandemic. These findings contradict previous research that found nurses in the ICUs were more emotionally exhausted. Concerns about possible infection or transmission to family and relatives seem to cause stress (Abdelhafiz *et al.*, 2020). The relationship among the variables are presented in Table 2.

Burnout level in nurses in charge in isolation rooms

The survey results describe the burnout categories in nurses assigned to isolation rooms for COVID-19.

Table 3. Burnout levels of nurses in charge of COVID-19 isolation rooms

	Frequency	Percentage
Low	41	33.1
Medium	31	25.0
High	52	41.9

**Source: Primary data 2021*

Table 3 shows the burnout incidence among nurses in charge of COVID-19 isolation rooms (ICU and non-ICU). Most of them experienced high burnout (41.9%). Stress in adults may include learning problems, conflicts, marital problems, work-related problems, financial problems, and others. Burnout found in health workers usually leads to conflicts related to friends, family, and partners. Work-related problems correlate with job stress or problems that arise between coworkers or superiors (Kepmenkes RI no 1529/MENKES/SK/X/2010, 2010).

Etiology of burnout in nurses in isolation rooms

The isolation rooms at the hospital studies were divided into five rooms, namely EF isolation room, GH isolation room, I isolation room, ICU room without a ventilator (room J), and ICU room with a ventilator. Each room had morning, afternoon, and evening shifts. The morning and evening shifts lasted for six hours, while the night shift required 12 hours of work. The EF isolation room had eight nurses; GH isolation room had 21 nurses; I isolation room had 16 nurses; the ICU without a ventilator (room J) had 32 nurses (room I and J with one head of the room); and the ICU with a ventilator had 45 nurses. B isolation room (ICU with a ventilator) with four beds had 10 nurses in each shift. J isolation room (non-ICU) with eight beds had eight nurses in each shift. I isolation room with 18 beds had four nurses in charge in each shift. The GH isolation room had 34 beds and five nurses per shift. The EF isolation room with 12 beds had three-four nurses per shift. On average, five new patients were admitted to one of the rooms per day.

The GH isolation room which had the highest bed capacity compared to other rooms was prioritized for patients suspected with COVID-19. The interview results showed nurse fatigue likely caused work accidents to the patients and nurses themselves. Over workloads and non-standard work shifts, especially for night shifts, likely cause work fatigue in nurses (Lutfbis and Tasminih, 2018). Burnout symptoms in nurses can be reduced by providing a comfortable work environment. The role of head nurse seems important in managing the workforce functions including planning, scheduling and staff allocation to prevent and reduce burnout symptoms (Putra *et al.*, 2021).

Burnout found in nurses assigned to the isolation rooms occurred due to some reasons. First, the hospital had insufficient number of nurses during the second wave around the middle of 2021. All decisions regarding staff recruitment are regulated by the rectorate of the university since the hospital is a teaching hospital. Second,

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delay in service and incentive payment and inequality of the payment are among others. The respondents said that incentives would be provided after one-year work. The nominal amount was not satisfying and paid late. Availability of incentives is assumed to correlate with quality of service given (Gadzali and Suryani, 2021).

Third, increased workload, risk of infection, use of PPE, and thorough hospital environment caused the nurses to be anxious. Such conditions require a head nurse' role that could give a direct positive effect on nurses' accomplishments. Leaders who show care to their employees may also impact the way they see their workload, community, justice, rewards, and values. The mediation of rewards, control's the problem, and fair workload likely promote less emotional wariness and depersonalization (Putra *et al.*, 2021). Otherwise, nurses working in COVID-19 rooms are affected psychologically (Zerbini *et al.*, 2020).

Fourth, most of the respondents lived in Denpasar area and outside South Badung. On average, they needed approximately 45 minutes to reach workplaces. In addition, finding nurses with advanced nursing qualifications was difficult. The human resource department had to pay the qualified nurses using funds allocated by the hospital. Qualified nurses have more experience, more education and training and thus deserve the fair payment (Hartawan and Ilyas, 2016). Another reason is a poor information system. Medical records of patients were still recorded manually since this hospital had not implemented a hospital management information system (SIMRS). The system allows all service processes to connect with coordination, reporting, and administrative operations to gather information quickly, precisely, and reliably. In the digital era 4.0, SIMRS is a very important facility to support the operational management of hospitals. It makes the services faster and reduces workloads and human errors (Wahyuni and Parasetorini, 2019).

Table 2. The relationship between nurse burnout and sociodemographic characteristics

Demographic characteristics	Burnout					
	Low		Medium		High	
	n	%	n	%	n	%
Sex						
Male	19	33	13	23	25	44
Female	22	33	18	27	27	40
Age						
21-30 years old	37	36	26	25	40	39
31-40 years old	4	19	5	24	12	57
Education						
Associate Degree III	7	24	6	21	16	55
Associate Degree IV	2	67	0	0	1	33
Bachelor	0	0	0	0	1	100
Nursing certification	32	35	25	28	34	37
Marital status						
Single	11	28	11	28	18	45
Married	30	36	20	24	34	41
Location						
ICU	17	32	19	36	17	32
Non-ICU	24	34	12	17	35	49

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Burnout symptoms in nurses in charge of COVID-19 isolation rooms

Burnout symptoms consist of emotional exhaustion, depersonalization, and low personal accomplishment. Figure 1 presents the results of burnout symptoms in this study.

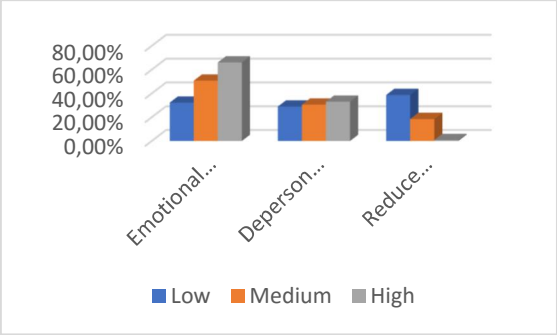

Figure 1. Burnout dimensions in nurses in charge of COVID-19 isolation rooms

Most of the nurses had high burnout. Most of them experienced high emotional exhaustion (66.1%), and some had high depersonalization dimension (33.1%) and highly insignificant personal achievement (0.8%). The nurses were at high risk of exposure to COVID-19, thereby leading to tiredness and fatigue.

Intervention for nurses with mental health issues

Burnout may happen likely due to tiredness and job dissatisfaction. Nurse burnout should be a priority in any policy to enhance the quality of healthcare services. Burnout could affect the hospital environment, which interferes with work productivity and healthcare services to patients besides personal life and turn over which decreases the number of qualified nurses (Ezenwaji *et al.*, 2019).

There are several things to reduce burnout symptoms and maintain the mental health of nurses. First, the hospital needs to conduct regular mental health screening for nurses who are at risk of developing depression, anxiety, insomnia, and discomfort; such an intervention is immediately required for nurses during this pandemic (Lai *et al.*, 2020). Otherwise, they will develop psychological pressure and mental illness at work. Stakeholders and management should support, motivate, and protect nurses by providing training and interventions in education (Vizheh *et al.*, 2020). In addition to regular mental health screening, regular COVID-19 testing is required to reduce burnout in nurses.

Second, psychological counseling should be provided to turn down the fear of being infected with COVID-19. The head nurse should talk to them at least 30 minutes before their duty day. Nurses suffering from anxiety or insomnia are encouraged to seek treatment for stress or depression from the expert available within 24 hours a day. (Huang *et al.*, 2020).

Third, mind-body training and progressive muscle relaxation are required interventions to reduce burnout in nurses. Mind and body therapy focuses on the relaxation of mind, structures, and body organs and systems such as bones, joints, soft bones, blood circulation, and the lymphatic system. This therapy may include breathing exercises, yoga, meditation, body exercises, progressive muscle relaxation, and music therapy. The mind-body training (MBT) program is designed to engage nurses in emotional intelligence and physical resilience that tend to produce positive responses to brain structure and function. Mind body training and progressive muscle relaxation (MBT and PMR) could significantly reduce burnout symptoms, especially emotional exhaustion and depersonalization, in nurses while improving self-achievement (Rahmayanti *et al.*, 2021).

Conclusion

Nurses experienced high burnout since they were assigned to COVID-19 isolation rooms. They mostly suffered from emotional exhaustion. Work location correlated with the incidence of burnout in nurses, but age, gender, education, and marital status had no correlation with

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burnout. Hospital management must consider demographic factors to improve the work environment, recruit new employees, conduct routine health checks, and provide mental health treatments consistently. Some alternatives to reduce burnout symptoms in nurses include mental health screening, psychological counseling, and mindfulness therapy.

Since this study did not explore the issue in the qualitative study, future research should gather bigger populations and focus on personality traits, attitudes toward work, and others that might affect workplace situations and workloads in nurses.

Abbreviations

WHO: World Health Organization; PPNI: *Persatuan Persatuan Perawat Indonesia*; COVID-19: Corona Virus Infection Disease; ICU: Intensive Care Unit; SIMRS: *Sistem Informasi Manajemen Rumah Sakit*; MBI-HSS: Maslach Burnout Inventory – Human Service Survey; PPE: Personal Protective Equipment.

Declaration

Ethics Approval and Consent Participant

Respondents were addressed before the survey about the survey's objectives and purposes, and verbal consent to participate in the study was taken from them.

Conflict of Interest

The authors declare that there is no significant competing financial, professional, or personal interests that might have affected the performance.

Availability of Data and Materials

Data and material research can be provided by request to Correspondence Author.

Authors' Contribution

SJK and IGUH conceptualized the study and created the methodology; SJK and KRP wrote, reviewed, and edited the manuscript; SJK wrote the original draft.

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