Prevalence and Associated Factors of Job Burnout among Healthcare Workers of Mahasarakham Hospital During the COVID-19 Pandemic

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Abstract

This study was a cross-sectional descriptive survey to determine the prevalence and associated factors of job burnout among healthcare workers of Mahasarakham Hospital during the COVID-19 pandemic. 390 healthcare workers were recruited by convenience sampling method, between September and November 2021, data were collected by using an online self-administrative questionnaire and the level of burnout was evaluated based on the Maslach Burnout Inventory (MBI) in Thai version.

The prevalence of job burnout was 3.3%, and most participants had a low level of emotional exhaustion (EE) (56.9%), a low level of depersonalization (DP) (64.4%), and a high level of reduced personal accomplishment (PA) (49.7%). Multiple logistic regression analysis indicated age, income more than 20,000 baht were significant associated factors with OR_{adj}=0.87 (95%CI=0.79-0.95), and 4.95 (95%CI=1.03-23.70) respectively.

Therefore, mental support especially for young person could help improve job burnout.

Keywords: Job burnout; Healthcare worker; COVID-19Board

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Received: December 7, 2021; Revised: June 13, 2022; Accepted: August 25, 2022

ความชุกและปัจจัยที่เกี่ยวข้องกับภาวะหมดไฟในการทำงานของบุคลากรทางการแพทย์ โรงพยาบาลมหาสารคามในช่วงการระบาดของโรคติดเชื้อไวรัสโคโรนา 2019 (COVID-19)

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บทคัดย่อ

การศึกษานี้เป็นการศึกษาแบบภาคตัดขวางเพื่อหาความชุกและปัจจัยที่เกี่ยวข้องกับภาวะหมดไฟในการทำงานของบุคลากรทางการแพทย์โรงพยาบาลมหาสารคามในช่วงการระบาดของโรคติดเชื้อไวรัสโคโรนา 2019 (COVID-19) ประชากรที่ใช้ในการศึกษามีจำนวน 390 คนโดยสุ่มตามความสะดวก เก็บข้อมูลระหว่างเดือน กันยายน ถึง พฤศจิกายน พ.ศ.2564 ใช้แบบสอบถามแบบตอบเองแบบออนไลน์และวัดภาวะหมดไฟด้วย Malasch Burnout Inventory ฉบับภาษาไทย

พบความชุกของภาวะหมดไฟในการทำงานร้อยละ 3.3 เมื่อพิจารณาภาวะหมดไฟในแต่ละมิติพบส่วนใหญ่มีความอ่อนล้าทางอารมณ์ (emotional Exhaustion) ในระดับต่ำร้อยละ 56.9 การลดความเป็นบุคคล (depersonalization) ในระดับต่ำร้อยละ 77.2 และการลดความสำเร็จระดับบุคคล (personal accomplishment) ในระดับสูงร้อยละ 49.7 เมื่อวิเคราะห์ด้วยสถิติถดถอยพหุกลุ่มพบอายุและรายได้ที่มากกว่า 20,000 บาทต่อเดือน เป็นปัจจัยที่เกี่ยวข้องอย่างมีนัยสำคัญกับภาวะหมดไฟในการทำงาน โดยมี OR_{adj} = 0.87 (95%CI= 0.79-0.95),และ 4.95 (95%CI= 1.03-23.70) ตามลำดับ

ดังนั้นการสนับสนุนทางด้านจิตใจโดยเฉพาะกลุ่มที่มีอายุน้อย จะช่วยลดภาวะหมดไฟในการทำงานได้

คำสำคัญ : ภาวะเหนื่อยหน่ายจากการทำงาน; บุคลากรทางการแพทย์; โรคติดเชื้อไวรัสโคโรนา 2019

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Background

Coronavirus disease 2019 (COVID-19) was first diagnosed in Wuhan, China, it's infected by severe acute respiratory syndrome coronavirus-2 (SAR-CoV-2). SAR-CoV-2 has spread rapidly across the globe and World Health Organization declared the COVID-19 outbreak as a pandemic on March 21, 2020.[1] There have been more than 200 million cases of COVID-19 and 2 million death reported worldwide as of August 18, 2021. [2] In Thailand, the Department of disease control, Ministry of Public Health reported 776, 108 COVID-19 cases and 6,353 death. [3] The rapidness and aggressiveness of COVID-19 in infecting people made it a serious and threatening health issue, so healthcare worker was inevitable to suffer from an enormous burden which lead to mental health problems and develop to job burnout. [4]

World Health Organization classified job burnout as an occupational phenomenon resulting from chronic workplace stress that has not been successfully managed, presented in three dimensions (1) emotional exhaustion (EE): feelings of energy depletion or exhaustion, (2) depersonalization (DP): increased mental distance from one's job, or feelings of negativism or cynicism related to one's job (3) personal accomplishment (PA): a reduction of the feeling of competency and efficiency at work, a feeling that one is unable to assist or service the clients. [5] Mental symptoms were gradually developed and presented as no motivation, helplessness, negative feeling with co-workers, and failure of work, whereas physical symptoms included aches and pains, trouble sleeping, headaches, dizziness, stomach or digestive problems, fatigue, and exhaustion. Behavioral symptoms presented as no responsibility, alcohol drinking to deal with job unsatisfactory, social isolation, and task avoidance. [6]

Mahasarakham province is located in the Northeast of Thailand, approximately500 kilometers from Bangkok. Mahasarakham provincial public health office reported COVID-19 7,446 cases[7] and Mahasarakham hospital was the main healthcare setting to provide public health facilities, treat COVID-19 patients from unaffordable district hospitals, manage field hospital and community isolation, these huge augmentative burdens could risk the healthcare worker to burnout. Therefore, this study aimed to assess the prevalence of job burnout in healthcare

workers and associated factors in the COVID-19 pandemic to be the baseline data to propose the policy in a hospital for preventing job burnout.

Method

This cross-sectional descriptive study was conducted in Mahasarakham hospital, between Septembers 2021 and November 2021. A total of 390 healthcare workers were participated by convenience sampling with inclusion criteria: 1. Worked in Mahasarakham hospital for more than 6 months and exclusion criteria: 1. Being ill and admitted to hospital, 2. Healthcare worker on vacation more than 1 week 3. Pregnancy. The minimum sample size was calculated to be 384 by applying Cochran formula assuming an acceptable level of precision at 5%, based on a 95% confidence interval, and the prevalence of job burnout in a previous study was 51.8%.[8] All participants provided informed consent to participate. The survey was anonymous, and confidentiality of information was assured. Once started to fill in the survey, subjects could quit it at any time without any consequence.

The data was obtained by using a self-administrative online questionnaire hosted on the survey platform "Google Form", which provided electronic self-access and prevent multiple answers from the same person. A self-administrative online consisted of 4 parts as follows

1. Demographic data
2. Work factors
3. COVID-19 factors
4. Maslach Burnout Inventory–Human Services Survey (MBI-HSS) Thai version, which is widely used and reliable. [9]A MBI-HSS included 22 items refer to 3 dimensions 1. emotional exhaustion (EE) 2. depersonalization (DP) 3. personal accomplishment(PA), each item contain 7 points rating scale ranging from "never = 0" to "everyday = 6", an emotional exhaustion score included*negative* nine items with a score range of 0–54 (a score of ≤ 18 was indicated low burnout, 19–26 indicated moderate burnout, and ≥ 27 indicated high burnout). *Negative* five items measured depersonalization with a score range of 0–30 points (≤ 5 considered low burnout, 6-9 reflected moderate burnout, and ≥ 10 reflected high burnout). The personal accomplishment evaluation included *positive* eight items with a score range of 0–48 points (≥ 40 classified as low burnout, 34-39 classified as moderate burnout, and ≤ 33 classified as high burnout). Persons

with high scores in EE and DP combined with low scores in PA were defined as having job burnout.

Statistical Analysis

SPSS version 22 was used for data analysis. Continuous variables were described as mean and standard deviation if the data were normally distributed; otherwise, they were presented by the median and interquartile range [IQR]. Categorical variables are expressed as frequency (percentages). Simple logistic regression was used to determine the association between independent factors, including demographic characteristics, work factors, and COVID-19 factors, and job burnout presented as a crude odd ratio. To create a multivariate logistic regression model, a forward stepwise procedure was used by adding the variables with a p-value < 0.25 in the model. The entry variable was considered by p-value <0.05 and the removal variable by p-value >0.1 and presented each adjusted odds ratio. A p-value < 0.05 was considered to be statistically significant.

Ethical Consideration

This study was approved by the Ethical Committee of Mahasarakham Hospital No. MSKH_REC 64-01-037.

Result

Total 390 valid questionnaires were collected. Participants tended to be female(86.2%) with a mean age of 37.2±9.9 years, no underlying disease (77.7%), had bachelor's degrees (76.9%). The majority were nurses (73.3%) and had a healthy relationship with a boss (93.6%) and colleague (95.6%), as shown in **Table 1.**

Table 1 Demographics data and work characteristics (n=390)

Personnel Variables	n (%)
Gender	
Male	54 (13.8%)
Female	336 (86.2%)
AGE (mean±S.D.)	37.2±9.9
BMI (mean±S.D.)	23.2±4.3
Underlying disease	
No	303 (77.7%)
Yes	87 (22.3%)
Education	
Under Bachelor	62 (15.9%)
Bachelor	300 (76.9%)
Higher Bachelor	28 (7.2%)
Professions	
Doctor	4 (1%)
Nurse	286 (73.3%)
Nursing Aid	36 (9.2%)
Practical Nurse	22 (5.6%)
Others	42 (10.7%)
Work experience (median[IQR])	10 [4,20]
Shift work per month (median[IQR])	23 [10,30]
Income per month (Baht)	
Less than 10,000	28 (7.2%)
10,000 – 19,999	100 (25.6%)
20,000 - 49,999	209 (53.6%)
50,000 – 99,999	48 (12.3%)
More than 100,000	5 (1.3%)
Smoking	
No	387 (99.2%)
Yes	3 (0.8%)
Regular Exercise (3-5 days/week)	
No	321 (82.3%)
Yes	69 (17.7)

Table 1 Demographics data and work characteristics (n=390)

Personnel Variables	n (%)
Adequate rest	
No	189 (48.5%)
Yes	201 (51.5%)
Family Burden	
No	37 (9.5%)
Yes	353 (90.5%)
Work characteristics	
Work environment	
Appropriate	241 (61.8%)
Inappropriate	149 (38.2%)
Relationship between chief	
Not healthy	25 (6.4%)
Healthy	365 (93.6%)
Relationship between colleague	
Not healthy	17 (4.4%)
Healthy	373 (95.6%)
Reasonable compensation	
No	279 (71.5%)
Yes	111 (28.5%)
Reasonable workload	
No	207 (53.1%)
Yes	183 (46.9%)

Of all participants, 212 (54.4%) wore full PPE while working, 281 (72.1%) used to be quarantined and 112 (28.7%) had been swabbed for the COVID-19 test, as shown in **Table 2.**

Table 2 COVID-19 associated characteristics (n=390)

Variables	n (%)
Available of personnel protective equipment (PPE)	
Not Adequate	122 (31.3%)
Adequate	268 (68.7%)
Wearing Full PPE while working	
No	178 (45.6%)
Yes	212 (54.4%)
Experienced quarantine	
No	281 (72.1%)
Yes	109 (27.9%)
Experienced being swab for COVID-19 test	
No	278 (71.3%)
Yes	112 (28.7%)
Family's members infected COVID-19	
No	16 (4.1%)
Yes	374 (95.9%)
Mental support from hospital	
Not appropriate	270 (69.2%)
Appropriate	120 (30.8%)

Respondents reported prevalence of job burnout (high EE, high DP and low PA) 3.3%and had a low level burnout of emotional exhaustion (EE) 222 (56.9%), low level burnout of depersonalization (DP) 251 (64.4%), and a high level burnout of personal accomplishment (PA) 194 (49.7%). The Median[IQR] of EE score was 14[7,23], DP score was 4[1,8.5] and PA score was 18.5 [25,40], as shown in **Table 3.**

Table 3 Job burnout (n=390)

Dimension of Job burnout	Media n	IQR	Burnout levels, n (%)		
			Low	Middle	High
Emotional exhaustion (EE)	14	7,23	222 (56.9%)	98 (25.1%)	70 (17.9%)
Depersonalization (DP)	4	1,8.25	251 (64.4%)	98 (25.1%)	41 (10.5%)
Personal accomplishment (PA)	34	25, 40	115 (29.5%)	81 (20.8%)	194 (49.7%)
Job burnout* n (%)	13 (3.3%)				

*As defined a person who had combined with high emotional exhaustion, high depersonalization and low personal accomplishment.

According to bivariate analysis, age, work experience, shift work per month, income, adequate relax, work environment, relationship with chief, reasonable compensation, reasonable workload, wearing full PPE while working, experienced quarantine and mental support from hospital shown p-value less than 0.25, so these factors were included in forward stepwise multiple logistic regression. **Table 4**

Table 4 Bivariate analysis of job burnout with personal factors, work factors and COVID-19 factors (n=390)

Personnel Variables	**Job burnout**		**OR (95%CI)**	**p-value**
	Yes, n (%)	No, n (%)		
Gender				
Male	3 (23.1%)	51 (13.5%)	ref	0.33
Female	10 (76.9%)	326 (86.5%)	0.52 (0.13-1.95)	
AGE (mean±S.D.)	29.15±6.10	37.54±9.98	0.89 (0.82-0.96)	0.006*
BMI (mean±S.D.)	23.79±5.38	23.18±4.36	1.03 (0.91-1.15)	0.62
Underlying disease				
No	3 (23.1%)	84 (22.3%)	ref	0.94
Yes	10 (76.9%)	293 (77.7%)	0.95 (0.25-3.55)	
Education				
Under Bachelor	0 (0%)	273 (72.4%)	p-value=0.99	N/A
Bachelor and higher	13 (100%)	104 (27.6%)		
Professions				
Other professions	0 (0%)	104 (27.6%)	p-value=0.99	N/A
Nurse	13 (100%)	273 (72.4%)		

Table 4 Bivariate analysis of job burnout with personal factors, work factors and COVID-19 factors (n=390)

Personnel Variables	Job burnout		OR (95%CI)	p-value
	Yes, n (%)	No, n (%)		
Work experience (Median[IQR])	4 [2,8.5]	10 [4,20]	0.90 (0.81-0.99)	0.03*
Shift work per month (Median[IQR])	35 [18.5,40]	22 [10,30]	1.06 (1.00-1.11)	0.02*
Income per month (Baht)				
Less than 20,000	2 (15.4%)	126 (33.4%)	ref	
More than 20,000	11 (84.6%)	251 (66.6%)	2.76 (0.60-12.64)	0.19
Smoking				
No	13 (100%)	374 (99.2%)	p-value=0.99	N/A
Yes	0 (0%)	3 (0.8%)		
Regular exercise (3-5days/week)				
No	10 (76.9%)	311 (82.5%)	ref	0.60
Yes	3 (23.1%)	66 (17.5%)	1.41 (0.37-5.27)	
Adequate rest				
Yes	2 (15.4%)	199 (52.8%)	ref	0.019*
No	11(84.6%)	178 (47.2%)	6.14 (1.34-28.11)	
Family burden				
No	2 (15.4%)	35 (9.3%)	ref	0.46
Yes	11 (84.6%)	342 (90.7%)	1.05 (0.37-8.33)	
Work related variables				
Work environment				
Appropriate	5 (38.5%)	236 (62.6%)	ref	0.08
Inappropriate	8 (61.5%)	141 (34.4%)	2.67 (0.85-8.34)	
Relationship between chief				
Healthy	11 (84.6%)	354 (93.9%)	ref	0.19
Not healthy	2 (15.4%)	23 (6.1%)	2.79 (0.58-13.37)	
Relationship between colleague				
Healthy	12 (92.3%)	361 (95.8)	ref	0.55
Not healthy	1 (7.7%)	16 (4.2)	1.88 (0.23-15.36)	

Table 4 Bivariate analysis of job burnout with personal factors, work factors and COVID-19 factors (n=390)

Personnel Variables	Job burnout		OR (95%CI)	p-value
	Yes, n (%)	No, n (%)		
Reasonable compensation				
Yes	1 (7.7%)	110 (29.2%)	ref	0.12
No	12 (92.3%)	267 (70.8%)	4.94 (0.63-38.48)	
Reasonable workload				
Yes	3 (23.1%)	180 (47.7%)	ref	0.09
No	10 (76.9%)	197 (52.3%)	3.04 (0.82-11.24)	
COVID-19 associated variables				
Available of personnel protective equipment (PPE)				
Adequate	6 (46.2%)	262 (69.5%)	ref	0.85
Not Adequate	7 (53.8%)	115 (30.5%)	2.65 (0.87-8.08)	
Wearing Full PPE while working				
No	3 (23.1%)	175 (46.4%)	ref	0.11
Yes	10 (76.9%)	202 (53.6%)	2.88 (0.78-10.66)	
Experienced quarantine				
No	7 (53.8%)	102 (27.1%)	ref	0.04*
Yes	6 (46.2%)	275 (72.9%)	0.31 (0.10-0.96)	
Experienced being swab for COVID-19 test				
No	2 (15.4%)	110 (29.2%)	ref	0.29
Yes	11 (84.6%)	267 (70.8%)	0.44 (0.6-2.02)	
Family's members infected COVID-19				
No	13 (100.0%)	361 (95.8%)	p-value=0.99	N/A
Yes	0 (0%)	16 (4.2%)		
Mental support from hospital				
Appropriate	1 (7.7%)	119 (31.6%)	ref	0.10
Not appropriate	12 (92.3%)	258 (68.4%)	5.53 (0.71-43.06)	

*p-value<0.05 significant

Multiple forward stepwise logistic regression analysis revealed age and income more than 20,000 baht were independent factors of job burnout with an adjusted odds ratio 0.87 (95%CI =0.79-0.95),4.95 (95%CI =1.03-23.7) respectively.**Table 5.**

Table 5 Multiple logistic regression analysis of factors of job burnout (n=390)

Factors	Job burnout		OR (95%CI)	OR_{adj}(95%CI)*
	Yes	No		
AGE	29.15±6.10	37.54±9.98	0.89 (0.82-0.96)	0.87 (0.79-0.95)
Income per month (Baht)				
Less than 20,000	2 (15.4%)	126 (33.4%)	ref	ref
More than 20,000	11 (84.6%)	251 (66.6%)	2.76 (0.60-12.64)	4.95 (1.03-23.70)

*Adjusted by age, work experience, shift work per month, income, adequate relax, work environment, relationship with chief, reasonable compensation, reasonable workload, wearing full PPE while working, experienced quarantine and mental support from hospital

Discussion

This cross-sectional study was conducted among healthcare worker in Mahasarakham hospital after the peak of the 2nd wave of COVID-19 pandemic in Thailand, majority of participants were nurse (73.3%) and female (86.2%) similar to study in Taiwan[10], indicating that professional nurse was a main human resource in hospital. Almost respondents had healthy relationships between chief (93.6%) and colleague (95.6%), this may result from the 1st wave of COVID-19 pandemic hospital staff were united and support each other in a hard time and they got resilience.[11] Approximately one-third of participants experienced being quarantined and swabbed because Mahasarakham hospital had a surveillance policy for high-risk contact of COVID-19 for healthcare workers to be quarantined, but in the present-day full vaccinated healthcare worker didn't need to quarantine any more.

The study showed a low prevalence of job burnout (3.3%) compare to other[8], because of different criteria to diagnose burnout; otherwise comparing with the other study[12] in the normal situation we found that most participants had the same prevalence in 3 dimensions of job burnout, low burnout level of

emotional exhaustion, low burnout level of depersonalization, and high burnout level ofpersonal accomplishment, because in normal situation health care worker in government hospital always work strenuously, so they don't feel exhausted, and depersonalized, but feel high burnout levelof personal accomplishment, because in government hospital it's hard to grow up in career path. And the personal accomplishment was a subdimension of burnout, it's not the reaction to the stressful situation such as COVID-19 pandemic, so health care worker feel low in personal accomplishment either normal situation or COVID-19 pandemic, but the personality and self-efficacy can be the key approach to overcome personal accomplishment. [13] The recent study[14], which study in Generation-Y nurse showed personal accomplishment different from our study because participants in our study were tended to be generation-X. Generation Y had a different attitude from a past generation, they have more ambition to succeed, more individualism, and want more challenge[15], with these specific characteristics may drive self-efficacy leading to higher personal accomplishment than generation-X.

The youngerage was significantly related to job burnout, our finding was in the line with Matsuo T.et al[16]which studied in Japan during COVID-19 pandemics; furthermore, in normal situations, the younger age also had higher job burnout more than older people.[17] Because younger people had less experience to deal with the problem in their life, and younger people is more volatile in their profession.

One of the limitations of this study was that data was collected after a peak of 2nd waves of the outbreak in Thailand, this may decrease the real prevalence of job burnout; nevertheless, even if after the peak of 2nd wave but the number of patients was still much higher than the peak of 1st wave of outbreak. Another limitation was this study was an observational study that can't determine a causal relationship.

Conclusion

This study showed a low prevalence of job burnout among healthcare workers in Mahasarakham hospital, but the personal accomplishment was the problem dimension of job burnout. Stakeholders should run employee assistance programs especially for the

younger person and adjust the working policy to have more rest time. While further research should focus on the nurse profession to determine the specific factor to improve their mental health.

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