

## ORIGINAL ARTICLE

# Burnout among Healthcare Workers During COVID-19 Pandemic in Lahad Datu District

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## ABSTRACT

**Introduction:** Burnout syndrome is a state of physical and emotional exhaustion most often associated with negative effects on quality of life and work. The objective of this study is to determine the prevalence of burnout among healthcare workers (HCWs) working in Lahad Datu during COVID-19 pandemic. **Methods:** This cross-sectional study analysed primary data obtained from the HCWs working under Pejabat Kesihatan Kawasan Lahad Datu (PKKLD), Sabah from early of April 2021 to the end of May 2021. Copenhagen Burnout Inventory (CBI) was used to determine the status of burnout among healthcare workers working under PKKLD. The Pearson Chi-square test was used to analyse the association between burnout and socio-demographic, organizational, and socio-environment factors. **Results:** Out of 352 healthcare workers, 121 (34.4%) had a burnout during this pandemic. The prevalence of personal-related and work-related burnout were 46.3% and 42.3% respectively, while the prevalence of client-related burnout was 35.8%. Living arrangement, daily working hours, job categories, job satisfaction, and exposure to COVID-19 patients were the significant associated factors of burnout among the HCWs ( $p < 0.05$ ). **Conclusion:** The prevalence of burnout among HCWs working under PKKLD during this pandemic was relatively high especially among health inspectors and medical officers. This study provided early insight and suggestions for prospective actions, hence it may require multilevel intervention from administration, organizational, and responsible authority as the pandemic's progression is yet unknown.

**Keywords:** Burnout; Pandemic; COVID-19; Healthcare workers

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## INTRODUCTION

In December 2019, the world was shaken by the presence of Coronavirus (nCoV) that caused respiratory tract infections in Wuhan, Hubei province China which was later named COVID-19 (1). It is estimated that COVID-19 has infected a number of 1.9 billion people and caused the death of as many as 4.2 million (2). Malaysia is also not left behind by this virus, starting from March 2020 until February 2021, as many as 1.15 million people have been infected and as many as 9,500 people have fallen due to this pandemic in this country (2). Healthcare workers (HCWs) are one of the most affected groups by this pandemic, as HCWs are integral part of our healthcare delivery, they are the soul of health system in Malaysia. Prior to the pandemic, working as a HCWs was definitely burdened by long hours and a stressful environment, particularly in Malaysia (3).

In the current working environment, burnout syndrome is a major issue. Globally, it has been found that burnout prevalence has risen dramatically and affects 19% to 30% of workers in the general working community (4). Several studies have shown that healthcare workers are at the highest risk of burnout (5, 6). In Asia, according to the survey done, burnout was reported experienced by HCWs between a quarter to half. In US, the prevalence of burnout rates among HCWs are up to 54% and it is also widely reported among UK doctors (7).

Burnout has serious negative implications towards physicians, the health care system, and for patient outcomes. While there are significant differences by specialty, the highest rates of burnout are recorded by physicians in the front line of care. Physician burnout has been associated with lower job satisfaction, ruined personal relationships, drug addiction, depression, and suicide (8). Burnout is also associated with decreased productivity, high work turnover, and early retirement within health care organizations. Importantly, burnout can lead to an increase in medical errors, decreased patient care quality, and decreased

patient satisfaction. It is not surprising, therefore, that physicians' well-being is increasingly proposed as a quality measure in the delivery of health care (8).

With the situation of the world facing the COVID-19 pandemic, other than to find out the prevalence of burnout, it is necessary to know the contributing factors that cause the burnout among healthcare workers. At the same time, not many studies have been done to find out burnout among this groups. Therefore, this study was made in the hope of helping to some extent in addressing this problem, as there is a need to determine prevalence of burnout and its associated factors in order to make a strategic plan to reduce the burden. Among the main purpose of this study is to find out the prevalence of burnout among healthcare workers in Pejabat Kesihatan Kawasan Lahad Datu (PKKLD) as well as the factors that influence it. On the other hand, based on this study we hope to find among the frontliner, which healthcare workers are the most affected by this pandemic, either from the group of medical officers, nurses, assistant medical officers, or health inspectors. Hence, we can find a proper way of approach in tackling this issue with the most appropriate intervention.

## MATERIALS AND METHODS

The study design was a cross-sectional study in which to determine prevalence and associated risk factor of burnout among HCWs working in Pejabat Kesihatan Kawasan Lahad Datu and all health clinics under it. Study population included all of the staffs working under Pejabat Kesihatan Kawasan Lahad Datu facilities including Klinik Kesihatan and Klinik Desa which were about 417 staffs that consisted of medical officer, pharmacist and assistant pharmacist, health inspector, nurse, medical assistant, and medical lab technician. Sampling procedure for the study was universal sampling as to get as many as possible HCWs to participate in this study. The HCWs were grouped according to job categories and were asked for consent before responding to questionnaires. Willing to participate and able to read and understand Malay or English language were the two inclusion criteria in this study while non-frontliner such as administrative staff, clerk, operator, or cleaner and any HCWs who have underlying mental illness were excluded in the study.

Assessment of burnout among healthcare workers were conducted using Copenhagen Burnout Inventory (CBI) questionnaire which involved assessment of three scope/ domain of burnout: personal-related burnout, work-related burnout and client-related burnout. For the Malay version of CBI (CBI-M), the face validity index was more than 0.8. The three factors of CBI-M achieved good levels of goodness-of-fit indices. The composite reliability values of the three factors

ranged from 0.84 to 0.87. The Cronbach's alpha values of the three factors ranged from 0.83 to 0.87 (9). The results from the CBI were interpreted according to the average of score from the item tested for each scope of burnout. If the average score was equal of 2 or more, the HCWs will be considered to have burnout. By using bivariate analysis, data were categorized into "Yes" (2 or more) burnout and "No" (below 2) burnout. The questionnaire consisted of two parts. First part consisted of questions for socio-demographic, organizational, and socio-environment factors and second part used Copenhagen Burnout Inventory (CBI) questionnaire to assess burnout status and its domain. All data collection were using Google Form in view of pandemic and movement control order (MCO).

Initial data was analysed using Microsoft excel. Statistical analysis done using IBM Statistical Packages for Social Sciences (SPSS) version 26.0 (IBM Corp., Armonk, NY, USA). The level of statistical significance was set at a p-value of < 0.05 with 95% of confidence interval (CI). Continuous variables were summarized using the mean and standard deviation (SD) and the majority of categorical data were presented as the number (n) and percentage (%). The Pearson Chi-squared test was performed to determine the association between socio-demographic, organizational, and socio-environment factors with burnout.

## Ethical Clearance

This study was approved by Medical Research Ethics Committee, Faculty of Medicine and Health Science University Malaysia Sabah with approval code JKEtika 1/21 (9) and Medical Research and Ethics Committee of Ministry of Health No. NMRR-20-3117-57871 (IIR).

## RESULTS

A total of 417 HCWs agreed to participate in the study, of that number, only 352 respondents completed the questionnaire given. Table I displays socio-demographic, organizational, and socio-environment factors of the respondents of this study. Table II shows the prevalence of burnout among healthcare workers working in Lahad Datu district. The mean for personal-related burnout, work-related burnout, and client-related burnout were 0.46 (SD=0.499), 0.42 (SD=0.495), and 0.36 (SD=0.480) respectively. Among the respondents, 34.4% (121) had a burnout status during this pandemic. Personal-related burnout, work-related burnout, and client-related burnout were highest among health inspectors followed by medical officer as shown in Table III.

The bivariate analysis in Table IV showed significant associations ( $p < 0.05$ ) between burnout status and certain associated factors which consisted of socio-demographic, organizational, and socioenvironmental

**Table I : Sociodemographic, organizational, and socioenvironmental factors of healthcare workers enrolled in the study (n=352)**

Characteristics	Frequency (n)	Percentages (%)	Mean (SD)
<b>Age (years)</b>			<b>34.14 (8.329)</b>
20 – 29	119	33.8	
30 – 39	143	40.6	
40 – 49	72	20.5	
50 – 59	18	5.1	
<b>Gender</b>			
Male	120	34.1	
Female	232	65.9	
<b>Marital Status</b>			
Married	216	61.4	
Single	136	38.6	
<b>Living Arrangement</b>			
Live with family	29	8.2	
Live with spouse	156	44.3	
Live with friends	132	37.5	
Live alone	35	9.9	
<b>Job category</b>			
Medical lab technician	17	4.8	
Nurse	169	48	
Pharmacist and assistant pharmacist	24	6.8	
Medical Officer	46	13.1	
Environmental Health Officer and Health Inspector	42	11.9	
Medical assistant	54	15.3	
<b>Employment status</b>			
Contract	77	21.9	
Permanent	275	78.1	
<b>Daily working hours</b>			
8 hours or below	137	38.9	
More than 8 hours	215	61.1	
<b>Years of services</b>			
5 years or below	89	25.3	
More than 5 years	263	74.7	
<b>Job satisfaction</b>			
Low	10	2.8	
Moderate	231	65.6	
High	111	31.5	
<b>Exposure to COVID-19 Patient</b>			
Yes	319	90.6	
No	33	9.4	

<b>Provision with Adequate PPE</b>		
Yes	348	98.9
No	4	1.1
<b>Work Impacting Household Activities</b>		
Yes	87	24.7
No	265	75.3

**Table II : Prevalence of burnout and its domain (n=352)**

<b>Domain of Burnout</b>	<b>Prevalence n (%)</b>
Personal-related Burnout	163 (46.3)
Work-related Burnout	149 (42.3)
Client-related Burnout	126 (35.8)
Burnout status (Total)	121 (34.4)

**Table III : Prevalence of burnout based on job categories (n=352)**

<b>Job Categories</b>	<b>Personal-related n (%)</b>	<b>Work-related n (%)</b>	<b>Client-related n (%)</b>	<b>Total Burnout n (%)</b>
Medical lab technician	9 (53.0)	9 (53.0)	8 (47.1)	6 (35.3)
Nurse	74 (43.8)	65 (38.5)	53 (31.4)	54 (32.0)
Pharmacist and assistant pharmacist	5 (20.8)	9 (37.5)	6 (25.0)	5 (20.8)
Medical Officer	30 (65.2)	26 (56.5)	24 (52.2)	25 (54.3)
Environmental Health Officer and Health Inspector	29 (69.0)	30 (71.4)	29 (69.0)	25 (59.5)
Medical assistant	16 (29.6)	10 (18.5)	6 (11.1)	6 (11.1)

factors that comprised of 12 variables. From these 12 variables, 5 variables were shown significant association that includes living arrangement, job category, daily working hours, job satisfaction, exposure to COVID-19 patients during managing COVID-19 pandemic. However, during this pandemic, no significant association were found between burnout and age, gender, marital and employment status, years of services, adequacy of PPE, and work impacting household activities.

## DISCUSSION

The prevalence of burnout among healthcare workers under Pejabat Kesihatan Kawasan Lahad Datu Sabah is 34.4%. This finding was found to be lower in number than prevalence in one of study done during COVID-19 pandemic in 33 countries as half (51%) of the HCWs reported to have burnout (10). The lower rate of burnout of HCWs working under PKKLD compared to the prevalence reported in the studied done by Morgantini et al. could be due to the variability of risk factors involved such as the workload, the country's healthcare system, and the

assessment tool being used (10). It is however not as lower as two other studies which has been done during pre-pandemic time (3, 11). These studies found that the prevalence of burnout among physician and nurses are 26.5% and 24% respectively.

The difference in prevalence rate found in both of this study also shown that different population of the study have their own features that cannot be easily generalized into HCWs in PKKLD population as the finding of this research suggested that burnout was highest among environmental health officer/health inspector (59.5%) followed by medical officer (54.3%). The significant rise of burnout prevalence (34.4%) found in this study could be caused by the pandemic itself. Nevertheless, this finding called for further and deeper study to be done in order to establish root cause analysis of this issue at hand.

Living arrangement is one of the factors that is included in the research. It is found to be significantly associated with burnout ( $p < 0.015$ ) among HCWs in this study. Based on the factor, those HCWs who live with family (44.8%) are the highest group

**Table IV : The Association between burnout and socio-demographic, organizational, and socio-environment factors (n=352)**

Characteristics	Burnout Status		X <sup>2</sup>	p-value
	Yes	No		
<b>Living Arrangement</b>				
Live with family	13 (44.8%)	16 (55.2%)	10.516	<0.05
Live with spouse	45 (28.8%)	111 (71.2%)		
Live with friends	56 (42.4%)	76 (57.6%)		
Live alone	7 (20%)	28 (80%)		
<b>Job category</b>				
Medical lab technician	6 (35.3%)	11 (64.7%)	35.262	<0.05
Nurse	54 (32%)	115 (68%)		
Pharmacist and assistant pharmacist	5 (20.8%)	19 (79.2%)		
Medical Officer	25 (54.3%)	21 (45.7%)		
Environmental Health Officer and Health Inspector	25 (59.5%)	17 (40.5%)		
Medical assistant	6 (11.1%)	48 (88.8%)		
<b>Daily working hours</b>				
8 hours or below	35 (25.5%)	102 (74.5%)	7.748	<0.05
More than 8 hours	86 (40%)	129 (60%)		
<b>Job satisfaction</b>				
Low	4 (40%)	6 (60%)	19.245	<0.05
Moderate	97 (42%)	134 (58%)		
High	20 (18%)	91 (82%)		
<b>Exposure to COVID-19 Patient</b>				
Yes	203 (63.6%)	116 (36.4%)	5.965	<0.05
No	5 (15.2%)	28 (84.8%)		

experiencing burnout during this pandemic. This finding correlate and similar to the finding in a study done by Wang et al. among Chinese female nurses (12). The similarity found in the study is likely due to certain similar characteristic of organizational factor as work and family conflict are positively related to emotional exhaustion and cynicism which lead to burnout. It is however differed in some other study which found there are positive relation of social support which involves support from the social networks of the individual, such as partners, friends, co-workers, and families that can moderate the burnout and greatly reduce the negative impact of stressful environments (13, 14). These differences however are largely contributed by the differences of demographic in the study done by Zhang et al. compared to our study (14). In line with the J-DR model, emotional exhaustion mediated the relationship between work-family conflict and anxiety symptoms. When an individual experiences work

overload for long periods of time, they find that they cannot fulfil their familial responsibilities. In the long term, this may drain their personal resources, including emotional and mental energy, which may result in burnout (15).

For job category, it is one of the commonly studied in the research related to burnout. This study found that job category is significantly associated with burnout ( $p < 0.01$ ). This study is similar to the finding by Herbert Freudenberger who the first to noticed of burnout among healthcare professionals. In our study found that environmental health officer/health inspector (59.5%) is the highest experiencing burnout among other job categories. The result of this finding is expected, as the finding is similar to the study done by Roslan et al. in which health inspectors were the highest among healthcare workers who experienced work-related burnout during COVID-19 pandemic (16). This similarity of the finding is due to health inspectors

heavily involvement during this pandemic. Many may not be aware of the existence of a group of civil servants known as Environmental Health Officers (PKP) and also Assistant Environmental Health Officers (PPKP) or known as health inspectors. They were frontliners and among the earliest individuals fully responsible for breaking the chain of transmission of the COVID-19 pandemic in communities. In general, this profession plays a role in the field of environmental health and its main tasks are in the prevention of environmental health risks, the promotion and protection of public and environmental health in the areas of disease control, food hygiene and safety, housing and environmental health, vector control, drinking water quality, water sanitation, emergency preparedness and public health laws enforcement (17).

Health inspectors are working in every State Health Department, District Health Office, National and International Gateway, health clinic, and hospital. During pandemic, beside went out to field, some of them even were assigned of working in isolation wards for contact tracing. They are our fallen hero. Our environmental health officers/ health inspectors have been on duty in dealing with COVID-19 outbreak cases since early January of 2020 even before WHO declared the COVID-19 as pandemic. In terms of workload, they are really affected especially in areas with high cases where they have to investigate hundreds of cases per day with a limited number of staff, which is the case in Lahad Datu district. Besides, they also need to control of other pre-existing diseases such as Dengue, Measles, HFMD, Tuberculosis, and Polio which also need attention where an increase in cases were occurring in some areas.

Daily working hours is significantly associated with developing burnout. This study found that those who are working of more than 8 hours were having a higher percentage (40%) of getting burnout. While 74.5% of HCWs working 8 hours and below were not having burnout. In a study done by Kijima et al., working hours were significantly correlated with burnout as human stress of coping capacity and working hours are found to be associated with it (18). It was also suggested on a case-control study by Hu et al. that revealed long working hours contributed to the risk of middle-aged male to develop a cardiovascular disease in Taiwan, especially among those working of more than 60 hours per week (19). For those working 61 hours or more per week were found to have a 2-fold higher risk of nonfatal myocardial infarction in a Japanese case-control study compared to the staff who worked less than 40 hours per week (20). In addition, cardiovascular disease, mental illness was also found to be significantly correlated with long working hours (20).

The COVID-19 crisis saw a huge responsibility and

role borne by frontliner as there are those who risk their lives to save others. Too much workload, lack of rest and no social activities will cause the physical to become tired and lethargic. This becomes worse when a person does not get enough care as well as lacks support from colleagues, employers, family or even of economically (21). At the same time, due to the pandemic, many of them have to work overtime, leave children and families behind to squeeze sweat and energy. Healthcare workers who underwent long working hours will experience a decline in terms of productivity. Energy and manpower will be weakened if used excessively. When the eyes experience fatigue due to insufficient sleep and rest, concentration will be disrupted which will put the HCWs in no place to work efficiently. Eventually this will interfere with the productivity of the work.

Due to working hours in excess of 8 hours a day, the risk of burnout will occur. Despite having to work overtime to meet productivity as the workload is significantly increase due to the current trend of cases, constant work will cause physical, emotional and psychological fatigue which lead to burnout. The fact is each individual has different abilities, strengths and resilience. Even so, no one is able to survive long enough if faced with constant pressure of working long hours without getting the proper solutions or support (18). Thus, there are individuals who decide to continue to quit work or ignore the symptoms of burnout they face (22). However, if the symptoms of burnout are allowed to continue, then the individual is at risk for depression or anxiety disorders (23).

In term of job satisfaction, our study found that HCWs with moderate job satisfaction (42%) are the highest group experiencing burnout during the pandemic with more than half (231 out of 352) of respondents are within this group. Study done by Myhren et al. have also suggested that job satisfaction is significantly associated with burnout in which similar results was shown by Siti Hajar R et al. among Malaysian nurses' tertiary hospital (24, 11). However, in both studies lower job satisfaction was shown to have higher prevalence of burnout. The differences in finding can be due to the differences in demographic and time. The burden that the frontliner going through during this pandemic are heavy especially the situation in Lahad Datu district that remained in the red zone since September 2020. In addition to the increase in workload and the need to work more hours in curbing this pandemic, to some extent this has impacted our healthcare worker's job satisfaction. According to Locke et al., when one's values are consistent with one's needs, hence job satisfaction can be achieved as pleasant emotional state arising from the perceivment of one's employment or work experiences (25). In other words, if job satisfaction can be met, job stress will be reduced for nothing can

be achieved if employees are not able to give commitment and show their proper ability.

Nevertheless, without the satisfaction factor in work they are doing, this is not achievable. HCWs may even work without enthusiasm which eventually can lead to unproductive work (26). At the same time, the behaviours that exist due to burnout can be observed in various fields of employment and are not limited to the field of healthcare only. Individuals involved with burnout will try to stay away from the situations that are considered as the cause of the problem without leaving the job. This results in the individual being unable to demonstrate the best quality of themselves and affected on the work (21). In addition, we can see the situation is aggravated, beside the burden of workloads, HCWs do face backlash from the community in effort to curb the spread of this pandemic as they were blamed of the current condition we are in right now is due to failure of HCWs in handling the situation which reflected by the increased of trend of cases. This is one of the reasons which contribute to job dissatisfaction of the HCWs as they were not given recognition despite their tireless hard work all this while from the beginning of the pandemic trying their best day and night in curbing this disease (27).

Apart from that, exposure to COVID-19 patient were also found to be one of the significant associated factors of burnout among HCWs under PPKL. This finding was similar to the study done by Morgantini et al. which reported that burnout was associated with exposure to COVID-19 patient. In our study, those HCWs who were exposed to the patient with COVID-19 (63.6%) are found to be higher in proportion to have burnout than those who were not exposed (15.2%). This is understandable as lately there has been an increase in COVID-19 positive cases among frontliner especially healthcare workers from both the public and private sectors. This situation tends to be worse as there has been a substantial reported cases of mortality among our healthcare workers cause by this pandemic. The situation is worrisome as our HCWs do play an important role as the backbone of our national health system. Various factors such as fear of contracting the disease and infecting family members, stigmatization by others, possibility to be quarantine, lack of access to the up-to-date information with regards to this pandemic, and concern for self and family can be attributed to this (28). These findings are also in line with the study done by Mobaraki and Ahmadzadeh et al. and Sim and Chua et al. in which during the outbreak of the severe acute respiratory syndrome (SARS) epidemic in 2003 and the H1N1 pandemic in 2009, researchers assessed the psychological stress on HCWs found that exaggerated concerns about the health of self or their families, fear, and a sense of distress for working at a

hospital were one of the stress inducing factors (29,30).

Especially during pandemic, there were an increase in healthcare workers workload as they continuously working to curb this pandemic which have started since early year of 2020. Thus, efforts should be made by the authority to lessen the burden of our HCWs as they should be given enough rest and time to spend with family so that they can have adequate time to rest and have quality moment with family to get supported they needed and fulfil their familial responsibility.

Among suggestions that can be considered in addressing the issues with health inspector is to increase the number of PPKP on duty, this can be achieved by conducting a rotation of PPKP from other states or districts that are less busy to help areas or districts more affected by this pandemic. It is also appropriate that the position of PKP and PPKP be given attention since the country is in dire need of individuals who are trained and competent in addressing various important issues in the field of environmental health work among the public in Malaysia. At the same time, for other categories of healthcare workers that were also affected by this pandemic, to ensure they have enough time and adequate rest, shift system can be implemented as one of the solutions to the issue. Besides, efforts should be made by the authority to increase the incentive and give rewards to boost their morale and as a gesture of appreciation and gratitude.

Based on this study, those HCWs who working of more than 8 hours were having more burnout. In order to tackle this problem, besides having a shift system to reduce the working hours, by having more staffs, burden can be distributed equally so that even if there is sudden surge of cases, they may have enough staffs to be mobilize. With having more staffs, the burden of HCWs may lessen which eventually might increase their morale and mental health. Besides, HCWs do need rest and holiday. As human, healthcare workers too can succumb with illness, having more staffs, one can simply take a leave or MC without affecting current workload by burdening their colleagues.

In general, pandemic do have possible negative effects on individual's mental health and productivity particularly those HCWs who are on the frontline of disease prevention. Hence, mental health screening should always be implemented to identify those with early signs of burnout, stress, anxiety or depression and Psychological First Aid (PFA) should be given to those with problems and referred to a counsellor or psychiatrist as needed to ensure HCWs mental health protected. By providing proper support to HCWs in terms of recognizing their situation and presenting

solution, improving their awareness, encouraging them, and appreciating their relevance seems to reinforce their resistance to handle the disease at this time of period.

For future recommendation to improve the study, a more extensive and larger sample size can be done to improve the magnitude and to increase the generalization of the results acquired and with it the impact of the study as well. In view of our current situation in Malaysia with regards to the pandemic that seem not to be resolved anytime soon, future study should be included such as DASS score for each of the staff, and to assess the impacts or sequela by assessing the complication of burnout post pandemic toward HCWs which they might develop. Therefore, certain measure can be taken accordingly.

## CONCLUSION

In summary, this study has provided a better picture in understanding issue of burnout among healthcare workers in Lahad Datu district. Furthermore, these findings can be better used as an indication for designing specific interventions to address the high prevalence of burnout which target those significant associations in order to reduce the high prevalence of burnout among HCWs under PKKLD.

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