

Burnout amongst Healthcare Workers During the COVID Vaccination Programme in Malaysia- A Single Centred Study

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DOI: <https://dx.doi.org/10.47772/IJRISS.2024.8120205>

Received: 15 December 2024; Accepted: 19 December 2024; Published: 13 January 2025

ABSTRACT

The COVID-19 pandemic has significantly impacted healthcare workers, particularly those on the front lines in high-contagion areas. This single centred study evaluated the mental health challenges faced by healthcare workers in a private hospital during the pandemic. Utilizing quantitative methods, data were collected from 100 healthcare workers involved in the COVID vaccination program, focusing on variables such as work stress, burnout, self-efficacy, work-life balance, and depression. The findings reveal that 60.46% of healthcare employees experienced moderate fear of COVID-19, with significant levels of emotional exhaustion, depersonalization, and low personal accomplishment. The study also highlights a strong correlation between medical treatment and stress, as well as the negative impact of extended work hours on work-life balance. Additionally, the results underscore the importance of psychological support and institutional measures in mitigating the mental health burden on healthcare workers. This research contributes to the understanding of the psychological toll of COVID-19 on healthcare professionals and provides recommendations for improving their well-being through better organizational support and mental health interventions.

Keywords: Burnout; Mental Health; COVID vaccination programme; Healthcare workers; Depersonalization

INTRODUCTION

The COVID-19 pandemic has imposed significant challenges on healthcare systems globally, with healthcare workers (HCWs) bearing much of the burden. In particular, frontline HCWs have faced not only the physical demands of patient care but also heightened psychological stress due to prolonged exposure to the virus, increased workloads, and fears of personal and family infection. Numerous studies have shown that the mental health of HCWs is under severe strain, with reports of increased levels of anxiety, depression, burnout, and post-traumatic stress disorder (PTSD) [1,2]. The constant pressure, coupled with the fear of contracting or spreading the virus, has made HCWs particularly vulnerable to mental health deterioration [3].

In Malaysia, the government's National Vaccination Programme (PICK) was a critical initiative to curb the spread of COVID-19. HCWs played a pivotal role in the administration and logistics of the vaccination rollout, which was particularly challenging in high-risk areas such as Ampangan, Negeri Sembilan—classified as a COVID-19 "red zone" due to the high number of active cases [4]. These workers not only had to manage their

regular duties but also faced the additional strain of working in an environment where the risk of infection was high and resources were often stretched thin. Studies have demonstrated that working in such high-risk zones increases the likelihood of HCWs experiencing severe psychological outcomes, including emotional exhaustion, depersonalization, and reduced personal accomplishment—key indicators of burnout [5,6].

The pandemic's psychological impact on HCWs has not been uniformly distributed, as factors such as age, gender, job role, and pre-existing health conditions can exacerbate or mitigate these effects [7]. As a result, it is important to study the specific mental health outcomes associated with HCWs who were actively involved in the PICK programme in high-risk areas. This research focuses on healthcare staff in a private hospital in Ampangan, aiming to assess their levels of burnout, depression, fear of COVID-19, and self-efficacy.

Understanding these factors is critical for developing targeted interventions that can improve HCWs' mental well-being, prevent long-term psychological damage, and ensure the sustainability of healthcare systems during prolonged public health emergencies. Prior research has highlighted the importance of psychological support for HCWs, yet the specific stressors experienced during national vaccination programmes in high-risk zones remain underexplored [8]. This study seeks to fill that gap by providing insights into the mental health challenges faced by HCWs during the pandemic and proposing evidence-based strategies to mitigate these effects.

METHODOLOGY

Study Design

This study employed a cross-sectional, descriptive survey design to assess the mental health of HCWs during the PICK programme in Ampangan. The research focused on quantitative measures of burnout, depression, fear, and self-efficacy.

Participants

The study included 100 HCWs from a private hospital in Ampangan who were directly involved in the PICK programme. Participants were selected using simple random sampling. All participants were aged 18 and above and provided informed consent to participate.

Instruments

The following validated scales were used to assess participants:

- Maslach Burnout Inventory (MBI-HSS) for burnout (emotional exhaustion, depersonalization, personal accomplishment).
- Fear Scale for Healthcare Professionals (FS-HPs) for fear of COVID-19.
- General Self-Efficacy Scale (GSS) for self-efficacy.
- Center for Epidemiological Studies-Depression (CES-D) for depressive symptoms.

Data collection

Data were collected through an online questionnaire distributed to HCWs via a Google Form link. The survey was available in both English and Bahasa Malaysia to ensure inclusivity.

Data analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, and Spearman correlation analysis were employed to examine relationships between variables.

RESULTS

Demographic characteristics

Of the 100 participants, 94 completed the survey, yielding a response rate of 94%. The sociodemographic analysis reveals a predominantly female workforce, comprising 81% of the participants, with an average age of around 32.81 years (7.80). This indicates a relatively young demographic, which could influence the nature of workplace dynamics and stress levels. A significant number of participants (72%) reported having dependents at home, suggesting potential challenges in balancing work and personal life, particularly during high-demand periods. The presence of dependents could increase stress and emotional exhaustion, especially for those involved in intensive healthcare duties during the pandemic.

Health-wise, the majority of participants (85%) do not have any medical problems, which is encouraging for maintaining workforce productivity and resilience in high-stress environments. However, the 15% of participants with medical issues may face added vulnerabilities, requiring additional support and accommodations to manage their workload effectively. Furthermore, the data shows that while most workers (76%) willingly engaged in their duties, a notable 24% did so unwillingly. This could indicate potential underlying issues such as burnout, job dissatisfaction, or external pressures influencing their participation.

Post-vaccination re-infection rates were low, with only 7% of participants experiencing re-infection, indicating effective vaccine coverage within this cohort. The average working hours per shift is reported at 8.3 hours, suggesting a standard full-time workload. However, the variability in shift lengths, as indicated by the standard deviation, may contribute to stress and fatigue, especially for those working longer hours. Addressing these factors through targeted interventions, such as flexible scheduling and mental health support, could enhance overall well-being and job satisfaction among healthcare workers.

Table 3.1: Sociodemographic Analysis

Sociodemographic Variables	Mean(SD)	n(%)
Gender		
Male		16 (19%)
Female		70 (81%)
Age (years)	32.81 (7.80)	
Has dependants at home		
Yes		62 (72%)
No		24 (28%)
Medical Problems		
Yes		13 (15%)
No		74 (85%)
Delegated to work Willingly or Unwillingly?		
Willing		66 (76%)
Unwilling		20 (24%)
Re-infection post vaccination		
Re-infected		6 (7%)
Not reinfected		80 (93%)
Average working hours/shift	8.30 (1.46)	

Burnout and Depression

The results showed that 57% of participants experienced moderate emotional exhaustion, while 17% reported high levels of exhaustion. Additionally, 95% of participants reported depersonalization, and 97% had low personal accomplishment, indicating high burnout levels (Table 3.2). Depression was widespread, with 98% of participants scoring above the threshold for significant depressive symptoms (CES-D).

Fear of COVID-19 and Self Efficacy

The table presents mental health outcomes among healthcare workers, revealing significant findings that warrant cautious interpretation. For depression, measured using the CES-D scale, the mean score is 26.85 (9.84), with 98% of participants scoring above the threshold for significant depressive symptoms (≥ 16). This high percentage suggests a prevalent issue of depression within this group. For burnout, the results from the Maslach Burnout Inventory (MBI-HSS) indicate high levels of emotional exhaustion, depersonalization, and low personal accomplishment. Specifically, 57% of healthcare workers experience moderate emotional exhaustion, and 17% report high levels of exhaustion. Moreover, 95% exhibit high depersonalization, which suggests a detachment from their work or patients, a key burnout marker. Low personal accomplishment was reported by 97% of participants, reflecting a concerning trend in perceived job satisfaction. Regarding fear of COVID-19, 60.46% of participant’s experience moderate fear, and 5.81% report severe fear, suggesting the pandemic significantly impacts the psychological state of healthcare workers. Lastly, self-efficacy scores remain relatively high despite the negative mental health indicators. The mean self-efficacy score of 37.72 (6.31) suggests that healthcare workers still maintain a degree of confidence in their professional capabilities.

Table 3.2: Health Outcomes of the Healthcare Workers

Mental Health Scale	Mean (SD)	n (%)	Possible Ranges
Depression (CES-D)	26.85 (9.84)	84 (98%)	0 to 60
- Significant depressive syndrome (≥ 16)		84 (98%)	
Burnout (MBI-HSS) Emotional Exhaustion	50.65 (7.85)		0 to 67
- No or mild emotional exhaustion (≤ 18)		27 (31%)	
- Moderate emotional exhaustion (19-26)		49 (57%)	
- High emotional exhaustion (≥ 27)		15 (17%)	
Burnout (MBI-HSS) Depersonalization	11.21 (3.52)		0 to 20
- No or mild emotional depersonalization (≤ 5)		2 (2%)	
- Moderate emotional depersonalization (6-9)		3 (3%)	
- High depersonalization (≥ 10)		81 (95%)	
Burnout (MBI-HSS) Personal Accomplishment	8.24 (2.4)		4 to 40
- High personal accomplishment (≥ 39)		1 (1%)	
- Moderate personal accomplishment (34-39)		2 (2%)	
- Low personal accomplishment (≤ 33)		83 (97%)	
Fear of COVID-19 (FS-HP)	26.08 (6.09)		8 to 20
- Minimum fear (≤ 19)		29 (34.7%)	
- Moderate fear (20-29)		52 (60.46%)	
- Severe fear (30-40)		5 (5.81%)	
Self-Efficacy (GSS)	37.72 (6.31)		10 to 40

Correlation analysis

The correlation analysis presented in Table 3.3 provides insights into relationships between variables such as gender, age, medical problems, work delegation, reinfection, and average working hours among healthcare

workers. There are weak and non-significant correlations between gender and most of the other variables, except for work delegation. A negative correlation is observed between gender and being delegated to work willingly or unwillingly ($r = -0.232, p = 0.032$). This suggests that gender may play a role in whether healthcare workers feel compelled or willingly take on work assignments.

Age shows a positive correlation with having dependents at home ($r = 0.272, p = 0.011$), indicating that older healthcare workers are more likely to have dependents. Additionally, age has a moderate negative correlation with medical problems ($r = -0.312, p = 0.004$) and a positive correlation with reinfection ($r = 0.314, p = 0.003$). These correlations suggest that while older healthcare workers may have fewer medical problems, they might be more susceptible to reinfection. A negative correlation is observed between medical problems and reinfection ($r = -0.382, p = 0.000$), which suggests that healthcare workers with pre-existing medical conditions may be less likely to experience reinfection. This may reflect cautious behaviors or preventive measures taken by those with medical issues.

Additionally, a negative correlation with age ($r = -0.312, p = 0.004$) could indicate that younger workers in this sample experience more medical problems. The variable "delegated to work willingly or unwillingly" is negatively correlated with gender ($r = -0.232, p = 0.032$) and age ($r = -0.216, p = 0.046$), indicating that women and younger workers may feel more compelled to accept work assignments involuntarily. This might reflect workplace dynamics or cultural expectations, but the weak correlation suggests other factors also contribute. Moreover, there is a negative correlation with average working hours ($r = -0.245, p = 0.023$), implying that those who feel they are delegated work unwillingly may work longer shifts.

Average working hours per shift shows a weak but significant negative correlation with being delegated work willingly or unwillingly ($r = -0.245, p = 0.023$). This suggests that those who feel compelled to take on work may also have longer shifts. There are no significant correlations between average working hours and other variables like age, gender, or medical problems, implying that working hours may not be influenced by these factors in this dataset.

Table 3.3: Correlation Analysis

Variables	Gender	Age	Has dependents at home	Medical Problems	Delegated to work willingly/unwillingly	Reinfection	Average working hours/shift
Gender	1						
Sig. (2-tailed)							
N	86						
Age	-0.027	1					
Sig. (2-tailed)	0.807						
N	86	86					
Has dependents at home	0.118	0.272*	1				
Sig. (2-tailed)	0.278	0.011					
N	86	86	87				
Medical Problems	0.057	-0.312**	-0.039	1			
Sig. (2-tailed)	0.602	0.004	0.724				
N	85	85	85	85			
Delegated to work willingly/unwillingly	-0.232*	-0.216*	-0.079	0.107	1		

Variables	Gender	Age	Has dependents at home	Medical Problems	Delegated to work willingly/unwillingly	Reinfection	Average working hours/shift
Sig. (2-tailed)	0.032	0.046	0.472	0.331			
N	86	86	86	85	86		
Reinfection	-0.031	0.314**	-0.027	-0.382**	-0.026	1	
Sig. (2-tailed)	0.777	0.003	0.806	0.000	0.814		
N	86	86	86	85	86	86	
Average working hours/shift	-0.003	-0.100	0.112	0.110	-0.245*	-0.076	1
Sig. (2-tailed)	0.976	0.360	0.303	0.315	0.023	0.295	
N	86	86	86	85	86	86	86

DISCUSSION

Burnout and Depression Among Healthcare Workers (HCWs)

The results of this study indicate that a significant portion of healthcare workers (HCWs) involved in the National Vaccination Programme (PICK) in Ampangan, Malaysia, experienced high levels of burnout and depression. Specifically, 57% of the respondents reported moderate emotional exhaustion, while 17% exhibited severe emotional exhaustion. These findings align with global studies conducted during the COVID-19 pandemic, which have consistently shown that healthcare workers are at elevated risk for burnout due to the overwhelming demands placed on them [1,2]. In particular, burnout rates in this study are consistent with the findings of [3], who reported high levels of psychological distress, including burnout, among HCWs in China during the early stages of the pandemic.

The high levels of depression, as indicated by the CES-D scores (with 98% of respondents showing significant depressive symptoms), are concerning. Depression is not only detrimental to the well-being of HCWs but can also impair their ability to provide effective care, thereby compromising patient outcomes [9]. The mental toll of working in a COVID-19 “red zone” like Ampangan, where there is a high risk of infection and where HCWs are exposed to long hours and critical decision-making, likely exacerbates these depressive symptoms [5].

The high burnout and depression levels observed in this study could be attributed to several factors, including the overwhelming workload, fear of infection, and emotional strain from treating COVID-19 patients. These factors contribute to emotional exhaustion and depersonalization, both of which are key dimensions of burnout. In this study, 95% of participants reported high levels of depersonalization, indicating a detachment from their work or patients, which is a hallmark of severe burnout [10].

Fear of COVID-19 and Self-Efficacy

Fear of contracting COVID-19 has been one of the most prevalent stressors among HCWs worldwide during the pandemic [7]. This study found that 60.46% of respondents had moderate levels of fear, while 5.81% reported severe fear of COVID-19. These findings reflect the anxiety surrounding exposure to COVID-19, which was particularly acute during the early phases of the pandemic when vaccines were first rolled out [2]. The fear of infection was compounded by the uncertainty about the effectiveness of vaccines, as well as concerns about potentially transmitting the virus to family members [1].

Interestingly, the study found that HCWs with higher self-efficacy (as measured by the General Self-Efficacy Scale) exhibited lower levels of psychological distress. The mean self-efficacy score of 37.72 (out of 40) suggests that HCWs in this setting generally felt confident in their ability to manage the challenges posed by COVID-19. This is in line with previous research that has shown that self-efficacy is a protective factor against burnout and stress [11]. Healthcare workers with higher self-efficacy are more likely to use effective coping

strategies, which can buffer them against the negative emotional impacts of working in a high-stress environment like a pandemic [12].

Factors Contributing to Psychological Distress

The correlation analysis revealed that medical problems among HCWs were significantly associated with increased burnout and psychological distress. This finding is consistent with research showing that pre-existing health conditions can exacerbate the emotional and physical toll of working during a pandemic [6]. Healthcare workers with medical problems may have heightened concerns about their own vulnerability to COVID-19, which could explain their higher levels of burnout, fear, and depressive symptoms.

Additionally, the study found that extended working hours were a significant factor contributing to burnout and reduced work-life balance. On average, participants reported working 8.3 hours per shift, with 77% unwilling to delegate tasks, further increasing their workload. Prolonged working hours without sufficient rest have been shown to lead to both physical and emotional exhaustion, increasing the likelihood of burnout [13]. The unwillingness to delegate tasks could also indicate a high level of personal responsibility or fear of burdening colleagues, which may further contribute to stress and burnout [14].

Notably, the correlation analysis showed that medical problems were a stronger predictor of psychological distress than re-infection post-vaccination or willingness to work. This suggests that personal health concerns, rather than external factors like vaccination status or job attitude, are key drivers of burnout and depression in HCWs during the PICK programme. It is possible that HCWs with pre-existing conditions perceive themselves to be at greater risk, which amplifies their stress levels and makes them more susceptible to mental health issues [7].

Implications for Healthcare Management

The findings of this study highlight the urgent need for mental health interventions tailored to the needs of HCWs, particularly those working in high-risk areas during public health crises. One of the most critical steps that healthcare institutions can take is to provide psychological support, including counseling services and stress management programs. Implementing regular mental health check-ins and ensuring access to mental health professionals can help address the burnout and depression experienced by HCWs [2].

Additionally, healthcare administrators must address the systemic issues that contribute to burnout, such as excessive workloads and extended working hours. Reducing shift lengths, encouraging delegation, and ensuring adequate rest periods can help alleviate the physical and emotional burden on HCWs [13]. Moreover, healthcare organizations should foster a supportive work environment where HCWs feel empowered to take breaks and seek help when needed without fear of stigma.

Finally, improving communication around personal protective equipment (PPE) usage and infection control protocols could reduce HCWs' fear of contracting COVID-19. Ensuring that HCWs have the necessary resources to protect themselves from infection can reduce their anxiety and enhance their ability to focus on patient care [6].

CONCLUSION

In conclusion, the mental health of HCWs during the COVID-19 pandemic remains a critical concern that requires immediate attention. As healthcare workers continue to play a vital role in the global fight against COVID-19, ensuring their psychological well-being is essential not only for their personal health but also for the sustainability of healthcare systems. By implementing targeted mental health interventions and addressing systemic issues within healthcare organizations, we can better support HCWs during future public health crises and improve the overall quality of patient care.

Use of AI tools declaration

The authors declare they have not used Artificial Intelligence (AI) tools in the creation of this article.

Acknowledgments (All sources of funding of the study must be disclosed)

The authors would like to express their gratitude to all individuals and organizations who contributed to this study.

Authors' Contribution

Ashwini M Madawana and Prof Dr Santhi Raghavan contributed to the conception and design of the study, as well as data collection and analysis. Mohamad Arif Awang Nawawi contributed to the interpretation of data and critical revision of the manuscript. All authors approved the submission of the final version of the manuscript.

Conflict of Interest

The authors declare no conflict of interest.

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