How Anxious Our Healthcare Workers during COVID-19 Pandemic: A Cross-sectional Study in Hulu Langat District, Selangor, Malaysia

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Abstract

Introduction: COVID-19 is a serious threat to the global, not only to health, economy and society but also is a great challenge to HCW's mental health. Few studies were carried out and found HCWs' psychological well-being has been severely affected during this pandemic.

Objective: This study aims to assess how anxious our HCWs were during the COVID-19 Pandemic in Hulu Langat district in Selangor, Malaysia.

Method: A cross-sectional study was conducted involving 13 health clinics and one District Health Office in Hulu Langat District from February 2021 to Mei 2021. A self-administered questionnaire was distributed consisting of three sections (sociodemographic, job characteristics and anxiety assessment using a validated General Anxiety Disorder-7 questionnaire). Descriptive statistics were used to describe the sociodemographic, and multiple logistic regression was used to determine the factors associated with anxiety.

Results: A total of 291 HCWs were involved in this study. The prevalence of anxiety among HCWs was 11.7% (95%CI: 11.66, 11.85). Female (adj. OR= adj. OR: 3.54 (95%CI: 1.64, 7.63), thinking of resigning (Adj. 3.71 (95%CI: 1.50, 8.25) and those who did not use the Mental Health and Psychosocial Support (MHPPS) program (adj. OR: 3.71 (95%CI: 1.50, 8.25) were associated with anxiety.

Conclusion: Top management and managers in the organization play a critical role in fostering a healthy working environment, and good teamwork, as well as in increasing the awareness among HCW to participate more actively in psychosocial support such as the MHPSS program to reduce the prevalence of anxiety.

Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. It was started at the end of 2019 in Wuhan, China. In the first six weeks of the first six weeks, COVID-19 spread from the People's Republic of China to 20 other countries. Then, on 30th January 2020, the Director-General of the World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEIC)[1]. Following this, healthcare workers (HCWs) from the public health or clinical division play a crucial role in diagnosing, treating COVID-19 patients, controlling and planning mitigation plans to contain COVID-19.

After almost two years since the HCW worldwide struggled to manage the COVID-19 outbreak, they were exposed to highly stressful levels and traumatic events. The epicentre of the outbreak, Wuhan demonstrated the prevalence of anxiety in February 2020 was 24.1% [2]. Among frontliner in Wuhan [3], found a 20.1% prevalence of anxiety in the early phase of COVID-19. In Italy, a study by Rossi, Socci [4] found the prevalence of anxiety at 19.80% and Giusti, Pedroli [5] reported 71.2% of HCWs were having a high level of anxiety. In India, the prevalence of anxiety was 11.4% [6]. A systematic review and meta-analysis conducted by Pappa, Ntella [7] found that pooled prevalence of anxiety was 23.2% among HCWs.

Facing this critical situation, HCWs in both the public health and clinical sector play an essential role in controlling and providing care to the patient. Since the outbreak, HCWs have been at risk for mental challenges [8]. Indeed, a study done by Godderis, Boone [9] considered COVID-19 as a new occupational hazard for HCWs. The most prominent anxiety among the HCWs in Tehran was the risk of workplace COVID-19 contraction and transmission to the family, followed by uncertainty about the organizational support for personal and family needs in the event of worker infection [10]. Luceño-Moreno L, Talavera-Velasco B [11] found 58.6% of HCWs were having anxiety disorder during the COVID-19 pandemic. Although psychological issues are common among HCs, most health professionals do not often seek or receive regular mental treatment [12]. It could be due to the mental illness-related stigma which exists in the healthcare system and among healthcare providers [13].

Being a woman, a nurse and possessing an intermediate professional title were associated with higher anxiety [14, 15]. Du, Dong [3] also reported the same finding that women who had more anxiety symptoms were probably less psychologically prepared, and lack perceived self-efficacy to help patients and support from family. Age groups and junior technical status also were described as a factor in the development of psychological impact [16].

In January 2020, Malaysia reported the first case of COVID-19 and subsequently, there were two waves reported it was handled well. Then, the cases continue to decline and were almost recorded at zero on 1st July 2020 [17, 18]. Unfortunately, the confirmed cases continue to soar since then and even worse in 2021 with the emergence of a new variant of COVID-19 and variant of concern (VOCs) which are highly infectious compared to the variant before [19]. A lot of local newspapers already highlighted that Malaysian HCW was already overwhelmed, stressed, frustrated as well as emotionally and physically drained [20].

In view of the prolonged situation of the pandemic COVID-19, WHO has produced interim guidelines detailing the strategies to address Mental Health and Psychosocial Support (MHPSS) to all layers of the population including HCW [21]. In Malaysia, MHPSS guidelines were developed in 2020 and have been carried out at the national, state and district levels [22, 23]. Its establishment amed to protect or promote psychosocial well-being or prevent or treat mental disorders such as depression, anxiety and post-traumatic stress disorder.

The magnitude of psychological impact among HCWs in a public health setting is still lacking and questionable although there were a lot of studies had been done in a hospital setting. The health systems preparedness is not only ensuring enough hospital beds, ventilators and intensive care unit (ICU) capacity, but the ability of the health systems to quickly detect new COVID-19 cases and curb the spread of the highly contagious disease is equally or perhaps more important than the prior. Therefore, this study was conducted to assess how anxious our HCWs were during the COVID-19 Pandemic in Hulu Langat district in Selangor, Malaysia.

Methodology

Study design and location of study

A cross-sectional study was conducted from October 2020 to May 2021 in the Hulu Langat district. This district is the second-highest population district in Selangor, accounting for 1.41 million population with 7 subdistricts and has 13 government health clinics with 2 maternal and child health centres (KKIA). It has a blend of urban and country residences with a more significant part of the population settling in towns close to Kuala Lumpur and Putrajaya. Hulu Langat district recorded the third-highest number of COVID-19 confirmed cases in Selangor after Klang and Petaling districts since the second wave of this pandemic in Malaysia [24].

This study was conducted at 13 government health clinics and one District Health Office in Hulu Langat district in Selangor, Malaysia. The health clinics were Ampang Health Clinic, Balakong Health Clinic, Bandar Baru Bangi Health Clinic, Bandar Seri Putra Health Clinic, Bandar Tun Hussein Onn Health Clinic, Batu 9 Health Clinic, Batu 14 Health Clinic, Beranang Health Clinic, Kajang Health Clinic, Rinching Tengah Health Clinic, Semenyih Health Clinic, Sungai Chua Health Clinic, Sungai Sekamat Health Clinic and Hulu Langat District Health Office.

Study population

The study population was all the HCWs working in public health settings who are registered under Hulu Langat Health District Office and government health clinics in Hulu Langat. The inclusion criteria were HCWs who were literate in either English or Malay, at least aged 18 years old and consented to participate in the study and the exclusion criteria were HCWs who has a premorbid psychiatric disease diagnosed by a psychiatrist, were on prolonged leave or medical certificate and pregnant regardless weeks of pregnancy.

Sample size determination

The total sample size of this study was determined using a single population proportion formula using a reference of the prevalence of anxiety which is 14.9% [25]. Later, the sample size was calculated using online OpenEpi software with a 95% confidence interval, a level of significance α = 0.05 with a non-response rate of 10%. By using the software, the minimum sample size required was 195, and after the addition of 10%

of the non-response rate, the minimum sample size needed was 235 samples.

Sampling method

Stratified proportionate sampling was applied to select the number of participants in this study. The location of health facilities in Hulu Langat was stratified into 14 categories which were 13 government health clinics and 1 district health office. After the number of participants needed for each stratum was calculated, a simple random sampling was done using computer-generated Statrek software to select the participants based on the name list of HCWs in each clinic and health district office.

Study instruments

A set of self-administered questionnaires with a written consent form was given to selected respondents. All the given information in the questionnaire would be kept strictly confidential. The questionnaire was divided into three sections.

Section one comprises 12 items which consist of age, gender, marital status, race, religion, profession category, profession grade, educational level, total household income, living arrangement and pre-morbid illness.

Section two comprises 19 items which consist of workplace area, job position, frequency of contact with suspected or confirmed COVID-19 patients, average working hours per week, Personal history of COVID-19 infection, history of family members infected with COVID-19, history of a colleague infected with COVID-19, ever attended training or orientation related to COVID-19 management, awareness the existence of personal protective equipment (PPE) guidelines produced by MOH, conflict among colleagues, feel stress at work, had to do work that does not usually do, increase workload, ever thought of resigning due to COVID-19 outbreak, awareness the existence of MHPSS, the usage of MHPSS service and action taken when feeling depressed.

Section three covered the assessment for depression using General Anxiety Disorder07 (GAD-7) questionnaire.

General Anxiety Disorder-7 (GAD-7) (7 items)

This was a brief screening tool to evaluate the severity of anxiety, consisting of 7 items. A study by Spitzer, Kroenke [26] at 15 primary care clinics with a total sample of 2740, concluded that it has good internal validity Cronbach's α of 0.92 and test-retest reliability of 0.83. A cut of a point of 10 will produce 89% specificity and 82% specificity. There was no Malay-validated questionnaire available. Hence, the questions were translated to the Malay version using forward and back translation based on recommended guidelines [27]. Four language experts (two psychiatrists as content experts and two professional linguistic teachers as language experts) were responsible for forwarding (English to Malay version QAD-7) and backward (Malay to English version QAD-7) translation accordingly.

Then, a pilot study was conducted involving 15 HCWs in Hulu Langat District for face validity. A reliability test was done for this set of questionnaires which consists of seven items to determine the internal consistency resulting in Cronbach's alpha of 0.87. Subsequently, construct validity was carried out on another 291 respondents and revealed internal consistency with

Cronbach's alpha of 0.81. The total score was categorized as follows: minimal/no anxiety (score: 0-4) and mild anxiety (5-9), moderate anxiety (10-14) and severe anxiety (15-21). In this study, mild, moderate and severe anxiety was classified as having anxiety. In this study, mild, moderate and severe were classified as having anxiety.

Method of data collection

Face to face was the method of data collection for the variable in section and section two. Whereas, a self-administered questionnaire was the method of data collection assessing the anxiety level.

Informed Consent

Consent was taken with the selected participants prior to enrolment into the study. Only those who agreed to participate in this study were entitled to answer the questionnaire. In addition, the participant was allowed to withdraw at any time from the study.

Statistical Analysis

The data was entered and analyzed using Statistical Package for Social Science (SPSS) version 26.0 (SPSS Inc, Chicago, IL). Descriptive statistics were used to describe the sociodemographic distribution, job characteristics and job position of HCW. The categorical data were presented using absolute numbers and percentages. The numerical data were presented using mean and standard deviation for normally distributed data or median and interquartile range for non-normally distributed data.

Factors associated with anxiety were analyzed using binary logistic regression. Simple logistic regression was first conducted to determine the preliminary factors and significant value associated with anxiety. The crude odds ratio (OR) and 95% confidence interval (CI) were estimated. Then, significant variables in SLogR and those variables with less than 0.25 were also chosen for the multiple logistic regression (MLogR) to adjust for the confounding factors using the backward method of analyses. The Cox & Snell square was calculated to determine how much the variance of the anxiety was explained by the significant factors in the model. The model fitness was checked using the Hosmer-Lemeshow and the receiver operating characteristic (ROC) curve was calculated to determine how much the significant variable discriminates the anxiety and without anxiety. A p-value of less than 0.05 was considered significant. The adjusted odds ratio (Adj. OR) and 95% confidence interval (CI) were estimated.

Results

A total of 291 HCWs were involved in this study giving a response rate of 87.0%. The prevalence of anxiety among HCWs was 11.7% (95%CI: 11.66, 11.85). The sociodemographic characteristics of the respondents are shown in Table 1. The age of the participants ranges from 23 to 58 years old. The median age was 41.0 (IQR: 9.0). Slightly more than half of the participants were from 31-to 40 years old, majority of the participants were female (68.7%), married (73.5%), Malays (86.3%), from the support group I (44%), and profession as nurses (30.9%) followed by doctors (20.3%).

Table 1: The sociodemographic characteristics of the respondents (N=291).

Variables	Frequency, N=291, n(%)	Median (IQR)
Age		41.0 (9.0)
Age group		
18-30	84 (28.9%)	
31-40	154 (52.9%)	
41-50	41 (14.1%)	
51-60	12 (4.1%)	
Gender		
Male	91 (31.3%)	
Female	200 (68.7%)	
Marital status		
Single	71 (24.4%)	
Married	214 (73.5%)	
Divorced / widowed	6 (2.1%)	
Race		
Malay	243 (83.5%)	
Indian	22 (7.6%)	
Chinese	14 (4.8%)	
Others	12 (4.1%)	
Religion		
Muslim	251 (86.3%)	
Buddhism	14 (4.8%)	
Hinduism	17 (5.8%)	
Christian	9 (3.1%)	
Job Category (Grade)		
Professional (grade 41 and above)	81 (27.8%)	
Support I (grade 29-38)	128 (44.0%)	
Support II (grade 19-26)	53 (18.2%)	
Support III (grade 11-16)	29 (10%)	
Profession		
Doctor	59 (20.3%)	
Pharmacist	24 (8.2%)	
Assistant Medical Officer	24 (8.2%)	
Nurses	90 (30.9%)	
Assistant Environmental Health Officer	17 (5.8%)	
Public Health Assistance	17 (5.8%)	
Physiotherapist	2 (0.7%)	
Driver	8 (2.7%)	
Health Attendance	14 (4.8%)	
Laboratory Technician	12 (4.1%)	
Administrative	19 (6.5%)	
Others	5 (1.7%)	
Educational Level		
Master / PHD	11 (3.8%)	
Degree	79 (27.1%)	
Diploma	132 (45.4%)	
SPM	69 (23.7%)	
Household income		
Less than RM2500 (B40 Lower)	40 (12.7%)	
RM 2500 to RM 4850 (B40 Upper)	97 (33.3%)	
RM 4851 to RM 10,970 (M40)	109 (37.5%)	
More than RM 10, 970 (T20)	45 (15.5%)	
Living Arrangement		
Alone	17 (5.8%)	
Staying with family	249 (85.6%)	
Staying with friends	25 (8.6%)	
Pre-existing medical illness		
No	239 (82.1%)	
Yes	52 (17.9%)	
Diabetes Mellitus	8 (2.7%)	
Hypertension	14 (4.8%)	
Dyslipidemia	4 (1.4%)	
Bronchial Asthma	15 (5.2%)	
Others	11 (3.7%)	

Table 2: Job Characteristics and Position Distribution of the respondents (n=291).

Variables	Frequency, n (%)
Workplace	
Health Clinics	220 (75.6%)
District Health Office	71 (24.4%)
Average working hours per week	249 (85.7)
Less than 60 hours per week	42 (14.3%)
60 hours and more per week	
History had been infected with COVID-19	18 (6.2%)
Family had been infected with COVID-19	34 (11.7%)
Colleague had been infected with COVID-19	117 (60.1%)
Frequency of exposure to suspected or confirmed COVID-19 patients among frontline	(n = 104)
Everyday	43 (41.3%)
Less than 3 times per week	31 (29.8%)
At least 3 times per week	30 (28.9%)
Training or orientation related to COVID-19 management	205 (70.4%)
Attended	86 (29.6%)
Never attended	
Awareness regarding the existence of PPE guidelines by MOH	287 (98.6%)
Felt more stress at work	77 (26.5%)
Conflict among colleague	60 (20.6%)
Had to work that I don't usually do	102 (35.1%)
Had increased workload	140 (48.1%)
Ever thought of resigning because of COVID-19	35 (1.02%)
Awareness of existence of MHPSS program	213 (73.2%)
Ever use MHPSS service	23 (7.9%)
If I feel depressed, I will	
Stay alone	85 (29.2%)
Spend time with family	163 (56%)
Spend time with friends	37 (12.7%)
Meet counsellor	6 (2.1%)
Job position	
Non-front-liner	187 (64.3%)
Frontliner	104 (35.7%)

The job characteristic of the participants is shown in **Table 2**. 75.6% of the participants work at government health clinics with the majority have been working less than 60 hours per week (85.6%). 60.1% of the participants gave a history of their colleague had been infected with COVID-19. Almost three quarter has attended training or orientation related to COVID-19 and is aware of the existence of the MHPSS program meanwhile 98.6% of them aware of the existence of PPE guidelines by MOH.

The univariate analysis of the factor associated with anxiety is shown in **Table 3**. The preliminary significant associated factors for anxiety in this analysis were gender **(female)** (p<0.001), feeling more stress at work (p=0.005), conflict among colleagues (p=0.020), ever thought of resigning because of COVID-19 (p=0.002), ever use MHPSS (p<0.001), job position (p=0.030). The factors with a p-value less than 0.25 were: household income (p=0.220), workplace (p=0.120), average working hours per week (p=0.111), colleagues who had been infected with COVID-19 (p=0.190), training or orientation related to COVID-19 management (p=0.120), had to do work that they usually don't do (p=0.120), had increased workload (p=0.191) and awareness of the existence of MHPSS program (p=0.241), All significant variables and variables with a p-value less than 0.25 proceeded to multivariable logistic regression to determine the significant associated factors adjusted for confounding factors.

Table 3: Sociodemographic, job characteristics and job position factors associated with anxiety among HCW from simple logistic regression analysis (n=291).

Variables	Crude OR (95% CI)	X² stat (df)[a]	P value
Age Group (years)			
18-30	1.49 (0.17, 12.77)	0.13 (1)[b]	0.723
31-40	1.74 (0.21, 14.16)	0.27 (1)[b]	0.611
41-50	0.56 (0.05, 6.82)	0.20 (1)[b]	0.657
51-60	1		ref
Gender			
Male	1		ref
Female	1.27 (1.13, 1.56)	12.36 (1)	<0.001*
Marital status			
Non married	1		ref
Married	1.38 (0.64, 2.99)	0.68 (1)	0.412
Race			
Malay	1.55 (0.52, 4.62)	0.62 (1)	0.431
Non-Malay	1		ref
Religion			
Muslim	1.22 (0.41, 3.67)	0.13 (1)	0.721
Non-Muslim	1		ref
Profession			
Professional (grade 41 and above)	0.68 (0.21, 2.18)	0.43 (1)[b]	0.515
Support I (grade 29-38)	0.50 (0.16, 1.54)	1.50 (1)[b]	0.257
Support II (grade 19-26)	0.73 (0.21, 2.55)	0.24 (1)	0.623
Support III (grade 11-16)	1		ref
Educational level			
Degree and above	0.83 (0.32, 2.18)	0.14 (1)[b]	0.715
Diploma	0.86 (0.35, 2.07)	0.12 (1)[b]	0.733
SPM	1		ref
Household income			
Less than RM 2500	2.47 (0.58, 10.62)	1.48 (1)[b]	0.22
RM 2500 to RM 4849	2.77 (0.76, 10.03)	2.40 (1)[b]	0.12
RM 4850 - 10,959	1.26 (0.33, 4.89)	0.11 (1)[b]	0.741
RM 10,960 and more	1		ref
Living arrangement			
Alone	2.26 (0.44, 11.71)	0.94 (1)[b]	0.383
Staying with family	0.89 (0.25, 3.18)	0.03 (1)[b]	0.869
Staying with friends	1		ref

Variables	Crude OR (95% CI)	X² stat (df)[a]	P value
Workplace			0.12
Health Clinics	1.83 (0.85, 3.91)	2.42 (1)	ref
District Health Office	1		
Average working hours per week			
<60 hours	1		ref
60 hours and more	2.02 (0.85, 4.82)	2.50 (1)	0.111
History had been infected with COVID-19:			0.946
Yes	0.94 (0.32, 4.38)	0.01 (1)	ref
No	1		
Family had been infected with COVID-19			
Yes	0.44 (0.1, 1.92)	1.19 (1)	0.289
No	1		ref
Colleague had been infected with COVID-19			
Yes	1.68 (0.77, 3.67)	1.73 (1)	0.19
No	1		ref
Frequency of exposure to suspected or confirmed COVID-19 patient (n=104)			
Everyday	1.22 (0.32, 4.60)	0.08 (1)[b]	0.777
At least 3 times per week	1.75 (0.46, 6.74)	0.66 (1)[b]	0.426
Less than 3 times per week	1		ref
Training or orientation related to COVID-19 management			
Attended	1		ref
Never attended	0.47 (0.19, 1.19)	2.53 (1)	0.112
Feel more stress at work			
Yes	2.86 (1.37, 5.94)	7.89 (1)	0.005*
No	1		ref
Conflict among colleague			
Yes	2.6 (1.13, 5.34)	5.14 (1)	0.020*
No	1		ref
Had to do work that I usually don't do			
Yes	1.77 (0.86, 3.64)	2.39 (1)	0.12
No	1		ref
Had increased workload			
Yes	1.63 (0.79, 3.37)	1.75 (1)	0.1ref91
No	1		
Ever thought of resigning because of COVID-19			
Yes			
No	3.87 (1.66, 9.00)	9.83 (1)	0.002*

			ref
	1		
Awareness of the existence of MHPSS program			
Yes	0.63 (0.30, 1.35)	1.40 (1)	0.241
No	1		ref
Ever use MHPSS			
Yes	1		ref
No	0.20 (0.08, 0.52)	10.96 (1)	<0.001*
I feel depressed, I will			
Stay alone	1.25 (0.14, 11.42)	0.04 (1)[b]	0.841
Spend time with family	0.40 (0.04, 3.68)	0.66 (1)[b]	0.421
Spend time with friends	0.61 (0.06, 6.60)	0.17 (1)[b]	0.689
Meet with counsellor	1		ref
Job position			
Frontline	2.24 (1.09, 4.6)	4.78 (1)	0.030*
Non-frontline	1		ref

Notes: Logistic regression assumptions were met. COR: Crude Odds ratio, CI: Confidence Interval, *df*:degree of freedom. [a] Likelihood Ratio (LR) test; [b]Wald test. Significant value: p-value <0.05

Table 4 shows the multivariable analysis of the factors associated with anxiety among HCWs during the COVID-19 pandemic. Females were having 3.54 times the odds of anxiety compared to males (adj. OR: 3.54 (95%CI: 1.64, 7.63)). Those who were thinking of resigning are having 3.71 times the odds of anxiety compared to those who did not think of resigning (adj. OR: 3.71 (95%CI: 1.50, 8.25) and those who did not use of MHPSS program had 4.00 times the odds of anxiety compared to those who used the MHPSS program (adj. 4.00 (95%CI: 1.43, 5.76). All these three factors discriminate 69.0% of those having anxiety and not having anxiety (AUC: 0.690 (95%CI: 0.603, 0.777).

Table 4: Factors associated with anxiety among HCWs during COVID-19 pandemic in Hulu Langat District (N=291).

Variables	B (SE)	Wald (df)	Adj. OR (95%CI)	p-value
Gender				
Male			1	ref
Female	1.27 (0.46)	10.41 (1)	3.54 (1.64, 7.63)	0.001*
Thinking of resigning:				
Yes	1.31 (0.46)	7.99 (1)	3.71 (1.50, 8.25)	0.015*
No			1	ref
Ever use of MHPSS program:				
Yes			1	<0.001*
No	1.36 (0.52)	6.79 (1)	4.00 (1.43, 5.76)	ref

Notes: Multiple Logistic Regression (Backward LR method; constant 1.612); model assumptions are met (p-value Hosmer and Lemeshow test: 0.66), no interaction found, no multicollinearity, no outlier, overall predictor: 78.7%., AUC: 0.690 (95%CI: 0.603, 0.777), *Significant value: p value <0.05

Discussion

The COVID-19 pandemic appears to have impacted many individuals' lives and the psychological well-being of many individuals, including HCWs in public health settings. In this study, the prevalence of anxiety among HCW was 11.7% (95%CI: 11.66, 11.85) which was lower compared to a study by Chew, Ngiam [25] carried out in the Asia pacific using DASS-21 revealed that the prevalence of anxiety among HCWs was 14.9% In Malaysia setting, this study finding was also lower than compared to a

study not during COVID-19 pandemic among university HCW in Malaysia which who found the prevalence for anxiety was 36.5% [28]. However, the result in this study also was the opposite compared to a study done in our neighbourhood country in Singapore which found the prevalence of anxiety found was 8.9% [29].

HCWs both in clinical and public health settings are already overwhelmed, stressed, and frustrated as well as emotionally and physically drained fighting this pandemic that does not appear to be diminishing so soon. HCWs were already overwhelmed with high workloads, heavier psychological work demands, higher job control and long working hours even before the pandemic [30]. Mohd Fauzi, Mohd Yusoff [31] reported doctors in Selangor suffered 11.3% of severe anxiety Even though these studies showed that Malaysian's HCW scored lower than the pooled prevalence of anxiety (24%), it is important to keep the HCWs psychosocial well-being at optimum level [16].

In this study, females were associated with 3.54 times the odds of anxiety compared to males. Previous studies also revealed that female was a significant factor in psychological impact [14, 32]. The possible reason for this is that disparities in biological, psychological, and sociological features contributed to the vulnerability of females suffering psychological impact more commonly compared to males [33]. Apart from the fact that the majority of the working population in this district area is female, the pandemic has put great pressure on this demographic, as the majority of them are of reproductive age and have small children to care for. Malaysia's dilemma was exacerbated further when it was forced to undergo multiple instances of Movement Control Orders (MCO), which caused nurseries, kindergartens, and schools to close while the partner was required to work. Childcare issues have become a major source of concern for working mothers, in addition to the lack of places provided by the government for their children to be placed while they work.

The HCWs who never used of MHPSS program were significantly associated with higher odds of anxiety. Few studies were done previously highlighting the importance of psychosocial support as a protective factor against developing psychological impact [34, 35]. The pandemic teaches us and has major psychological repercussions on HCWs, emphasizing the significance of adequate psychological support, intervention and staff support which comprise counselling, the establishment of psychological support teams and the availability of a helpline [36]. MHPSS in Malaysia is a psychosocial support program not only given to HCWs but also to low-risk COVID-19 patients, Patient Under Investigation (PUI) and Patient Under Surveillance (PUS) [22]. In addition to counselling, HCWs who require intervention will be directed to either a psychiatrist or a family medicine professional using a ready intervention protocol.

The final factor which was found to be significantly associated with anxiety was the thought of resigning. It was found that 12% of respondents in this study had an intention to quit which was higher compared to a study done by Jang, You [37] which documented only 8.1%. Another study conducted by Anurag Srivastava [38] established a significant relationship between the psychological impact of the feeling of quitting during the present COVID-19 outbreak. Among the possible reason for resigning was an imbalance between work-life or career paths that have been changed after the advent of COVID-19 [39]. On the other view, respondents who had little control over their anxiety which could be due to perceived job risk also ultimately

would consider quitting. In addition, top management responses such as communication, ensuring staff safety, and showing care to the staff will drive the HCW to accept their work [37]. Hence, support from top management is indeed important to make the HCW not feel alone and unappreciated besides cultivating the culture and spirit of unity in the fight against COVID-19 among HCWs. Failure of top management to address quitting issues among HCWs can lead to a major impact on maintaining sufficient healthcare services.

Strengths and limitations of the study

In Malaysia, there was still a lack of literature assessing the psychological impact specifically of HCW in the Public Health setting specifically during the COVID-19 pandemic where Hulu Langat district was categorized as a red zone since the second wave of COVID-19, which might help in portraying the magnitude of psychological wellbeing during the outbreak. Therefore, this study was carried out to fill in the gap and investigate the psychological well-being among HCWs in the Public Health setting generally and in Hulu Langat District specifically.

However, this study inherits certain limitations. There was no baseline data for mental health status among HCWs screened using GAD-7 before in Hulu Langat. The existing mental health data were screened using the DASS screening tool. Hence, a better comparison of psychological well-being before and during the outbreak cannot be determined. This study required the participants to the self-administered questionnaire; hence the findings have fully relied on a self-reported survey which may question the authenticity of responses and recall bias. This study was a cross-sectional study and hence cannot be used to infer causality between the independent variables of anxiety.

Recommendation

The organization should arrange strategies to ensure all layers of HCW attended training courses mainly regarding COVID-19 especially those who never attended. The MHPSS program needs to be conducted as compulsory for all HCWs to promote mental health awareness. HCWs also should be educated on mental illness-related stigma as this possibly could be one of the driving factors that cause low utilisation of the MHPSS program among HCWs. A healthy and harmonious working environment needs to be provided through good communication between top management, supervisors, and staff in order for them to execute their work efficiently, effectively, and happily, thereby reducing the psychological burden on HCWs. The top management must ensure the needs of HCW are well taken care of in terms of food and drinks accessibility, resting areas and other needs such as computers, laptops, internet, ang manpower as well as to establish nurseries and places for staff's children to stay while their parent is working.

Conclusion

The prevalence of anxiety demonstrated in this study was comparable with international studies. Although this study discovered that the prevalence of anxiety among HCWs in public health care settings was lower than in previous Malaysian studies, this finding should not be dismissed and should be taken seriously by top management in addressing the possible causes of this psychological impact among HCWs. The top management and managers in the organization play a critical role in fostering a healthy working environment, and good teamwork, as well as increasing the awareness among HCWs to participate more actively in psychosocial support such as the MHPSS program to reduce the prevalence of anxiety.

Ethics approval and consent to participate

Ethical approval was obtained from Universiti Teknologi MARA Research Ethics Committee and Medical Research Ethics Committee (UiTM Research Ethics Committee: REC/04/2021 (MR/260); Medical Research & Ethics Committee MOH: NMRR-21-144-58117 (IIR)). Approval for data collection was also obtained from the Selangor Health State Department before the data collection was conducted (Ref: JKNS/KA/Q-712/04-01 Jld 14 (55)).

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