MENTAL HEALTH AMONG HOSPITAL STAFF DURING THE COVID-19 PANDEMIC IN A THAI UNIVERSITY HOSPITAL

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Abstract

Objective: This study aimed to evaluate the magnitude of mental health outcomes and its associated factors among hospital staff during the coronavirus disease 2019 (COVID-19) pandemic in a Thai university hospital.

Methods: This was a cross-sectional study conducted among hospital staff in a Thai university hospital. Data were collected in May 2020 using online questionnaires, comprising of questions pertaining to demographic, self-perceptions of COVID-19 exposure and prevention, and numeric rating scales for fear of and worry about COVID-19. We also included 3 additional measures, which were Stress Test-5, Generalized Anxiety Disorder-7, and Patient Health Questionnaire-9. Polytomous logistic regression and logistic regression were used to analyse the associated factors.

Results: Of the 1592 participants, 1242 (78.0%) were medical staff and 350 (22.0%) were non-medical staff. Most participants (54.1%) perceived that they had a moderate possibility of exposure to COVID-19. However, 57.5% of them perceived themselves as having a high ability to prevent contracting COVID-19. A total of 46.7% and 73.9% showed moderate fear and worry, respectively. Nonetheless, 86.0% and 77.7% of the participants reported mild stress and anxiety, correspondingly. Furthermore, most participants (86.6%) did not have or had minimal depression. Being female, having physical illnesses, and moderate to high self-perception of COVID-19 exposure were determined as risk factors for severe mental health outcomes. Conversely, higher income was a protective factor of severe mental health outcomes.

Conclusion: During the COVID-19 pandemic, the mental wellbeing of hospital staff should be of concern. Therefore, evaluating mental health outcomes would be one of all evidence to promote mental wellbeing.

***Keywords*:** COVID-19, Cross-sectional Study, Hospital staff, Mental Health, University Hospital

Introduction

The coronavirus disease 2019 (COVID-19) outbreak, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is currently a pandemic as declared by the World Health Organization (WHO) (1). It was first detected in Wuhan, the capital city of Hubei Province, China in December 2019 and has since spread around the world (2). On 13 January 2020, the Ministry of Public Health Thailand reported the first imported case of COVID-19 (3). The number of COVID-19 cases in Thailand has since increased across the country daily. The COVID-19 outbreak has not only heavily impacted global health, but also mental health (4).

Healthcare workers are on the front lines of the COVID-19 outbreak response and as such are exposed to physical and psychological hazards, including overwork, occupational burnout, exhaustion, pathogen exposure, a lack of contact with their families, stigma, psychological distress, and both physical and psychological violence (5, 6). The increasing number of cases, poor outcomes of certain critical patients, work overload, lack of personal protection equipment (PPE), fear of getting infected, widespread media coverage, lack of specific pharmacotherapy, and feelings of being inadequately supported may conduce to both the mental burden and wellbeing of healthcare workers (7-9). Similarly, the reasons for the mental distress in healthcare workers may also be related to numerous difficulties of workplace safety such as, insufficient understanding of COVID-19, lack of knowledge on prevention and control, and work overload. This coincides with the lack of obtaining sufficient rest, a high risk of exposure to patients with COVID-19, depletion of medical protective equipment, and exposure to critical life events (10). Consequently, the mental health problems among healthcare workers during this pandemic,

such as, stress anxiety, depression, anger, fear, denial, guilt, helplessness, isolation and insomnia, may occur (11, 12).

Hospitals are considered as the first location to handle COVID-19 cases. Consequently, all hospital staff members are more predisposed to experience mental health issues. Therefore, the aim of this study was to evaluate the magnitude of mental health outcomes and its associated factors among hospital staff, including medical and non-medical staff, during the COVID-19 pandemic in Songklanagarind Hospital, a university hospital which handles a significant number of COVID-19 cases within Southern Thailand.

Materials and Methods

Study design and participants

This cross-sectional study was conducted in May 2020 using online questionnaires via Google Forms. It included informed consent forms, questions on demographic, self-perceptions of COVID-19 exposure and prevention, as well as five standard mental health questionnaires. The psychiatric clinic telephone numbers were also made available for participants who needed psychiatric assistance.

The total number of participants were 5723 hospital staff, including medical and non-medical staff, from the Songklanagarind Hospital, Hat Yai. A sample size was calculated using n.for.survey command by R program to determine the minimum number of participants required for this study. A sample size was calculated based on prevalence in a previous study (10) and using d (margin of error) 20% of prevalence. The minimum sample size was 1029 participants.

The present study was approved by the Human Research Ethics Committee (HREC), Faculty of Medicine, Prince of Songkla University (REC.63-173-3-1), and is in compliance with the 1964 Helsinki declaration, and its later amendments or comparable ethical standards.

Measures

Demographic data

The demographic data included gender, age, marital status, religion, education level, occupation, income (per month), and history of physical and/or mental illnesses.

Self-perceptions of COVID-19 exposure and prevention

The self-perceptions of COVID-19 exposure and prevention were determined by the following questions: 'How do you perceive your possibility of exposure to COVID-19?' 'How do you perceive your ability to prevent contracting COVID-19?' Each item was rated into 3-points, ranging from low (1) to high (3).

Mental health assessment

Mental health outcomes, including fear of COVID-19, worry about COVID-19, stress, anxiety and depression, were evaluated using five standard questionnaires.

The numeric rating scale (NRS) was used to measure the level of fear of COVID-19. The level of fear ranged from 0 to 10, with a higher score indicating greater fear. The details of the scale are as follows: no fear (0), mild fear (1-3), moderate fear (4-6), severe fear (7-9), and extreme fear (10) (13, 14).

Worry about COVID-19 was evaluated via a latest questionnaire developed by the Department of Mental Health, Ministry of Public Health, Thailand. The questionnaire contains 5 items. Each item was rated into 3-points, ranging from low (1) to high (3). The total scores ranged from 5 to 15, which are categorized as follows: low worry (5-6), moderate worry (7-11) and high worry (12-15) (15).

Stress was assessed via the Stress Test-5 (ST-5), developed by the Department of Mental Health, Ministry of Public Health, Thailand. The questionnaire comprises of 5 items. Each item was rated on a 4 point Likert scale (0-3): 0=Not at all, 1=Several days, 2=More than half the days, 3=Nearly every day. The total scores ranged from 0 to 15, which were categorized as follows: mild stress (0-4), moderate stress (5-7), severe stress (8-9), and markedly severe stress (10-15). The Cronbach's alpha was 0.8 (16, 17).

Anxiety was assessed via the Generalized Anxiety Disorder-7 (GAD-7) - Thai version. The questionnaire contains 7 items, which scores as: 0=Not at all, 1=Several days, 2=More than half the days, 3=Nearly every day. The total scores ranged from 0 to 21, which are categorized as follows: mild anxiety (0-9), moderate anxiety (10-14), and severe anxiety (15-21), and markedly severe stress (10-15). The sensitivity and specificity are 89.0% and 82.0%, respectively (18, 19).

Depression was assessed via the Patient Health Questionnaire-9 (PHQ-9) - Thai version. The questionnaire contains 9 items, which scores as: 0=Not at all, 1=Several days, 2=More than half the days, 3=Nearly every day. The total scores ranged from 0 to 27, which were categorized as follows: no/minimal depression (0-4), mild depression (5-8), moderate depression (9-14), moderately severe depression (15-19), and severe depression (20-27). The sensitivity and specificity are 53.0% and 98.0%, respectively (20-22).

Statistical analysis

All data were analysed using R, version 3.5.2 (R Foundation for Statistical Computing). Demographic data was presented with the descriptive context in proportion or percentage for categorical data, and in mean and standard deviation for continuous data. Univariate analysis

was conducted to find potential candidate variables for multivariate analysis (p-value<0.2). The three primary outcomes, (i) fear of COVID-19, (ii) worry about COVID-19 and (iii) stress, were grouped into three categories for each. Since the assumption of proportional odds was not met for ordinal dependent variables, polytomous logistic regression was used to identify factors associated with the outcomes above. For the other two primary outcomes, anxiety and depression, these were grouped into two categories; associated factors were identified by logistic regression using a backward stepwise technique.

Results

Demographic characteristics

Of 5723 hospital staff working in Songklanagarind Hospital, 1592 participated in this study. 1242 (78.0%) were medical staff and 350 (22.0%) were non-medical staff. The mean age of participants was 38.7±10.6 years. The participants were primarily female (89.8%), single (54.8%), Buddhist (90.0%), and had an education level of a bachelor's degree (49.1%). Their income ranged from 6,910 to 110,000 Thai baht per month. From the total of participants, 38.4% had history of physical illnesses; however, only 1.3% were diagnosed with mental illnesses, as shown in Table 1.

Table 1: Demographic characteristics (N=1592)

Variables	n (%)
Gender	
Male	163 (10.2)
Female	1429 (89.8)
Age (years)	
Mean±S.D. (min-max)	38.7±10.6 (19-61)
Marital status	
Single	872 (54.8)
Married	644 (40.5)
Separated/ Divorced/ Widowed	76 (4.8)
Religion	
Buddhism	1433 (90.0)
Islam	155 (9.7)
Christianity	4 (0.3)
Education level	
High school	380 (23.9)
Vocational education	325 (20.4)
Bachelor's degree	782 (49.1)
Higher than Bachelor's degree	108 (6.6)
Income (baht)	
≤15000	590 (37.1)
>15000-25000	346 (21.7)
>25000-35000	274 (17.2)
>35000	382 (24.0)
Mean±S.D. (min-max)	26571.8±18341.8 (6910-110000)
Occupation	
Medical staff	1242 (78.0)
Non-medical staff	350 (22.0)
Physical illness	
No	981 (61.6)
Yes	611 (38.4)
Mental illness	
No	1571 (98.7)
Yes	21 (1.3)

S.D.: Standard deviation

Self-perception of COVID-19 exposure and prevention

Most participants (54.1%) perceived that they had a moderate possibility of exposure to COVID-19, while only 12.3% perceived that they had a high possibility of exposure. Nonetheless, 57.5% of participants perceived that they had a high ability to prevent contracting COVID-19; whereas, only 2.6% perceived that they had a low ability of prevention.

Mental health outcomes and associated factors

The mental health outcomes assessed in this study, including fear of COVID-19, worry about COVID-19, stress, anxiety and depression, are presented in Table 2. Most participants exhibited moderate fear of (46.7%) and worry about (73.9%) COVID-19. 21.9% expressed severe to extreme fear, while only 3.7% reported high worry about COVID-19. The majority of participants also reported mild stress and anxiety (86.0% and 77.7%, correspondingly). In contrast, only 3.4% and 0.5% showed severe to markedly severe stress and severe anxiety, respectively. A large number of participants (86.6%) did not have or had minimal depression, while 1.3% of them had moderately severe to severe depression.

For fear of COVID-19, the potential candidate variables for a multivariate analysis were gender, marital status, income, physical illness, and self-perception of COVID-19 exposure (p-value = 0.039, 0.119, 0.007, 0.085, <0.001, respectively). Polytomous logistic regression analysis for fear of COVID-19

Table 2: Mental health outcomes (N=1592)

Variables	n (%)
Fear of COVID-19	
No fear	47 (3.0)
Mild	453 (28.5)
Moderate	743 (46.7)
Severe	290 (18.2)
Extreme	59 (3.7)
Worry about COVID-19	
Low	356 (22.4)
Moderate	1177 (73.9)
High	59 (3.7)
Stress	
Mild	1369 (86.0)
Moderate	169 (10.6)
Severe	27 (1.7)
Markedly severe	27 (1.7)
Anxiety	
Mild	1237 (77.7)
Moderate	347 (21.8)
Severe	8 (0.5)
Depression	
No/Minimal	1378 (86.6)
Mild	119 (7.5)
Moderate	75 (4.7)
Moderately severe	17 (1.1)
Severe	3 (0.2)

(Table 3), using no fear as the referent outcome, revealed that being female was a risk factor for severe to extreme fear (aRRR=2.0). Participants who perceived that they had a moderate to high possibility of exposure to COVID-19 had an increased risk of moderate (aRRR=2.8-3.3) and severe to extreme fear (aRRR=2.6-5.7). Also, having physical illnesses was a risk factor for moderate (aRRR=1.4) and severe to extreme fear (aRRR=1.4). In contrast, the risk of moderate and severe to extreme fear reduced if participants had a higher income.

For worry about COVID-19, the potential candidate variables for a multivariate analysis were gender, marital status, occupation, physical illness, and self-perception of COVID-19 exposure (p-value= <0.001, 0.195, <0.001, 0.001, <0.001, respectively). Polytomous logistic regression analysis for worry about COVID-19 (Table 4), using low worry as the referent outcome, uncovered that being female, having physical illnesses, and moderate to high self-perception of COVID-19 exposure were risk factors for moderate worry (aRRR=2.2, aRRR=1.4, aRRR=2.1) as well as high worry (aRRR=3.1, aRRR=2.3, aRRR=5.5-24.5). Additionally, medical staff had a nearly twofold higher risk for moderate worry concerning COVID-19, compared to non-medical staff.

For stress, the potential candidate variables for a multivariate analysis were occupation, income, physical illness, and self-perception of COVID-19 exposure (p-value = 0.019, 0.005, 0.01, <0.001, respectively). Polytomous logistic regression analysis for stress (Table 5), using mild stress as the referent outcome, showed that having physical illnesses was a risk factor for moderate (aRRR=1.8) and severe to markedly severe stress (aRRR=2.0). Similarly,

Table 3: Polytomous logistic regression analysis for fear of COVID-19

Variables	Moderate vs. No fear**		Severe to Extreme vs. No fear**	
	cRRR (95%CI)	aRRR (95%CI)	cRRR (95%CI)	aRRR (95%CI)
Gender				
Male	1	1	1	1
Female	1.0 (0.7,1.4)	1.0 (0.7,1.5)	1.8 (1.1,3.0)*	2.0 (1.2,3.4)*
Income				
≤15000	1	1	1	1
>15000-25000	1.1 (0.8,1.6)	1.1 (0.8,1.5)	0.8 (0.5,1.1)	0.7 (0.5,1.1)
>25000-35000	1.1 (0.8,1.5)	1.0 (0.7,1.4)	1.2 (0.8,1.7)	1.0 (0.7,1.6)
>35000	0.7 (0.5,0.9)*	0.7 (0.5,0.9)*	0.7 (0.5,1)	0.6 (0.4,0.9)*
Physical illness				
No	1	1	1	1
Yes	1.3 (1.0,1.6)	1.4 (1.1,1.9)*	1.3 (1.0,1.7)	1.4 (1.1,1.9)*
Self-perception of COVID-19 exposure				
Low	1	1	1	1
Moderate	2.8 (2.2,3.6)*	2.8 (2.1,3.5)*	2.6 (1.9,3.5)*	2.6 (1.9,3.5)*
High	3.3 (2.1,5.0)*	3.3 (2.1,5.1)*	5.6 (3.5,8.9)*	5.7 (3.6,9.2)*

*Statistical significance
**Referent outcome
aRRR: adjusted relative risk ratio
cRRR: crude relative risk ratio

Table 4 Polytomous logistic regression analysis for worry about COVID-19

Variables	Moderate vs. Low**		High vs. Low**	
	cRRR (95%CI)	aRRR (95%CI)	cRRR (95%CI)	aRRR (95%CI)
Gender				
Male	1	1	1	1
Female	2.4 (1.7,3.4)*	2.2 (1.5,3.1)*	2.9 (1.0,8.5)*	3.1 (1.1,9.2)*
Occupation				
Non-medical staff	1	1	1	1
Medical staff	2.2 (1.7,2.9)*	1.9 (1.4,2.5)*	1.3 (0.7,2.5)	0.9 (0.5,1.7)
Physical illness				
No	1	1	1	1
Yes	1.5 (1.2,1.9)*	1.4 (1.1,1.9)*	2.3 (1.3,4.0)*	2.3 (1.3,4.1)*
Self-perception of COVID-19 exposure				
Low	1	1	1	1
Moderate	2.1 (1.6,2.7)*	2.1 (1.6,2.7)*	5.3 (2.1,13.0)*	5.5 (2.2,13.7)*
High	2.3 (1.5,3.5)*	2.1 (1.4,3.3)*	22.7 (8.6,60.2)*	24.5 (9.1,65.9)*

*Statistical significance
**Referent outcome
aRRR: adjusted relative risk ratio
cRRR: crude relative risk ratio

Table 5 Polytomous logistic regression analysis for stress

Variables	Moderate vs. Mild**		Severe to Markedly severe vs. Mild**	
	cRRR (95%CI)	aRRR (95%CI)	cRRR (95%CI)	aRRR (95%CI)
Income				
15000	1	1	1	1
>15000-25000	0.7 (0.5,1.1)	0.7 (0.5,1.1)	0.6 (0.3,1.3)	0.6 (0.3,1.2)
>25000-35000	0.7 (0.4,1.1)	0.6 (0.4,0.9)*	0.6 (0.3,1.3)	0.5 (0.2,1.1)
>35000	0.7 (0.4,1.0)	0.6 (0.4,0.9)*	0.1 (0.04,0.5)*	0.1 (0.03,0.4)*
Physical illness				
No	1	1	1	1
Yes	1.6 (1.1,2.2)*	1.8 (1.3,2.5)*	1.5 (0.9,2.6)	2.0 (1.1,3.5)*
Self-perception of COVID-19 exposure				
Low	1	1	1	1
Moderate	1.8 (1.2,2.6)*	1.7 (1.2,2.5)*	2.3 (1.1,4.9)*	2.1 (1.0,4.4)
High	2.2 (1.3,3.7)*	2.2 (1.3,3.7)*	4.9 (2.1,11.5)*	4.7 (2.0,11.2)*

*Statistical significance
**Referent outcome
aRRR: adjusted relative risk ratio
cRRR: crude relative risk ratio

moderate to high self-perception of COVID-19 exposure increased risk of moderate (aRRR=1.7-2.2) and severe to markedly severe stress (aRRR=2.1-4.7). On the other hand, increasing income decreased the risk for moderate and severe to markedly severe stress.

For anxiety, the potential candidate variables for a multivariate analysis were gender, marital status, income, physical illness, and self-perception of COVID-19 exposure (p-value = 0.174, 0.088, <0.001, 0.012, <0.001, respectively). Logistic regression analysis for anxiety (Table 6), using mild anxiety as the referent outcome, revealed that being female (AOR=1.6), having physical illnesses (AOR=1.6), and moderate to high self-perception of COVID-19 exposure (AOR=2.6-6.3) were determined as risk factors for moderate to severe anxiety. Conversely, the risk of moderate to severe anxiety decreased if participants had a higher income.

Table 6: Logistic regression analysis for anxiety

Variables	Crude Odds Ratio (95%CI)	Adjusted Odds Ratio (95%CI)	P-value LR test
Gender			0.022
Male	1	1	
Female	1.4 (0.9,2.1)	1.6 (1.1,2.6)*	
Income			<0.001
15000	1	1	
>15000-25000	0.5 (0.4,0.7)*	0.5 (0.3,0.7)*	
>25000-35000	0.8 (0.6,1.1)	0.7 (0.5,0.9)*	
>35000	0.6 (0.4,0.8)*	0.5 (0.3,0.7)*	
Physical illness			<0.001
No	1	1	
Yes	1.4 (1.1,1.7)*	1.6 (1.2,2.1)*	
Self-perception of COVID-19 exposure			<0.001
Low	1	1	
Moderate	2.6 (1.9,3.6)*	2.6 (1.9,3.5)*	
High	6.0 (4.1,8.9)*	6.3 (4.2,9.3)*	

*Statistical significance
LR test: Logistic regression test
Mild anxiety is the referent outcome

For depression, the potential candidate variables for a multivariate analysis were occupation, physical illness, and self-perception of COVID-19 exposure (p-value = 0.064, 0.200, <0.001, respectively). Logistic regression analysis for depression (Table 7), using no/minimal depression as the referent outcome, showed that participants who perceived that they had a moderate to high possibility of exposure to COVID-19 had an increased risk of mild to severe depression (AOR=2.1-3.3). In addition, being a medical staff decreased risk for mild to severe depression (AOR=0.7), compared to non-medical staff.

Table 7 Logistic regression analysis for depression

Variables	Crude Odds Ratio (95%CI)	Adjusted Odds Ratio (95%CI)	P-value LR test
Occupation			0.014
Non-medical staff	1	1	
Medical staff	0.7 (0.5,1.0)	0.7 (0.5,0.9)*	
Self-perception of COVID-19 exposure			<0.001
Low	1	1	
Moderate	2.1 (1.5,3.0)*	2.1 (1.5,3.1)*	
High	3.1 (1.9,4.9)*	3.3 (2.1,5.4)*	

*Statistical significance
No/Minimal depression is the referent outcome

Discussion

The present study on mental health outcomes during the COVID-19 pandemic among staff in our hospital found that most of the hospital staff exhibited moderate fear of (46.7%) and worry about COVID-19 (73.9%). However, the majority of staff reported mild stress (86.0%) and anxiety (77.7%). Additionally, the greatest number of them did not have or had minimal depression (86.6%).

A similar in China among staff, including medical and administrative staff, revealed that most staff reported moderate fear. Moreover, the same study showed that most staff reported no anxiety or depression (14). Another cross-sectional study based on data from 34 hospitals in China, using GAD-7 and PHQ-9 questionnaires, reported mild anxiety and no or minimal depression in most of their staff (8). There was one more study in China, also using GAD-7 and PHQ-9, that found mild anxiety and no or minimal depression in most staff (23).

Being female was determined as a risk factor for severe fear, worry and anxiety in this study. Likewise, a previous study reported being a female staff member as a risk factor for several mental health issues, including anxiety, depression, insomnia and obsessive-compulsive symptoms. Females were also reported to experience more severe degrees of mental health symptoms than their male counterparts (8). Another study by Pappa et al. also mentioned that the prevalence rate of anxiety appeared to be higher in females (24). As we know, anxiety disorders, such as specific phobias and generalized anxiety disorder, were more frequently found in females than in males (25). Furthermore, females are thought to be more emotionally aware and expressive than males (26), almost 90.0% of the participants were female. Nevertheless, proper guidance and efficient safeguards to prevent disease transmission alleviated anxiety among female staff (27).

In this study, having physical illnesses was a risk factor for severe fear, worry, stress and anxiety. Similar to a previous study; having physical illnesses was an associated factor for depression, anxiety, somatization, insomnia and obsessive-compulsive symptoms among healthcare workers (10). Given that the existence of an underlying medical condition is a higher risk factor for severe illnesses from COVID-19, staff with underlying physical illnesses would be more concerned, leading them to potentially develop a mental health problem.

The staff who perceived that they had a moderate to high possibility of exposure to COVID-19 had an increased risk for all severe mental health outcomes in our study. A prior study identified that perceived risk of getting personally infected, and infecting their families were the main factors associated with stress (27). Undoubtedly, a preoccupation

with the idea of being infected with COVID-19 could lead to severe mental health problems.

We also found that medical staff had a nearly twofold higher risk for moderate worry concerning COVID-19, compared to non-medical staff. Based on their job responsibilities, medical staff do have a higher chance of coming into contact with possible COVID-19 infections than non-medical staff. Studies in China showed that frontline healthcare workers who participated in the direct care of COVID-19 cases or those at risk of contact with COVID-19 cases were associated with a higher risk of multiple mental health problems (8, 10). Additionally, medical staff worried most that their families might be infected with COVID-19 from them (27).

Being employed as a medical staff decreased the risk for mild to severe depression, compared to non-medical staff. Several studies in China reported that medical staff had higher risk of depression during the COVID-19 pandemic than non-medical staff. This data was contrary to our study (10, 14). In Thailand, more attention is given to medical staff to prevent their mental health issues, including depression. For example, we provided many campaigns and a hotline to encourage healthcare workers to seek help. Moreover, medical staff may be taught how to cope with stress, which could cause depression more so than non-medical staff.

Nonetheless, the odds of severe fear, stress and anxiety decreases if staff had higher incomes. The fact is a higher income implies greater health security for people, especially during the COVID-19 pandemic, when many have faced financial instability. A number of individuals have expressed worries pertaining to financial restraints, (28, 29) whilst a large number of people have experienced financial losses or were on the edge of unemployment during the COVID-19 pandemic (29, 30).

There are some limitations in our study. First of all, the data were collected from one university hospital; hence, caution should be practiced in generalizing the results across all university hospitals in Thailand, or worldwide. Secondly, the study was conducted in May 2020 when the number of COVID-19 cases in Thailand had decreased significantly. Therefore, the results of this study may not exactly reflect the mental health issues experienced during the COVID-19 pandemic. Finally, a larger sample size would be needed to verify the results of this study.

Conclusion

In summary, the wellbeing of staff who work in hospitals should be of concern during the COVID-19 pandemic. Apart from their physical wellbeing, mental wellbeing is equally as important. Therefore, evaluating basic mental health issues such as, fear, worry, stress, anxiety and depression as well as their predictive factors are needed. The result of this study represents one of all evidence to direct the promotion of mental wellbeing among hospital staff during the COVID-19 pandemic.

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Competing interest

The authors report no competing interest with respect to the research, authorship, or publication of this article.

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