

Mental Health Outcomes and Mental Hygiene in the COVID-19 Era: A Cross-Sectional Study Among Healthcare Workers from a Regional Hospital in Ghana

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Purpose: The COVID-19 pandemic is affecting healthcare workers (HCWs) in unique ways which include the risk of infection and subsequent transmission to their colleagues and families, the issue of vulnerability due to lack of PPEs and access to equipment needed to provide best care for patients, moral injury in making triage decisions, the lack of professional and/or social support and psychological burdens during this period. This study thus investigates the mental health outcomes (fear, depression, anxiety, and stress) and mental hygiene among HCWs in Ghana in this COVID-19 era.

Methods: The study adopted a descriptive cross-sectional design.

Results: Our findings revealed a shared count of psychological outcomes among HCWs in Ghana. State anxiety was a prominent psychological outcome among HCWs. Being a female HCW was significantly associated with state anxiety. Correlation analysis showed a positive and significant relationship among all the psychological outcomes at $P < 0.05$ and 0.01 . There were no mental hygiene systems and/or structures in place at the regional hospital.

Conclusion: It is recommended that healthcare facilities and systems must swiftly implement and establish mental hygiene structures for their HCWs in this period of the pandemic to secure holistic, balanced life, and professional support for HCWs now and beyond this pandemic.

Keywords: anxiety, depression, fear, health care workers, Ghana, mental hygiene, stress

Introduction

As defined in the 1946 constitution of the World Health Organization (WHO), health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity.¹ Mental health is an integral part of health. Indeed, there is no health without mental health. As such, mental health is a state of well-being in which an individual realizes his or her own abilities, copes with the normal stresses of life, works productively and fruitfully, and is able to make a contribution to his or her community.² A more inclusive and elaborative definition proposed by,³ orates as, mental health is a dynamic state of internal equilibrium which enables individuals to use their abilities in harmony with universal values of society. Accordingly, basic cognitive and social skills; ability to recognize, express, and modulate one's own emotions, as well as empathize with others; flexibility and ability to cope with adverse life events and function in social roles; having

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a harmonious relationship between body and mind represent important components of mental health that contribute in varying degrees, to the state of internal equilibrium. It therefore represents a variety of objectives. They include rehabilitation of the mentally disturbed, prevention of mental disorders, reduction of tension in a stressful world, and the attainment of a state of well-being in which the individual functions at a level consistent with his or her mental potential.⁴

Mental hygiene includes all measures taken to promote and to preserve one's mental health.⁵ It is a set of practices that allow a person to enjoy mental health and be in harmony with his or her socio-cultural surroundings. It deals with the process of attaining mental health and preserving it in society. It is a means for mental health.⁶ Mental hygiene begins with the individual. Its practices are designed to prevent negative behaviour, provide emotional stability, and improve quality of life.⁵ In sum, the main aim of mental hygiene is to achieve mental health.

Mental hygiene for mental health includes;

1. Satisfying one's basic needs eg, the availability of food, water, clothing, shelter
2. Protecting one's self-esteem eg, learning to accept one's self for who they are
3. Managing one's emotions and learning self-control eg, identifying how one feels in a current situation and interpreting them to regulate their intensity in order to respond appropriately
4. Managing one's expectations and setting real objectives eg, maintaining motivation and being perseverant in achieving real goals
5. Thinking positive and being on the lookout for negative emotions
6. Learning to relax eg, respite, resting, sleeping
7. Finding support in others/Getting professional help eg, interact with others (family/friends) to have fun and share concerns.
8. Developing coping strategies
9. Exercising regularly.⁶

Prior to the current COVID-19 pandemic, empirical, practical, and anecdotal evidence showed that healthcare workers (HCWs) globally were already facing many hardships in their healthcare giving processes.⁷ Worldwide, the challenges faced by healthcare service providers and HCWs include but not limited to rising healthcare costs, increasing patient volumes, healthcare technology, information and integrated

health services, cybersecurity, big data analytics, healthcare staffing ratios, patient or client experience, infrastructure development, interoperability/consumer data access, invoicing and payment processing, lack of advancement opportunities for HCWs, lack of personal protective equipment (PPEs), and accessible points of care.⁸

In Ghana, few nurses are delivering patient care. The current national nurse-to-patient ratio is 1:22.⁹ This means that one nurse has the healthcare responsibility of 22 patients at any time in a healthcare facility in Ghana. Additionally, the nursing and midwifery personnel density per 1000 population as of September 2018 for the country stood at 0.926.⁸ These estimate default on the recommended standards by the WHO. In 2015, the nurse-to-patient ratio in the Upper East region of Ghana was one nurse to 449 patients while the nurse-to-patient ratio in the Northern region was one nurse to 946 patients.¹⁰ In some specific instances, the Kasoa polyclinic in the Awutu Senya East Municipal Assembly in the central region of Ghana, which provides both primary and limited secondary health services to its catchment populace, had a nurse-to-patient ratio and doctor-to-patient ratio as at 2012 to be 1:464, and 1:25,039, respectively.¹¹

Only recently, amidst the current pandemic, the Ghana Registered Nurses and Midwives Association (GRNMA), the Ghana Physician Assistants Association (GPAA), and the Ghana Association of Certified Registered Anaesthetists (GACRA) directed all their members to embark on a nationwide strike action, which began on Monday, September 21, 2020. The association laid down its tools in demand for better conditions of service. The association said the government's stance during recent negotiations fell afoul of ACT 651 of the labour law, which deals with issues of good faith for stakeholders. Among other things, the association asked for allowances for rent, allowances for uniform, allowances for transport and allowances for professional development. They argued that these demands will help address pertinent needs and improve lives as well as the service delivery of its members at work.¹² Generally, HCW staff shortages, heavy workload, inadequate healthcare equipment, lack of PPEs, and better work-related service conditions are the major challenges of healthcare provision in Ghana.¹¹

The novel coronavirus outbreak threatens to aggravate these work-related stressors among HCWs and amplify their psychological suffering. Previous research on mental distress among HCWs in the COVID-19 era have already shown that HCWs are more likely to suffer from

psychiatric disorders. In one study, approximately half of all physicians were experiencing burnout, and suffered higher rates of suicide than the general population.^{13–15}

There are also several reasons why pandemics such as COVID-19 can jeopardize HCWs' mental health. Prominent among these include the severe acute respiratory syndrome CoV (SARS-CoV), which emerged in China in 2002–2003 to cause a large-scale epidemic with about 8000 infections and 800 deaths and the Middle East respiratory syndrome CoV (MERS-CoV) which has caused a persistent epidemic in the Arabian Peninsula since 2012.^{16,17} Troubling research on the mental health effects of these pandemics has demonstrated that mental distress is not limited to the duration of the pandemic alone but persists long after the pandemic is over.¹⁸ Research on the prevalence and evolution of the psychological impact of caring for SARS patients has shown that the initial anxiety associated with feelings of helplessness and uncertainty was eventually replaced in many instances with depression and avoidance once such disease outbreaks were under control.¹⁹ It is therefore important to address the mental hygiene of HCWs not only in the current situation but also in the weeks, months, and even years to come.

Furthermore, initial research into the psychological effects of COVID-19 among medical staff in Wuhan, the source city of the COVID-19 pandemic, showed that mental distress was abundant among those caring for COVID-19 patients.²⁰ Interestingly, the psychological impact of COVID-19 appeared to fall most heavily on young women. Zhang et al found that being a female HCW was a risk factor for certain types of psychological distress associated with caring for COVID-19 patients.²¹ Such psychological distresses included, anxiety, depression, insomnia, and obsessive-compulsive symptoms.

Moreover, the pandemic is affecting HCWs in unique ways which include the risk of infection and subsequent transmission to their colleagues and families, the issue of vulnerability due to lack of PPEs and access to equipment needed to provide best care for patients, moral injury in making triage decisions, the lack of professional and/or social support and psychological burdens during this era.²¹

The psychological repercussions of COVID-19 have highlighted the need to maintain mental well-being through mental hygiene. In these difficult times, mental hygiene is the key to protecting society's most vulnerable, the heroic HCWs. This study investigates the mental health outcomes (fear, depression, anxiety, and stress)

and mental hygiene among HCWs in Ghana in the COVID-19 era.

Materials and Methods

Research Design

This study adopted a descriptive cross-sectional design. Descriptive cross-sectional studies allow for describing the status of relationships among phenomena at a fixed point in time. It can describe characteristics of a disease or health condition and potentially related factors in a sample at a particular point in time. They may also be useful for public health planning, monitoring, and evaluation.²² These studies assess how frequently, broadly, or severely the variables of interest occur throughout a specific demographic.²² Rightly, the current study sought to examine how broadly the variables of interest (fear, depression, anxiety, and stress) has occurred among HCWs in the COVID-19 era in Ghana.

Study Site

The newly carved COVID-19 department of the Greater Accra Regional Hospital (GARH) was used for the current study. The Greater Accra region continues to be the region recording the highest number of active cases since the index case of COVID-19 in Ghana. The COVID-19 department of the GARH is a 20-bed capacity intensive care unit equipped to receive and care for both COVID-19 positive cases and critically ill patients who are suspected cases of COVID-19. It comprises a holding bay for moderately ill patients who are suspected cases of COVID-19 and are awaiting their test results, a walk-in testing center for individuals to have their COVID-19 status checked and a disease control office where collation of national data about COVID-19 is performed.

The department began operation from March 12, 2020, when the index case of the infection was reported in the country. Since then, it has been running a 24-h care delivery services. Staff at the department comprise doctors, nurses, disease control officers, pharmacists, radiologists, cleaners, laundry personnel, biomedical laboratory scientists, drivers, security personnel, and mortuary attendants.

Study Sample

The study sample included people who were directly involved in the treatment process of COVID-19 positive patients at the COVID-19 department of the GARH. They included biomedical laboratory scientists (BLS), cleaners,

doctors, drivers, morgue attendants, nurses, and pharmacist. These were all defined as healthcare workers (HCWs) in this study.

Inclusion Criteria

All persons who were directly involved in the treatment process of COVID-19 positive patients at the COVID-19 department of the GARH. They included biomedical laboratory scientists (BLS), cleaners, doctors, drivers, morgue attendants, nurses, and pharmacist.

Exclusion Criteria

All persons who worked in other departments of the GARH.

Sample Size and Sampling Procedure

Census recruitment was employed to include all HCWs working at the COVID-19 department into the study. In all, 38 HCWs were sampled. This was the total number of HCWs stationed at the department during the period of the study.

Data Collecting Instruments

Four psychological scales and a structured questionnaire were utilized as data collection tools in the current study. The new Fear of COVID-19 Scale (FCV-19S) was used to measure the degree of fear among the HCWs, the Beck depression Inventory II (BDI-II) was used to measure attitudes and symptoms of depression among the HCWs, the recently developed 10-item State-Trait Anxiety Inventory (STAI) was used to determine anxiety among the HCWs and the Perceived Stress Scale (PSS) was used to measure the level of stress among the HCWs.

The Fear of COVID-19 Scale (FCV-19S)

The Fear of COVID-19 Scale (FCV-19S) is a newly developed scale to assess the fear of the pandemic. FCV-19S is a seven-item unidimensional scale with robust psychological properties measured on a 5-point rating scale ranging from strongly disagree to strongly agree. The minimum possible score for each question is 1, and the maximum is 5. A total score is calculated by adding up each item score (ranging from 7 to 35). The higher the score, the greater the fear of COVID-19. FCV-19S reliability and validity in assessing the levels of fear of COVID-19 among individuals has been verified.²³

The Beck Depression Inventory (BDI-II)

Beck Depression Inventory (BDI-II) is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression.²⁴ The BDI-II is scored by summing the ratings for the 21 items. Each item is rated on a 4-point scale ranging from 0 to 3. The minimum and maximum total scores are therefore 0 and 63. Severity of depression is interpreted as scores 0 to 14 minimal depression, 15 to 20 mild depression, 21 to 29 moderate depression, and 30 to 63 severe depression. Its reliability and validity have been previously established.^{25,26}

The State-Trait Anxiety Inventory (STAI)

The State-Trait Anxiety Inventory (STAI) is the definitive instrument for measuring anxiety in individuals.²⁷ It clearly differentiates between the temporary condition of state anxiety and the more general and long-standing quality of trait anxiety. It helps to distinguish between an individual's feeling of anxiety and depression. The recently developed short version of STAI by²⁸ was used in the current study. The short version both consists of five items of state anxiety (STAIS-5) and trait anxiety (STAIT-5), representing a substantial reduction in the length of the original 20-item scale. Responses are scored on a 4-point rating-type scale ranging from not at all to very much so. A minimum score of 5 and a maximum of 20 are calculated by adding up each item score for both sub-scales. Cutoff scores are >9.5 for STAIS-5 and >13.5 for STAIT-5. The five-item short versions of STAI had sound psychological properties that are comparable to those obtained on the full-form. Its reliability and validity have been established.²⁸ The short versions are particularly attractive in situations where practical considerations preclude the use of longer questionnaire and also allow researchers to differentiate between anxious and healthy participants.

The Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is the most widely used classic stress assessment psychological instrument. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap into how unpredictable, uncontrollable, and overloaded respondents find their lives. The PSS 10-item scale was used in this study. The 10-item scale is scored on a 5-point rating scale ranging from never to very often. PSS scores are obtained by reversing responses (eg, 0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0) to the four positively stated items (items 4, 5, 7, and 8) and then summing across all scale items. Score on the PSS range from 0 to 40 with

higher scores indicating higher perceived stress. Scores ranging from 0 to 13 indicate low levels of stress, 14 to 26 indicate moderate levels of stress and 27 to 40 indicate higher stress levels.^{29,30} Its reliability and validity have been previously established.²⁹

A structured questionnaire was also used to assess the mental hygiene adopted by the HCWs and/or provided by the regional hospital in this period of COVID-19.

Data Collection Procedure

Data was collected in-person from HCWs after lockdown restrictions were eased in the Greater Accra of Ghana ie, from May to August 2020. This period allowed HCWs to have worked on COVID-19 positive patients for about 6 weeks after the creation of the special department at the GARH by the Government of Ghana (GoG) in response to the effective strategic response to the pandemic. Prior to data collection, the purpose and procedure of the research was clearly and thoroughly explained to the HCWs. After consent from the HCWs, the data collection instrument was given to the HCWs to be completed. Some questionnaires were self-administered by the HCWs whilst others were administered with the help of the researchers. All questionnaires were field edited and kept until data analysis. All COVID-19 protocols were observed between researchers and HCWs during data collection.

Ethical Considerations

All methods were carried out in accordance with relevant guidelines and regulations. Ethical approval was obtained from the committee on human research, publication, and ethics (CHRPE) of the Kwame Nkrumah University of Science and Technology (KNUST). Ethical approval number is CHRPE/AP/113/13. Additionally, guidelines outlined in the Declaration of Helsinki were followed. Each HCW was informed prior to data collection that they were under no obligation to take part in the study and that they could withdraw from the study at any time. They were also assured that all responses would be treated with paramount confidentiality. All HCWs who agreed to be part of the study signed or thumb printed the informed consent form before completing the data collection instruments.

Data Analysis

Descriptive statistics were used to present the demographic details and psychological outcomes among HCWs. Analysis of variance (ANOVA) and the Independent Sample *t*-test were done to determine the associations of demographic

characteristics (gender, age, work role) with the psychological outcomes. Correlation analysis was performed to determine the degree to which the psychological status was related among HCWs. Results were considered significant at $P < 0.05$ and 0.01.

Results

Demographic Characteristics of HCWs

A total of 38 HCWs were involved in this study. They comprised HCWs stationed in the newly carved COVID-19 department of the GARH in response to the effective management (tracing, testing, and treatment) of the ongoing pandemic in the country. The overall sample consisted of biomedical laboratory scientists (BLS), cleaners, doctors, drivers, morgue attendants, nurses, and pharmacist (see Table 1). They were made up of 22/38 (57.9%) males and 16/38 (42.1%) females. Mean age (\pm SD) was 35 years (8.39).

Fear of COVID-19 Among HCWs

The newly developed Fear of COVID-19 Scale (FCV-19S) was used to measure the degree of fear among HCWs. Adopting a median score of 21, scores of HCWs were grouped into those who had low fear to COVID-19 and those who had greater fear to COVID-19. 26/38 (68.4%) had low fear and 12/38 (31.6%) had greater fear to COVID-19 (see Table 2).

Depression Among HCWs Due to COVID-19

Beck Depression Inventory II (BDI-II) was used to measure attitudes and symptoms of depression among HCWs.

Table 1 Demographic Characteristics of HCWs

Demographic Characteristics	f (%)
Gender	
Males	22 (57.9)
Females	16 (42.1)
Total	38 (100)
Work role	
BLS	3 (7.9)
Cleaners	3 (7.9)
Doctors	2 (5.3)
Driver	1 (2.6)
Morgue attendants	2 (5.3)
Nurses	25 (65.8)
Pharmacists	2 (5.3)
Total	38 (100)

Note: *f* represents frequency. % represents percentage. BLS means Biomedical Laboratory Scientist.

Table 2 Psychological Outcomes Among HCWs

Psychological Outcomes	Measurement of Outcome	f (%)
Fear of COVID-19	Low fear	26 (68.4)
	Greater fear	12 (31.6)
Total		38 (100)
Depression	Minimal depression	15 (39.5)
	Mild depression	4 (10.5)
	Moderate depression	12 (31.6)
	Severe depression	7 (18.4)
Total		38 (100)
State anxiety	Low state anxiety	11 (28.9)
	High state anxiety	27 (71.1)
Total		38 (100)
Trait anxiety	Low trait anxiety	28 (73.7)
	High trait anxiety	10 (26.3)
Total		38 (100)
Stress	Low stress	1 (2.6)
	Moderate stress	27 (71.1)
	High stress	10 (26.3)
Total		38 (100)

Note: f represents frequency. % represents percentage.

Findings showed that 15/38 (39.5%) were experiencing minimal depressive symptoms, 4/38 (10.5) were experiencing mild depression, 12/38 (31.6%) were experiencing moderate depression and 7/38 (18.4%) were experiencing severe depression (see Table 2).

State Anxiety Among HCWs Due to COVID-19

The recently developed short version of state anxiety (STAIS-5) was used to measure the temporary condition of state anxiety among HCWs. Findings showed that 11/38 (28.9%) and 27/38 (71.1%) had low and high state anxiety, respectively (see Table 2).

Trait Anxiety Among HCWs Due to COVID-19

The recently developed short version of trait anxiety (STAIT-5) was used to measure the more general and

long-standing quality of trait anxiety among HCWs. Findings showed that 28/38 (73.3%) and 10/38 (26.3%) had low and high trait anxiety, respectively (see Table 2).

Perceived Stress Among HCWs Due to COVID-19

The Perceived Stress Scale (PSS) was used to measure the degree to which HCWs life had become stressful. Findings showed that 1/38 (2.6%) had low stress, 27/38 (71.1%) had moderate stress, and 10/38 (26.3%) had high stress (see Table 2).

Demographic Characteristics and Associations with Psychological Outcomes

Further analyses (an analysis of variance (ANOVA) and the Independent Sample *t*-test) were done to determine the associations between demographic characteristics (gender, age, work role) and the psychological outcomes. The Independent Sample *t*-test showed that there was a significant difference in the mean scores of state anxiety and gender. The mean score difference (-2.6193) between the mean score for males (9.8182) and the mean score for females (12.4375) was considerable. This revealed an association with state anxiety and being a female HCW ($P < 0.048$). (see Table 3).

Correlational Analysis of Psychological Outcomes Among HCWs

Correlation analysis was performed to determine the degree to which psychological outcomes were related among HCWs. Results showed a positive and significant relationship among all the psychological outcomes at $P < 0.05$ and 0.01 (see Table 4). This indicated that as the level of one psychological outcome increased, the level of another psychological outcome also increased. Strong relationships were found between state anxiety and depression (0.814) and trait anxiety and depression (0.707). Moderate relationships were found between fear and depression (0.517), fear and state anxiety (0.544), trait anxiety and state anxiety (0.671), stress and depression (0.576), stress and state anxiety (0.518) and stress and trait anxiety (0.638). Weak relationships were found between fear and trait anxiety (0.324) and fear and stress (0.315) (see Table 4).

Table 3 Independent Sample t-Test of Demographic Characteristics and Psychological Outcomes

Psychological Outcomes	t	df	Sig	Mean Difference	Std Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Fear	-0.113	36	0.911	-0.1932	1.71649	-3.6744	3.28802
Depression	-1.78	36	0.084	-6.7898	3.81494	-14.527	0.94729
State anxiety	-2.045	36	0.048*	-2.6193	1.28099	-5.2173	-0.0214
Trait anxiety	-1.065	36	0.294	-1.2784	1.20007	-3.7123	1.15544
Stress	-0.803	36	0.427	-1.4943	1.86123	-5.2691	2.28043

Note: df means degrees of freedom. t means the test statistic. *Indicates a significance level at $P < 0.05$.

Table 4 Correlational Analysis of Psychological Outcomes Among HCWs

	Fear	Depression	State Anxiety	Trait Anxiety	Stress
Fear	I				
Depression	0.517*	I			
State anxiety	0.544**	0.814**	I		
Trait anxiety	0.324*	0.707**	0.671**	I	
Stress	0.331*	0.576**	0.518*	0.638**	I

Note: **Indicates correlation is significant at $P < 0.01$. *Indicates correlation is significant at $P < 0.05$.

Mental Hygiene Among HCWs Due to COVID-19

HCWs were asked if they set in place measures to personally help them deal with psychological pressures or preserve their mental health during this period, and if the regional hospital had in place measures to help them deal with any psychological disorders or preserve their mental health during that period. Results showed that the regional hospital of the Greater Accra region had no structures or systems in place to help its HCWs to deal with psychological pressure or preserve their mental health during this time of the ongoing pandemic. Only 13/38 (34.2%) of HCWs personally put in place measures to help them deal with psychological disorders or preserve their mental health during this period. The measures included;

1. Engaging in recreational activities and playing games

2. Having enough rest and respite
3. Spending time with family and friends
4. Listening to music

Discussion

The start and rapid spread of the COVID-19 pandemic has reinforced the importance of mental health and the critical need to create a mentally healthy workplace for HCWs. Globally, healthcare facilities and structures are experiencing the most disruptive periods in history.

In Ghana, the number of COVID-19 patients is increasing intensely. The country moved from a total of 40,000 cases from March to December 2020 to over 76,000 cases in February 2021. The number of active cases in the same period moved from 600 to over 8000 infections. Currently, an average of 700 new infections are recorded daily. The country's death toll due to the virus as at October 28, 2021, was 1170 people.⁴¹ This study therefore investigated the mental health outcomes and mental hygiene among HCWs involved directly in the health care giving process of persons who tested positive to COVID-19 at the newly carved COVID-19 department of the Greater Accra Regional Hospital (GARH) in Ghana.

Our findings showed that fear, depression, anxiety, and stress were shared among HCWs. Frequency distributions showed minimal occurrences in the upsetting categories of psychological outcomes measured among HCWs. However, occurrences of high state anxiety, 21/38 (71.1%) were prominent among the HCWs. State anxiety reflects the temporary condition of unpleasant emotions such as worry and nervousness and sometimes accompanied by acts such as compulsive behaviour and panic attacks about a present event.³¹ It is also defined as a transitory emotional state consisting of feelings of

apprehension, nervousness, and physiological sequelae such as increased heart rate or respiration.²⁸ Accordingly,³² state anxiety replicates psychological and physiological transient reactions directly related to adverse situations in a specific moment. Feelings of high state anxiety among HCWs are warranted. The COVID-19 pandemic has presented a unique, challenging, and extraordinary nursing period for all HCWs. Incessantly, HCWs face the fear of being infected with the virus and probable death from it. They are also confronted with infections and demise of their colleagues. They have increased workload from the already understaffed healthcare workforce. This burden contributes to mental disorders.³³ Additionally, the lack of PPEs across all healthcare facilities in the country could underwrite the worry among HCWs.

Previous and recent studies continue to show similar psychological effects of the pandemic on HCWs. Anxiety is the most commonly reported psychological outcome among HCWs^{7,13,14,18–21,34–36} Moreover, our study recorded association between female HCWs and anxiety. These findings are consistent with^{37–39} who reported more severe degrees of all psychological symptoms among women HCWs.²¹ Also corroborated this finding that being female is a risk factor for certain types of psychological distress associated with caring for COVID-19 patients. Such psychological distresses included, anxiety, depression, insomnia and obsessive-compulsive symptoms.

To boot, correlation analysis showed a positive and significant relationship among all psychological status. Our results establish the chemistry between fear, depression, anxiety, and stress. Strong relationships were found between state anxiety and depression (0.814) and trait anxiety and depression (0.707) of HCWs. Trait anxiety refers to the general tendency of an individual to respond with worry, nervousness, and disturbances to perceived threats in their environment.³¹ Anxiety as a unidimensional or multidimensional construct adopts that there is a general trait anxiety, which predisposes an individual to increase in state anxiety in various threatening situations. In this case, there should be a positive correlation between state and trait anxiety in any situation of threat.³² This is coherent with our findings, which also showed a positive correlation between trait anxiety and state anxiety (0.671).

Connectedly, evidence suggests these psychological outcomes interfere with work performance among HCWs.^{7,14,20} As such, there is the potential for these psychological outcomes to affect the care giving of these HCWs during this period. Unfortunately, no mental hygiene was in place for HCWs at the regional hospital in Accra, Ghana. The hospital

had no structures or systems in place to help its HCWs deal with psychological pressure and preserve their mental health during this time of the ongoing pandemic. Only a handful, 13/38 (34.2%) of HCWs personally put in place measures to help them deal with psychological pressure and preserve their mental health during this period.

The WHO, in their periodical to HCWs on managing the mental health of health workers during the COVID-19 pandemic, acknowledged that intense work pressure coupled with stress and its associated feelings are expected experiences during this time, and its impact on HCWs duties are by no means a reflection that HCWs cannot perform their responsibilities or are weak.⁴⁰ It further advises its HCWs that this period is not a sprint but a marathon that requires appropriate self-care among HCWs. The WHO also recommends its HCWs in this pandemic period to;

1. Take care of basic needs
2. Have enough rest
3. Stay connected with co-workers and colleagues
4. Stay connected with loved ones
5. Self-observation of emotions and feelings
6. Limit exposure to media
7. Form mutual support and/or self-help groups (WHO, 2020).

The general world of work is undergoing dramatic changes with the insurgence of COVID-19 and these changes will continue post COVID-19. Industries that will be well positioned to manage the distractions, frustrations, and shocks presented by the COVID-19 pandemic will be those that are resilient. The current design of working environment needs to address worker safety, health, and wellbeing, as well as attending to the needs of individual workers. Healthcare facilities most importantly must be first in resilient building capabilities as we deal with our new ways of living.

Recommendations

In achieving a mentally healthy workforce, we recommend that;

1. Healthcare facilities and systems lacking mental hygiene must swiftly implement and establish mental hygiene structures for their HCWs during this period of the pandemic to secure holistic, balanced

life, and professional support for HCWs now and beyond this pandemic.

2. Suitable schemes must be created in a healthcare setting to enable healthcare workers to monitor their health more closely and get immediate access to testing during an exposure. This reduces the mental pressure that exposed HCWs might suffer. Lack of testing among HCWs with inadequate protective equipment puts not only the lives of workers at risk but the entire community of patients and their relatives.
3. It is critical to also provide, make available, and ensure use of adequate PPEs for health workers per their various work roles. In addition to PPEs, it is very essential that facilities provide safe and proper hand washing systems at vantage points in health facilities with reinforcement of Infection Prevention and Control (IPC) measures that keep healthcare workers and their patient's safety.
4. Lastly, a positive health facility culture must be encouraged globally which is conducive for healthy conversations. HCWs should be free to formalize any psychological challenges they are going through and create a safe platform in the work environment to seek appropriate help.

Limitations of the Study

It will be worthwhile to study the mental health outcomes of a much larger number of HCWs in Ghana during this COVID-19 period. However, the strength of this work is that it studied the mental health outcomes of the first batch of HCWs who were posted to and stationed at the COVID-19 department of the GARH when it was created in response to the management of the pandemic in Ghana.

Conclusion

We are at the core of a pandemic and the burden of responsibility falls on only thousands of HCWs to provide care for millions of patients. This certainly provokes an intense psychological response from these HCWs. Our findings revealed a shared count of psychological outcomes among HCWs in Ghana. State anxiety was a prominent psychological outcome among HCWs. Being a female HCW was also significantly associated with state anxiety. Correlation analysis showed a positive and significant relationship among all the psychological outcomes at $P < 0.05$ and 0.01 . There were no mental hygiene systems and/or structures in place at the regional hospital.

Data Sharing Statement

Data can be made available upon reasonable request from the corresponding author.

Consent for Publication

All authors have agreed to the publication of this research.

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We are grateful to all the HCWs who took part in this study.

Author Contributions

All authors made a significant contribution to the work, which includes study conception, study design and methodology, data collection, data analysis, data interpretation, drafting of original manuscript, and agreeing to the journal to which the manuscript should be submitted. All authors read and approved the final manuscript and agreed to be accountable for all aspects of the work.

Disclosure

The authors declare no conflicts of interest in this work.

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