

ORIGINAL RESEARCH ARTICLE

Occupational stressors experienced by healthcare professionals in the course of the COVID-19 crisis

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Alma U. Zamurayeva¹, Taurzhan K. Aldabergenova¹, Aigerim T. Zhunussova¹, Roza K. Pshembayeva¹, Zhanna B. Zhilkibayeva¹, Feruza S. Sarsenbayeva¹, Anthony A. Eniola² and John D. Ojeka³

Department of Medical Sciences, Astana Medical University, Astana, Kazakhstan¹; British Canadian University, Obudu, Nigeria³; Landmark University, Omu-Aran, Nigeria³

*For Correspondence: Email: tony42003@yahoo.co.uk; Phone number 08132077642

Abstract

The novel coronavirus has significantly impacted healthcare systems worldwide, exposing healthcare professionals (HCPs) to work-related stressors to prevent the spread of SARS-CoV-2. This study aimed to assess the occupational stress of HCPs in Lagos State, Nigeria, using a qualitative approach. The study involved nine HCPs from various departments, including doctors, nurses, and medical laboratory technicians. The main causes of stress were workload, policy changes, and extended use of personal protective gear. The study found high levels of occupational stress among HCPs, with workload being the main cause. The impact of the disease outbreak crisis on HCPs' lives and work demands was observed, with occupational demands categorized into safety risk at work and public perceptions. Employers and unions must respond to HCPs' needs for workplace protection and appropriate help to address stressors. (*Afr J Reprod Health* 2024; 28 [8]: 67-76).

Keywords: JR-D model; Healthcare Professionals; Occupational Stress; COVID-19; Nigeria

Résumé

Le nouveau coronavirus a eu un impact significatif sur les systèmes de soins de santé dans le monde entier, exposant les professionnels de la santé (HCP) à des facteurs de stress liés au travail pour empêcher la propagation du SARS-CoV-2. Cette étude visait à évaluer le stress professionnel des HCP dans l'État de Lagos, au Nigeria, en utilisant une approche qualitative. L'étude a impliqué neuf HCP de divers départements, y compris des médecins, des infirmières et des techniciens de laboratoire médical. Les principales causes du stress étaient la charge de travail, les changements de politique et l'utilisation prolongée d'équipements de protection personnelle. L'étude a révélé des niveaux élevés de stress professionnel parmi les HCP, avec la charge de travail étant la principale cause. L'impact de la crise de l'épidémie sur la vie et les exigences professionnelles des HCP a été observé, les demandes de travail étant classées en catégories de risques pour la sécurité au travail et de perceptions du public. Les employeurs et les syndicats doivent répondre aux besoins des HCP en matière de protection des lieux de travail et d'aide appropriée pour faire face aux facteurs de stress. (*Afr J Reprod Health* 2024; 28 [8]: 67-76).

Mots-clés: Modèle JR-D; Professionnels de la santé; Stress professionnel; COVID-19; Nigéria

Introduction

The World Health Organisation (WHO) released information about Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2) or COVID-19. This is because it is hard or rather impossible to predict the outbreak of such a pandemic. The high infectivity and transnational properties lead to severe rates of mortality and destabilization of the social and economic

structures¹⁻³. Therefore, the global health crisis due to the pandemic inevitably created many challenges for healthcare professionals (HCPs), including an increased patient load, greater work pressures, and the introduction of new guidelines for COVID-19⁴.

Concerning one of the outlined objectives on the impact of the COVID-19 pandemic on the HCPs scope and healthcare professionals, it is necessary to discuss potential effects on HCP members' psychological state. The field experts

have reported that during the period of dealing with lessening the impact of the pandemic, they faced the dilemma that besides their professional duties, they also needed to stay healthy and fulfilled, and here they encountered the danger of coming across the virus themselves. The pandemic has led to deterioration in the mental health of healthcare workers. The mental issues confronted by health professionals include not only stress and negative emotions, but also occupational stress that may appear as depressive symptoms, lack of sleep, anxiety and other related disorders^{4,5}. Stressful professional life is a major problem for healthcare professionals' working within this industry rather than prestigious specialized medical institutions mainly due to the demanding nature of healthcare jobs that requires unswerving commitment and dedication. The huge number of patients who seek care every day further exacerbates this challenge. The current pressures involve aspects of the ongoing pandemic that are often beyond our capacity such as dealing with patients whose medical interventions have been futile, feeling helpless or having a risk of transmitting the virus to people we love.

Comparing the level of occurrence in regions identified by the World Health Organisation (WHO), the African zone was the sixth most affected⁶. As with most other African countries, Nigeria also felt the blown proportionate effects of the pandemic. Specifically, the summary of the epidemiologist indices revealed that as of August 26, 2021, the Nigerian health facility had documented 188,880 confirmed cases of the pandemic and 2,288 related deaths⁶. Nigeria was ranked 5th among the most affected countries in Africa and 77 most affected nations globally⁶.

Further, there have been record of COVID-19 infection in all the states of Nigeria. However, Lagos State remained as centre of the pandemic with contributing 35% of total confirmed cases. Evaluating its effectiveness in controlling the endemic diseases, 4 percent of the total endemic cases in the country were reported⁶. The following Investigative is an assemblage of challenges faced by the healthcare professionals working in the hospitals in Lagos State as they come up with the extremely high patient turnout. This is because there is an increased number of people who have

been infected by COVID-19 and therefore more work pressure is put on such people. Therefore, healthcare professionals engaged at the hospital are more prone to live through occupational stress.

Findings from research indicate that there is an increase in mental disorders commonly observed in developing countries like Nigeria^{7,8}. Therefore, it can be difficult for healthcare professionals to identify depression, anxiety and stress because they may mimic each other. People feel job stress differently. Different individuals have different abilities to identify and manage this condition effectively (stress). Healthcare workers who are working in hospitals are frequently exposed to challenging situations emanating from their work obligations as well as other accompanying factors, which tend to cause higher levels of strain. In order to enhance understanding of this subjectivity inherent within this issue a suitable framework should be adopted to reveal the complexity involved. Further still, Olude, Odeyemi, Kanma-Okafor, Badru, Bashir, Olusegun and Atilola⁹ study concluded that during such times when pandemic conditions prevail, occupational strain has increased among HCPs. Therefore, more research should be conducted on this area to widen knowledge on it and solve the problem before it occurs rather than reacting after it has already occurred which will benefit health care providers and managers' efforts towards prevention of its aggravation.

However, it remains imperative to note that previous work carried out in this research focused more on hypothesis analysis^{4, 6}. This study will diverge from that. The occupational stressors, for this particular research, will be analyzed with the help of the job demands-resources model better known as JD-R model. The JD-R model is a conceptual tool used for comprehending occupational stress. This concept posits that stress develops when demands placed upon an individual surpass his or her resources for meeting those requirements^{10,11}. The JD-R model was used when conducting qualitative studies during the virus outbreak and focused on occupational stressors of HCPs^{12,13}. However, it is important to understand that while using the data from these analyses to test the hypotheses it is not going to be possible to get an overall picture that would be relevant to Nigeria.

Nevertheless, there is a dearth of studies concerning the psychological health of the health-care workers in the Nigeria in the COVID-19 era. Even with the fact that Nigeria is among the five countries in Africa with the highest reported cases of COVID-19. It is critical to estimate the degree of the symptoms of depression, anxiety, and stress in the healthcare workers. Therefore, the role of this discussion was to evaluate the stress levels among healthcare workers at Lagos State University Teaching Hospital (LASUTH) during the COVID-19 outbreak they perform different tasks relevant to their professions. Additionally, we explore the notable influences of pandemic on the job demands and resources of HCPs, specifically focusing on safety at work, public perception, job satisfaction, and co-worker support as a proxy of the JD-R framework.

Methods

Study settings

The current study is a qualitative analysis conducted among HCPs at Lagos State University Teaching Hospital (LASUTH), located in Nigeria, during the SARS-CoV-2. The state government operates the tertiary hospital, LASUTH. The establishment fulfils the requirement for a tertiary referral healthcare institution, delivering specialised medical services to the large population residing in the state. LASUTH is widely recognised as a leading educational medical institution in the West African region. Moreover, a modest cottage hospital to a tertiary healthcare facility, characterised by its provision of high-calibre clinical services and its role in training healthcare professionals.

Participants and design

The study focuses on the role of healthcare professionals during the COVID-19 pandemic, including doctors, nurses, and medical assistants. Convenience sampling was chosen due to its accessibility, ability to provide informed consent, and recognition as relevant professionals. Participants provided informed consent, which was meticulously recorded. A witness, a member of the research team, verified the authenticity of the consent. The study employed a phenomenological

method to elicit detailed perspectives, establish relationships, and collect contextually nuanced data. This approach allows participants to articulate and provide feedback on their experiences using their own etymological, allowing for a more nuanced understanding of the situation. The study's objectives align with the study's objectives.

Research instruments and measurements

The study employed an inductive qualitative technique, conducting interviews during hospital break times. The interviewees provided their background, employment history, age, and experiences with COVID-19 care. An interview guide was created based on previous literature on workplace mental health, which was pilot tested with four participants. An expert review was sought for valuable ideas. Interviews were conducted with participants, using follow-up questions to encourage further detail. Introspective, exploratory probing, and memory prompts were used to gather comprehensive information. Non-verbal cues and the ability to adjust to participants' comfort levels were also considered. These strategies provided a supportive environment for open and extensive sharing of experiences, minimizing judgement. The research aimed to gather valuable information about workplace mental health and its impact on mental health care.

Process for data collection

The study conducted between February and April 2024 involved in-person interviews, ensuring accurate data collection. The sessions were conducted ethically and lasted between 25 and 45 minutes. The iterative methodology, negative case analysis, member checking, and continuous analysis were used to enhance the study's quality, richness, validity, trustworthiness, and data saturation. Participants provided a background description and narrative of their experiences, and the study received formal approval from the ethical committee of Great Zimbabwe University.

Data analysis technique

The study utilized HyperRESEARCH 4 for content analysis after interview sessions, meticulously examining each word in the text to identify patterns

and resemblances. Findings were represented using quotes from the textual transcript, ensuring accurate representation of the findings.

Results

A cohort of nine HCPs was enlisted for participation in the study. All participants were responsible for overseeing COVID-19 cases in LASUTH. The mean age of the respondents was 43.8 years, with a variation between 30 and 55 years. The deployment of all respondents to the response team occurred at various time intervals, specifically ranging from February to April 2024 (Table 1).

Healthcare workers face pandemic stress

The initial research investigation involved examining participants' subjective experiences of stress amidst the pandemic. The excerpts from the interviews indicate that a significant majority of individuals conveyed sentiments of fatigue and anxiety:

"...undoubtedly, the pandemic's excess patients have significantly increased our psychological and physical burdens."

Head of Medical Officers, HCP1

"...a large number of infected patients make us feel stressed and exhausted."

Assistant Medical Health Officer, HCP5

"...we also experience stress from having to put on safety gear for a prolonged period of hours when caring for patients. Once the patient has stabilised, we may remove the PPE."

Nursing Healthcare HCP7

"...the pandemic period takes a toll on us; I feel stressed out and drained."

Medical Health Officer, HCP2

"Indeed, due to the toll that this pandemic has already taken on us, I feel quite worried and worn out."

Nursing Healthcare HCP8

A number of the healthcare workers did not explicitly disclose their state of stress. Nevertheless, they share their emotions of distress and anxiety, which are symptoms of stress.

"...Upon receiving positive specimens from COVID-19 patients, I will experience intense fear and agitation due to the potential risk of contracting the virus."

Clinical Laboratory Scientist, HCP9

"...I feel terrified of contracting the disease and worried about the patient's current and past medical conditions each time we receive a positive clinical sample from a patient."

Assistant Medical Health Officer, HCP4

"...escalating the prevalence of pandemic cases on a daily basis induces a sense of anxiety within me..."

Assistant Medical Health Officer, HCP5

"...I am terrified of being infected because I witnessed positive individuals coming in and being transported to the isolation facility; I became nervous and apprehensive about getting infected."

Clinical Laboratory Scientist HCP6

Based on the participants' interview responses, all respondents expressed and experienced stress or other adverse emotions related to occupational stress, such as fear and anxiety:

Healthcare Professionals' COVID-19 Effects (J-RD Model)

The second research question concerns the pandemic's effects on participants' present employment and their capacity to manage the stress that comes with it. The outbreak, which turned hospitals into environments resembling battlegrounds with HCPs playing the role of frontline soldiers, has had a significant negative impact on their jobs. Due to the high influx of infected cases during each shift, HCPs at the

Table 1: Respondents background

Respondents	Age (year)	Rank	Occupation history (Years)	Work Setting Amid COVID-19
HCP 1	55	Head of Medical Officers	22	Oversee staff members and department organisation.
HCP 2	41	Medical Health Officer	6	Provide appropriate treatment and handle patients suspected or confirmed to be contaminated.
HCP3	30	Medical Health Officer	5	Provide appropriate treatment and handle patients suspected or confirmed to be contaminated.
HCP4	48	Assistant Medical Health Officer	12	Provide support to medical health officers in the provision of patient treatment and a lead role in prehospital treatment.
HCP5	45	Assistant Medical Health Officer	11	Provide support to medical health officers in the provision of patient treatment and a lead role in prehospital treatment.
HCP6	43	Clinical Laboratory Scientist	8	Proper management of patient medical samples for medical purposes
HCP7	40	Nursing Healthcare	10	Delivers to patient comprehensive healthcare services, administration of medications and continuous monitoring of patient
HCP8	44	Nursing Healthcare	11	Delivers to patient comprehensive healthcare services, administration of medications and continuous monitoring of patient
HCP9	48	Clinical Laboratory Scientist	12	Proper management of patients' medical samples for medical purposes

hospital experience significant levels of stress, leading them to perceive their workplace as lacking in safety.

Safe work environment

Based on the interview, except for HCP 1, who expressed an unexpected level of confidence in the safety measures implemented by their workplace, the rest of the participants inferred that the pandemic had led them to perceive their workplace as an unsafe environment. This is indicated below:

"I consider my workplace to be a safe place to work. First and foremost, even if the area is hazardous to health, we have enough personal protection equipment."

Head of Medical Officers HCP1

All responders, except HCP1, reported feeling unsafe at work because of COVID-19.

Public Perception

The outbreak, conversely, pressed all HCPs to their breaking point. However, several members of the populace hold a different perspective on this matter. The interview investigated the HCP's experiences with people and public perceptions concerning them. As detailed below, the HCPs share their public perception:

"...as a result, some people may be afraid to approach us; they're terrified about becoming contaminated."

Head of Medical Officers, HCP1

"...there is a concern among some individuals who we might transmit COVID-19 to them. The individuals exhibit heightened concern when I opt to use the same mode of transportation with them..."

Medical Health Officer, HCP2

"I believe people are afraid that we are the virus's carrier..."

Medical Health Officer, HCP3

"...they might believe that we, the medical professionals, are potential vectors for the virus."

Clinical Laboratory Scientist HCP9

"Others, such as the general public, believe we are contagious to them." When they see us in uniform, they are terrified."

Nursing Healthcare HCP8

From the respondents' responses, we discovered that depressing perceptions of the HCP's occupation could also lead to occupational stress. Public, repetitive harassment and annoying reactions shown towards HCPs can increase stress levels.

Personal support

The frontline responders during COVID-19 are the HCPs. Regarding personal support, using job satisfaction as a proxy, the respondents respond differently. During the outbreak, fifty percent of the respondents demonstrated their commitment to the cause. As derived from the interviewee, some comments from dedicated healthcare workers include the following:

"... I exert myself to the fullest extent of my capabilities." "I obtain personal gratification from my present vocation at this moment.."

Head of Medical Officers, HCP1

"... I am privileged to have the opportunity to make a meaningful contribution to my nation during the epidemic and gain vital experiences.."

Medical Health Officer HCP3

"... I derive satisfaction from working on the forefront of medical practice since it aligns with the fundamental purpose of pursuing a career in medicine.."

Medical Health Officer HCP2

"...I am delighted to contribute as a lifesaver amidst this pandemic, actively engaged in providing assistance and support.."

Nursing Healthcare HCP8

"... Our presence is crucial in containing and preventing the worsening of this epidemic.."

Nursing Healthcare HCP7

In the meantime, the other half of the participants expressed feelings of pressure and dissatisfaction with being selected as frontline responders during COVID-19.

"...I must perform my duties in a busier environment, and Movement Control Order (MCO) greatly increases my level of stress."

Assistant Medical Health Officer, HCP5

"...We are exhausted from working so hard every day..."

Clinical Laboratory Scientist HCP6

"...during the pandemic, I would not want to work as a frontline worker at all due to the constant fear of catching the virus every day at work."

Assistant Medical Health Officer, HCP4

According to the aforementioned responses, some respondents have experienced a significant impact from COVID-19, while others have been able to adapt or experience no change in their level of job satisfaction.

Coworker support

The participants were also questioned about their coworkers' support in dealing with COVID-19. The

following excerpts were extracted from all participants.

"...I talk about my experiences with my coworkers in this hospital and even in other hospitals."

Head of Medical Officers, HCP1

"...particularly when we get together, it becomes clear that they are experiencing many of the same difficulties that I am."

Medical Health Officer, HCP2

"Some of them have even expressed it to me before, and yes, I am experiencing the same sensation as they are."

Assistant Medical Health Officer, HCP5

"...when we speak to one another, some of them always express their feelings and experiences."

Assistant Medical Health Officer, HCP4

"...because they frequently discussed their issues when we were at work, based on what I could observe on social media. Some of them consider quitting their jobs; however, quitting at this time is not a smart idea..."

Clinical Laboratory Scientist HCP9

"...Some of them communicate and express their emotions to me in the same way that I did."

Nursing Healthcare HCP8

...whenever I engage in conversations with my coworkers, they consistently express encountering similar challenges as mine."

Nursing Healthcare HCP7

Founded on the interviews, the majority of HCPs consistently talked about and expressed their issues and emotions with coworkers. They work together as a team to confront the COVID-19 challenges.

Occupational stressor factors

Since a notable fraction of the participants anticipated feeling tension and worry due to

COVID-19, the interviews focused on exploring causes and contributing variables. The questions focused on healthcare professional stress sources and factors. In the interviews, the majority of the interviewees claimed excessive workloads as the primary factor contributing to their experience of stress, as pointed out in the excerpt:

"... Patients who were infected and saw a significant rise in symptoms made us feel an overwhelming burden.."

Head of Medical Officers, HCP1

"...our workload is soaring."

Nursing Healthcare HCP8

"... Amidst this epidemic, our present workload is escalating.."

Medical Health Officer, HCP2

Others used comparable language to convey a similar sentiment without mentioning workload. *"...we did not have enough medical personnel."*

Assistant Medical Health Officer, HCP5

"...the sudden increase in the number of patients makes me feel more burdened."

Clinical Laboratory Scientist HCP9

"...as a nurse, I am responsible for a large number of patients at the same time."

Nursing Healthcare HCP7

"...the growing number of patients pressures me"

Clinical Laboratory Scientist HCP9.

In contrast, many interviewees claimed that the discomfort of the PPE used by the hospital's medical staff also added to their stress levels.

"...doing swab tests on patients while wearing PPE and working in a hot environment wears us out physically and mentally."

Head of Medical Officers, HCP1

"...wearing uncomfortable PPE for hours..."

Medical Health Officer, HCP2

... even with the use of appropriate personal protective equipment, the fearful experience persisted."

Assistant Medical Health Officer, HCP4

Many participants claimed that healthcare staff experienced heightened levels of stress during COVID-19 because of the stringent standard operating procedure and the frequent modifications to it.

"...quite burdensome because we must adhere to their newly established SOP."

Medical Health Officer, HCP3

"...new procedures and SOPs need a certain amount of time to achieve universal compliance."

Assistant Medical Health Officer, HCP4

"...there exist specific SOPs that we must adhere to. SOPs change on a regular basis, which confuses me."

Clinical Laboratory Scientist HCP9

The outbreak has imposed a momentous burden on HCPs, primarily due to three factors. Established on prevalent research outcomes, it is evident that the primary contributors to occupational stress among healthcare professionals encompass excessive workloads, prolonged utilisation of discomforting PPE, and adherence to stringent SOPs.

Discussion

From the study, we continue to observe that several healthcare professionals experience substantial levels of stress amid the global pandemic. Because they are unable to withstand prolonged engagement to the rigorous requirements on their psychological and physical well-being, healthcare professionals frequently experience high levels of fatigue and burnout. Our findings are supported by the research of Tomaszewska, Majchrowicz, Snarska and Telega⁴, Xiaoming, Ming, Su, Wo, Jianmei, Qi, Hua, Xuemei, Lixia and Jun⁵.

We also observed that some healthcare professionals can communicate their emotions and feelings, while others opt to suppress their emotions and feelings, which is riskier. If an emotional eruption occurs, it would be a potential risk for both healthcare personnel and patients. The present study's results are corroborated by prior research, including the work of Daud¹², which highlights the impact of stress on the decision-making abilities of healthcare professionals. This influence has the potential to contribute to medical errors and consequently raise concerns regarding patient safety.

Additionally, it has been determined that the experience of fear and anxiety can contribute to the development of occupational stress. Within the framework of this investigation, it was ascertained that a significant proportion of healthcare professionals harbour apprehensions regarding their susceptibility to illness or infection. It has been determined that COVID-19 elicits feelings of dread and anxiety, including apprehension of the unfamiliar, solitary confinement, depression, resentment, anxieties fueled by information, and compliance. According to our research findings, which are consistent with Daud¹², it can be concluded that COVID-19 elicits a moderate degree of fear among a significant percentage of healthcare professionals. This implies that a considerable number of healthcare professionals are prone to experiencing fear, a factor that may contribute to their overall stress levels.

The apprehension surrounding the possibility of falling ill will likely induce healthcare workers to exercise greater caution. However, should they manifest any symptoms, they may erroneously attribute them to infection, thereby potentially influencing the overall work environment. There is an inverse association between a person's level of anxiety and the amount of rest they can obtain. The aforementioned circumstances are likely to result in a decline in the physical well-being of healthcare professionals. Hence, it can be inferred from the interview that a significant proportion of healthcare professionals at LASUTH exhibit evident signs of occupational stress, which has the potential to result in psychological distress and compromised mental well-being.

The study specifically identified that outbreaks have a substantial effect on the job demands and resources of healthcare workers. Simultaneously, the global pandemic exacerbated occupational stressors and contributed to the escalation of work stress among HCPs. This observation substantiates the alignment between the study's results and the JD-R concept, thereby validating the impact of the deadly disease on the occupation resources and demands experienced by HCPs. However, given that the model used is a comprehensive framework that incorporates a wide range of operational demands in the assessment of organisations and individuals, in a practical context, there may be certain dimensions of the JD-R framework that could potentially be disregarded or underestimated. This study has provided insights into the job demands and resources of healthcare workers that were previously unexplored in the context of the ongoing pandemic. In the present study, it was discovered that a notable stressor that surfaced was the frequent modifications to standard operating procedures (SOPs), which resulted in confusion among healthcare professionals.

Additionally, the use of PPE in terms of established routines and protocols can result in physical discomfort. The use of PPE throughout each healthcare shift, often for extended durations, induces significant fatigue and stress among healthcare professionals. In addition, personal protective equipment (PPE) has been reported to cause significant discomfort and various negative consequences. The healthcare system's capacity to effectively manage the crisis has significantly decreased because of the rapid development of SOPs during COVID-19. This is attributed to the lack of suitability of certain existing standard operating procedures (SOPs) in specific circumstances. Nevertheless, due to variations in facilities, manpower, and equipment availability across hospitals, certain healthcare facilities may deviate from or adapt their standard operating procedures (SOPs). Consequently, the healthcare professionals under investigation were reported to be experiencing mental distress and facing significant pressure because of hazardous working conditions.

Conclusion

Healthcare professionals (HCPs) are proactive individuals who possess specialised knowledge and skills to play a significant role in safeguarding a specific population from viral epidemics. Healthcare professionals (HCPs) who are actively engaged in the reaction to the global outbreak face potential psychological and emotional health difficulties. Healthcare professionals (HCPs) demonstrated perseverance in providing high-quality healthcare services while managing the difficulties associated with delivering care at COVID-19 isolation centres. Hence, it is recommended that policymakers and hospital administrators enhance existing policies and regulations to optimise the efficiency of the workflow. Similarly, the development of comfortable personal protective equipment (PPE) can be achieved through the utilisation of user-friendly materials or by implementing restrictions on the duration of PPE usage. There is an issue of SOPs, all the existing must go through a thorough review process to determine their relevance and appropriateness in line with the prevailing circumstances. Moreover, these SOPs should be made uniform for all the health facilities to reduce confusion and misinterpretation possibilities. It is important for hospital management to put into consideration workplace priority when discussing healthcare worker safety. Improvement of workplace safety may result from carrying out regular audits by Occupational Safety and Health Committee as well as renovating facilities and equipment. Additionally, there must also be enough stock of PPE at isolation centres so that HCPs who provide pandemic care can work under safe conditions at such places too. In addition, reasonable working hours should be set in place to avoid overloading HCPs with excessive workloads hence reducing the chances of burnout developing among them. More importantly, it is necessary that constant counselling sessions are initiated or improved along with mental checks on healthcare professionals (HCPs) and reinforced with strong support systems in place.

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