The experiences of healthcare workers during the COVID-19 crisis in Lagos, Nigeria: A qualitative study

James Olatunde Okediran[1], Olayinka Stephen Ilesanmi[2,], Adedoyin Anuoluwapo Fetuga[3], Ikenna Onoh[4], Aanuoluwapo Adeyimika Afolabi[5], Oladipo Ogunbode[6], Lois Olajide[7], Ayi Vandi Kwaghe[8], Muhammad Shakir Balogun[9]*

Abstract

Introduction **The novel coronavirus (COVID-19) pandemic has overwhelmed health systems globally. Healthcare workers (HCWs) are faced with numerous challenges during the COVID-19 response. In this study, we aimed to describe the experiences of HCWs during the COVID-19 outbreak in Lagos, Nigeria.**

Methods **We conducted a qualitative study on the experiences of frontline HCWs at the COVID-19 isolation centers in Lagos, Nigeria using purposive and snowballing sampling techniques. An in-depth interview which lasted for 25-40 minutes for each respondent was conducted among ten medical officers and four nurses between 15th June and 13th July 2020. We analyzed data using Colaizzi's phenomenological method.**

Results **Respondents' age ranged between 29 and 51 years with a median age of 36.5 years. Four themes were identified from data analysis. In the first theme, "COVID-19 care: A call to responsibility", HCWs expressed optimism regarding COVID-19 care, and described the work conditions at COVID-19 isolation centers. In the second theme, "Challenges encountered while caring for COVID-19 patients – coping strategies", HCWs experienced difficulties working in a new environment and with limited resources. They however coped through the available support systems. Regarding the "Experiences in COVID-19 care", the feelings of HCWs varied from pleasure on patients' recovery to distress following patients' demise. On the "Necessities in COVID-19 care", HCWs identified the need for increased psychosocial support, and adequate provision of material and financial support.**

Conclusions **HCWs at COVID-19 isolation centers need to be assured of a safe working environment while providing them with a strengthened support system.**

Keywords **COVID-19, COVID-19 coping strategies, healthcare workers, COVID-19 isolation centers, Nigeria.**

Introduction

The Coronavirus disease (COVID-19) pandemic shows the potential for spread and the possible global damage that can be inflicted by a newly emerging infectious disease.[1] Within three months of initial notification in China towards

Received: 16 September 2020; revised: 04 November 2020; accepted: 01 December 2020.

[1]MBBS, MSc, FWACP, Nigeria Field Epidemiology and Laboratory Training Programme, 50, Haile Selassie Street, FCT Abuja, Nigeria, Nigeria Centre for Disease Control, Abuja Nigeria, Department of Public Health, Federal Capital Territory Administration, Abuja Nigeria; [2]MBBS, MBA, MSc, MPH, PhD FWACP, Department of Community Medicine, University of Ibadan, PMB 5116, Oyo State, Nigeria, Department of Community Medicine, University College Hospital, PMB 5116, Ibadan, Oyo State, Nigeria; [3]MBBS, MPH, Nigeria Field Epidemiology and Laboratory Training Programme, 50, Haile Selassie Street, Abuja, Nigeria, Lagos State Health Service Commission, Obafemi Awolowo Way, Ikeja, Lagos, Nigeria; [4]MBBS, MSc, FWACP, Nigeria Field Epidemiology and Laboratory Training Programme, 50, Haile Selassie Street, Abuja, Nigeria, Nigeria Centre for Disease Control, Abuja Nigeria; [5]B. Tech. Department of Community Medicine, University of Ibadan, PMB 5116, Oyo State, Nigeria; [6]MBBS, MSc, FWACP, Nigeria Centre for Disease Control, Abuja Nigeria; [7]MBBS, MPH, FWACP, Nigeria Centre for Disease Control, Abuja Nigeria; [8]DVM, PGDE, MVSc, PhD, Nigeria Field Epidemiology and Laboratory Training Programme, 50, Haile Selassie Street, Abuja, Nigeria, Department of Veterinary and Pest Control Services, Federal Ministry of Agriculture and Rural Development, Abuja, Nigeria. National Tuberculosis, Leprosy and Buruli Ulcer Control Programme, Abuja, Nigeria; [9]MBBS, MPH, FMCPath, Nigeria Field Epidemiology and Laboratory Training Programme, 50, Haile Selassie Street, Abuja, Nigeria.

the end of 2019, the COVID-19 outbreak had spread across more than 100 countries.[1,2] As of 3rd November, 2020, a total of 47,093,222 cases and 1,207,290 deaths of confirmed COVID-19 infection have been reported globally by the World Health Organization.[3] As of the reference date, Nigeria had recorded 63,036 COVID-19 cases and 1,147 deaths.[3] In addition to its economic and educational impacts, COVID-19 has greatly impacted the health system with a resultant overwhelming of health facilities, healthcare workers (HCWs), and the entire health system.[3]

HCWs are active change agents whose expertise has been shown to contribute to the protection of any given population against viral epidemics.[4] However, the outbreaks of Ebola virus disease (EVD), severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS) have occasioned negative physical and psychological outcomes among HCWs.[5-7] These outcomes include higher likelihood of infection, changing guidelines and protocols; understaffing and increased workload; stigma, temporal separation from families, and re-deployment of non-specialist nurses and physicians to infectious disease units.[5,6,8] The effect of these on HCWs ranges from fear caused by perceived vulnerability to psychological manifestations of acute stress such as burnout, post-traumatic stress disorder, depression, anxiety and chronic stress.[9,10] Coping mechanisms have however been developed by HCWs in these difficult settings, deriving from the perceived value of their work, sense of duty, social and spiritual support, and adequate preparedness.[5,7]

In the COVID-19 context, HCWs who are involved in the care of COVID-19 cases have shown higher likelihoods of depression, anxiety, insomnia and distress than other health workers.[11,12] The novelty of COVID-19 and its unprecedented media coverage has accentuated COVID-19-related panic feelings and despair among HCWs and the general population.[13,14] Despite its similarities to previous outbreaks as regards health workers' experience, COVID-19 is a new disease whose peculiarities need to be explored using well-designed qualitative studies. There have been attempts to explore workers' experiences in COVID-19 management, however most of these have been conducted in China at the onset of the outbreak.[15,16] The findings of these studies are hence not likely to be reflective of the Nigerian experience regarding COVID-19 care among HCWs.

At the initial stage of the COVID-19 outbreak in Lagos, Nigeria, the major objective of containment was hinged on aggressive case investigation, contact tracing and prompt isolation/treatment of every single confirmed case in designated centers. These isolation/treatment centers were staffed by nurses and physicians deployed from their primary duty stations and who were mostly inexperienced in the care of highly infectious diseases. It is therefore pertinent to understand the full breadth of these workers' experiences including possible stressors, challenges, coping mechanisms and positive psychological response patterns during the COVID-19 outbreak. An understanding of these experiences will be needful to design stress-management interventions, reinforce healthy coping mechanisms and thus increase overall performance during COVID-19 and future outbreaks. Our aim therefore was to explore and describe the experiences of HCWs who were involved in the COVID-19 response at the beginning of the COVID-19 outbreak in Nigeria.

Methods

Research design

We conducted a qualitative study on frontline HCWs in different COVID-19 isolation centers in Lagos, Nigeria. As of 15th June, 2020, Lagos state, the epicenter of COVID-19 in Nigeria, had recorded 7,367 COVID-19 cases. As of the reference date, 216 (37.8%) new cases of Nigeria's 571 new cases were reported from Lagos state, recorded on the reference date. As of 13th July, 2020, Lagos state had recorded 12,640 COVID-19 cases. As of the reference date, 156

*Corresponding author: Olayinka Ilesanmi, ileolasteve@yahoo.co.uk

Article downloaded from www.germs.ro
Published December 2020
© GERMS 2020
ISSN 2248 – 2997
ISSN – L = 2248 – 2997

(26.2%) of Nigeria's 595 new COVID-19 cases were reported from Lagos state, recorded on the reference date.[17] The inclusion criterion was the engagement of frontline HCWs at the COVID-19 isolation centers during the COVID-19 outbreak. We included only medical officers and nurses in order to generate sufficient information on the experiences of these cadres of HCWs who were directly providing care to COVID-19 patients. Frontline HCWs who had spent less than two weeks at the COVID-19 isolation centers were excluded from the study. We recruited respondents using purposive and snowballing techniques. We interviewed a total of 14 respondents within a period of 29 days (15th June to 13th July, 2020). We individually conducted face-to-face in-depth interviews with 14 HCWs; ten medical officers and four nurses. We adapted the individual interview method for greater privacy, confidentiality for exploring individual views, and to obtain in-depth information suitable for those working in COVID-19 isolation centers. The sample size for the study was determined by interviewing frontline HCWs that met the inclusion criteria until a 'saturation point' was reached where no new information was generated. The interviewers transcribed the respondents' comments to effectively communicate the experiences of the respondents.

Interview guide

We developed an interview guide to direct the interviewers during the discussion. Respondents' age, marital status, years of work experience, original department, the date they started working on the COVID-19 ward, and number of days they worked on the COVID-19 ward before the interview was recorded. At the start of the interview, a broad data-generating question was first used: "Please tell me about your experiences of taking care of patients with COVID-19." Open-ended follow-up questions were thereafter asked to obtain detailed descriptions of the experiences of HCWs, examples of which included "what is the difference between providing care due to the epidemic and working in your original department"; "how did you feel on the first day"; "how are you feeling now"; "what challenges did you encounter"; "how did you respond"; "what external support have you received"; and "what other support do you need?" Probing statements, such as "Please tell me more about that", were used to enhance the depth of discussion.

Data analysis

The Colaizzi's phenomenological method was used to conduct qualitative analysis of data. The method is based on rich first-person accounts of experience using face-to-face interviews.[18,19] Descriptive phenomenology reveals the "essence" or "essential structure" of the subject matter under investigation.[18] We used seven distinctive steps of the method while sticking to the data by means of data familiarization, identified statements which had direct relevance to the phenomenon under investigation, formulated meanings, clustered themes, developed exhaustive description of the phenomenon by integrating all the identified themes, produced the fundamental structure and finally, sought verification of the fundamental structure by some of the respondents. We conducted interview sessions among each respondent until a saturation point was reached. Each interview session lasted 25-40 minutes.

Ethical considerations

Ethical approval for this research was obtained from the institutional review board of the Nigeria Institute of Medical Research (NIMR), Lagos, Nigeria (IRB/20/048). Informed consent was obtained from eligible respondents, and only consenting individuals were enrolled. Study respondents were assured of the privacy and confidentiality of information obtained from them. No known harm or injury was inflicted on study respondents as a result of participating in this study.

Results

A total of 14 HCWs (10 medical officers and 4 nurses) were recruited into the study. All respondents had been deployed into COVID-19 response teams and had managed COVID-19 cases at the isolation centers in Lagos State. Respondents' age ranged from 29 to 51 years

with a median age of 36.5 years. Among the respondents, 8 (57%) were males, and 5 (35.7%) were single. All respondents' deployment into the response team was at different periods, between late February and late May (Table 1). Four themes were identified from the analysis of the interviews. These included: COVID-19 care: A call to responsibility; Challenges encountered while caring at COID-19 isolation centers; Experiences, and Necessities in COVID-19 care (Table 2).

Theme one: COVID-19 care: A call to responsibility

The first theme was named "COVID-19 care: A call to responsibility". In the first subtheme "Optimism regarding COVID-19 care", 5 out of 14 HCWs felt fulfilled regarding case management of COVID-19 patients. The presence of these feelings among HCWs could be associated with their duty-bound doggedness in placing their lives on the line while caring for COVID-19 patients. HCWs are essential in tackling illnesses, and their role in the COVID-19 response cannot be undermined. While dispelling their role, they are change agents in the COVID-19 response.

"Feeling of positivity with the capacity to impact and bring change to the pandemic and also the feeling that my contribution will make patients better." (***Medical Officer 1***)

"I felt good because I was ready to work." (***Medical Officer 10***)

The second subtheme "present nature of work at isolation centers" describes work conditions and associated feelings presently among HCWs at isolation centers. Many HCWs currently perceive COVID-19 care as a repetitive task and a tiresome venture with no room for innovation. This was found to deter increased levels of interest in rendering care to COVID-19 patients at isolation centers.

"I feel tired now…" (***Medical Officer 3***)

"… We have been on the same spot focusing on COVID-19 management for the past 4 months. It is monotonous and boring." (***Medical Officer 9***)

Theme two: Challenges encountered while caring for COVID-19 patients – coping strategies

This theme was comprised of 7 subthemes relating to adapting to a new environment, inadequate resources and logistics, and reduced contact with loved ones. Although health workers discharged their duties appropriately, they similarly experienced difficulties adapting to the COVID-19 period as other members of the population. Although most respondents have had infection prevention and control (IPC) training(s) previously, the novelty of the coronavirus disease necessitated that extra precautions are taken while caring for patients at the isolation center. Constant usage of personal protective gears were reminders that COVID-19 is novel, and that laxity of self-protection during COVID-19 period is risky to individual's health.

"COVID-19 is very contagious and as a result you have to minimize your exposure as a HCW as well as wear PPE all the time." (***Medical Officer 3***).

"COVID-19 is different from previous illnesses. The difference includes wearing of full PPE to attend to patients, limited contacts with patients…" (***Medical Officer 4***)

Due to the insufficient workforce at isolation centers, non-critical care HCWs were deployed to these centers. The deployment of these HCWs required some form of adaptation to the life at isolation centers, a completely new environment. Some HCWs had not worked previously in the management of infectious illnesses. Nine of the 14 (64%) respondents were nervous or scared of resumption at the isolation center. Such feeling could be traced either to the increasing number of COVID-19 cases in Lagos State, the epicenter, or the number of associated deaths recorded globally. Thus, the unavailability of in-depth and clearly defined information regarding the transmission and prevention of COVID-19

Table 1. Sociodemographic characteristics of study respondents

	Age (years)	Sex	Marital Status	Work experience (years)	Original facility/unit worked at	COVID-19 deployment start date
Medical Officer 1	32	Male	Married	8	General hospital	April 24
Medical Officer 2	41	Male	Married	13	General hospital	May 1
Medical Officer 3	35	Male	Married	11	Private practice	March 1
Medical Officer 4	31	Female	Single	2	Infectious disease hospital	February 27
Medical Officer 5	48	Female	Married	23	Island maternity hospital	May 28
Medical Officer 6	38	Male	Married	13	General hospital	May 10
Medical Officer 7	43	Male	Married	16	General hospital	May 10
Medical Officer 8	41	Male	Married	8	General hospital	May 7
Medical Officer 9	30	Male	Single	6	Infectious disease unit	February 28
Medical Officer 10	29	Male	Single	5	Training/Health Service Commission	February 29
Nurse 1	35	Female	Single	13	Health maintenance organization	February 27
Nurse 2	29	Female	Single	6	General hospital	April 20
Nurse 3	51	Female	Married	30	General hospital	March 21
Nurse 4	41	Female	Married	10	General hospital	March 18

Table 2. Theme categories and subthemes

Theme category	Theme definition	Subthemes
1	COVID-19 care: A call to responsibility	Optimism regarding COVID-19 care Present nature of work at isolation centres Adapting to an entirely new environment: insufficient knowledge of COVID-19
2	Challenges encountered while caring at COVID-19 isolation center – coping strategies	Inadequate resources: Fear of being infected Poor staff welfare and delayed payment Inadequate logistics Language barrier: Poor health worker-patient understanding Reduced contact with loved ones
3	Experiences in COVID-19 care	Pleasure on patient's recovery Increased infection prevention and control skills Heroic feeling Difficulty in explaining the need for isolation among asymptomatic patients Stigmatization from other healthcare workers
4	Necessities in COVID-19 care	Expert opinion in case management Increased staff welfare Increased supply of personal protective equipment Psychological evaluation of healthcare workers/patients

heightened tension following initial resumption at the isolation center.

"I was anxious even though I volunteered for the training, I wanted to go back. I was afraid it was like a death sentence." (***Medical Officer 6***)

"Lack of superior knowledge by Infectious Disease experts to review severe COVID-19 cases. This is a major challenge with which many of us at isolation centers are faced." (***Medical Officer 2***)

"There is a lot of tension in the air amongst the patients and the HCW." (***Medical Officer 3***)

Rather than being dissuaded from performing their duties, HCWs became more committed to their course while caring for COVID-19 patients. Needed psychological support was gotten from colleagues involved in the COVID-19 response. HCWs identified multiple sources of psychosocial support, including colleagues, the Nigeria Centre for Disease Control (NCDC), religious organizations, agencies, and private individuals. HCWs acknowledge the numerous contributions from these groups, which were provided just in time to meet existing needs.

"I made it a point of duty to speak with Senior Colleagues who gave us psychological support. There was also one on one monitoring with others." (***Medical Officer 1***)

"We receive psychosocial training and psychological support on zoom. NCDC and IPC officials come regularly to visit." (***Nurse 2***)

Resources were only supplied in inadequate quantities to isolation centers. Basic personal protective equipment (PPE) was inadequate for use among healthcare workers. Face masks, e.g., N95 were not readily available for use. Medications were also not adequately provided. Due to the paucity of these safety gears, non-governmental and religious organizations donated gifts in cash and kind to make safety gears increasingly available to HCWs. At other times when gross inadequacy existed, HCWs had to either recycle already used PPE or purchase of their own volition.

"There have been moments when there were less than adequate lifesaving equipment and resources compared to the patient surge." (***Medical Officer 3***)

"Useful drugs for regular symptoms usually out of stock." (***Medical Officer 7***)

"We have received donations from Churches and other organizations." (***Medical Officer 6***)

"We do recycle one N-95 for about 2 – 3 weeks." (***Nurse 4***)

"I got a pack of masks of N95 for myself… I got my own apron too which I bring to the hospital when coming for duty." (***Nurse 1***)

HCWs frequently complained of the discomfort experienced with the use of safety gears, and a few were weighed down by its use. Although these gears offer protection, most HCWs worried about the distress associated with its use. However, the discomfort could not be reduced. Personal responsibility regarding compliance to PPE usage was viewed as a preventive strategy for COVID-19 infection especially with the increased rate of infection among HCWs. COVID-19 testing was commenced among HCWs but was suspended due to shortage of human resources.

"Full gear is very uncomfortable, especially having to stay on it for long period when there are many patients to see." (***Nurse 3***).

"Six nurses turned positive and health workers were told to stop testing for fear of being short-staffed." (***Nurse 4***)

Although HCWs had some level of protection against COVID-19 at isolation centers, they were worried about premeditated COVID-19 transmission from patients. A deliberate elusion of the complete history from patients or presentation of false history was identified to put the lives of health workers increasingly at risk for COVID-19. On the other hand, deliberate refusal for cooperation from patients caused HCWs a lot of stress. This drained HCWs physically and emotionally, and wasted valuable time that could be spent on other patients who require care. Great difficulty was experienced in explaining the need for isolation for asymptomatic persons who had had contact with confirmed cases previously. Many patients were greatly afraid, and so HCWs had to act as counsellors to calm the situation.

"Untruthful patient hiding history of common disease could be so challenging." (***Medical Officer 5***)

"Some don't have symptoms and do not understand why they are being held here. Others are also afraid." (***Medical Officer 7***)

"Counselling and reassuring patients could be so stressful…" (***Nurse 3***)

Some healthcare providers felt challenged of poor staff welfare and delayed payment of allowances. In overcoming these challenges, reports were made to the concerned authorities, and improved staff welfare was ensured. Many HCWs were faced with inadequate logistics regarding the processing and collection of COVID-19 test results. This was forestalled and reviewed by concerned staff, and hastened the turnaround time for collection of COVID-19 test results.

"We experienced irregular welfare, especially food and resting space for HCW." (***Medical Officer 3***)

"I adapted to the challenges of delayed test results by reporting to Superior Officers, e.g., head of the lab and head of case management, with moderate success." (***Medical Officer 3***)

Language barrier was a notable challenge in COVID-19 care at isolation centers, the existence of which prevented understanding between HCWs and patients. This thwarted cooperation between patients and HCWs. However, this challenge was countered by the engagement of a language translator.

"We experienced language barrier, but got a translator on the phone for the foreigners." (***Medical Officer 10***)

Many workers were deprived of the opportunity for regular visits to their homes. This created a form of disconnection among family members. But this challenge was overcome using online media for communication during this period. The alternative means of communication provided additional psychosocial support and approval to HCWs.

"Because we are away from family members, we make video calls with them." (***Medical Officer 9***)

"I get a lot of compliments from my friends and families." (***Nurse 1***)

Theme three: Experiences in COVID-19 care

The third theme identifies the skills, feelings, and attitudes of HCWs at isolation centers. The reactions of HCWs fluctuated with patients' health condition. As emotional beings, HCWs felt delighted on patients' recovery and discharge. Success stories served as a source of motivation which propels HCW to advance in the provision of COVID-19 care. Loss of a patient on whom resources had been expended could be traumatizing for HCWs to bear. HCWs also grieved over the deterioration of the health condition of their patients after treatment sessions.

"We hate to see patients dying in our presence. I am feeling positive because I can see people coming in breathless and they are being discharged home. It brings one joy and this propels me to do more." (***Medical Officer 1***)

Training sessions during COVID-19 response has increased the knowledge of IPC skills among HCWs. The sessions have been overseen by the Nigerian Centre for Disease Control and IPC experts in the COVID-19 response team. Training sessions included approaches that save time and other resources while maintaining the quality and safety of healthcare either for patients or HCWs. The depth of the training prepared doctors and nurses at isolation centers with sufficient knowledge regarding case management. Great importance accorded to frontline HCWs conferred on them a heroic feeling with increased confidence levels on handling COVID patients.

"We hardly maintained aseptic technique before where I was working but now we maintain it strictly here." (***Nurse 2***)

"I feel like one of the world heroes being on the frontline." (***Nurse 1***)

Despite being involved in COVID-19 care which requires sensitive case management, stigmatization of patients still exists among HCWs as in any regular illness. While patients are grappling with the reality of their infection status, stigmatization from HCWs is not likely to enhance patient cooperation. The lack of a friendly environment could reduce the chances for recovery among some patients. Other patients may develop psychological health conditions, which is an indicator for COVID-19 complications.

"Because patients found it difficult coping with the COVID-19 experience and are stigmatized, so it makes working with them difficult." (***Medical Officer 10***)

Theme four: Necessities in COVID-19 care

This theme highlights the unmet needs of HCWs at COVID-19 isolation centers. Needs are being met, but the increasing number of infections demand increased resources and health system capacity. The differences in the presentation of COVID-19 among different individuals calls for expert opinion in case management. These experts who are professionals in their specialties could promptly provide information related to the prompt provision of appropriate care to patients. Also, the presence of expert opinion would enhance review of COVID-19 cases early enough.

"We need an expert opinion in specific care management, e.g., O & G, Cardiology etc." (***Medical Officer 4***).

Necessary in the COVID-19 response among HCWs at isolation centers is an increased level of staff welfare. Delay regarding payment of allowances of HCWs should not be entertained from any quarter. There also exists the need for increased provision of PPE gears. Both the government and NGOs are expected to take up this challenge of meeting the needs of HCWs involved in the COVID-19 response.

"They should not wait for us to ask before they pay hazard allowance. Volunteers' money should be paid on time." (***Medical Officer 5***)

"Government should provide enough PPE and renewable needs at the right time." (***Medical Officer 10***)

"Other support needed include more NGOS to donate more PPE to the Center, because they are being used daily…" (***Medical Officer 9***)

HCWs are increasingly at risk of working under pressure at COVID-19 isolation centers. HCWs are vulnerable to psychological disorders such as depression and anxiety. Due to the different psychological challenges that could result during caregiving and admission at isolation centers, mental health assessment of HCWs and patients is required. Clinical psychologists play the key role in mental health assessment, and they are required in increased numbers at isolation centers.

"I am depressed because we are losing more patients as we can do very little in terms of their management." (***Medical Officer 4***)

"I think we need psychological and emotional evaluation regularly." (***Medical Officer 1***).

"We need more clinical psychologists and they need to be more visible in their work." ***(Medical Officer 10)***

Increased compliance among HCWs and members of the public is needed in the COVID-19 response. This would help reduce the risk of infection, while providing infected persons with adequate resources for their care. Isolation centers are required to be opened always for the provision of adequate healthcare to COVID-19

patients, and a reduced risk of infection across the entire population.

"Every healthcare worker is advised to always adhere to IPC measures daily." (***Medical Officer 10***)

"Do not close the isolation centers. We have not reached the infection peak in Nigeria yet." (***Medical Officer 6***)

Discussion

From this study, we continually observed that HCWs had a sense of responsibility in the management of COVID-19 patients regardless of the harm such services pose to them. The lived experiences of HCWs in ensuring patients' recovery and minimizing deaths due to COVID-19 were continually described. HCWs are critical to the development of any given country. Health is needed for productive performance hence the providers of quality healthcare are meant to be acclaimed. We found that in spite of the underlying fear of being infected with COVID-19 and onward transmission to family members, HCWs exhibited doggedness in discharging their duties and concentrating their efforts in the spirit of humanity, commitment, and professionalism in COVID-19 care. The increasingly recorded rates of COVID-19 infection among HCWs in Nigeria was expected to discourage HCWs from service provision.[20] These HCWs however remained persistent in their commitments to serve humanity. Such commitments therefore exemplify the importance of HCWs in providing care to COVID-19 patients at isolation centers. Similarly, HCWs were the backbone of the COVID-19 crisis in China.[16] This finding thus implies that HCWs must be accorded great recognition as life savers and builders of any country, and in whose absence, care would not be available for COVID-19-positive persons.

Findings from this study suggested that the novelty of COVID-19 and the differences in its presentation necessitated the provision of different forms of care to COVID-19-patients at different instances. The lack of any known effective medication further accentuated the need for regular supportive care provision from HCWs. The rapidly changing health condition of critically ill patients and persons with complications necessitated the provision of supportive care at frequent periods in order to care for COVID-19 patients. This therefore resulted in increased workloads that included comprehensive assessment and monitoring and rapid detection of deteriorating conditions. Medical officers and nurses simultaneously provided psychological support and symptomatic care while ensuring improvements in patients' health, thus increasing the workloads of these HCWs. Increased workload was notable during previous disease outbreaks such as EVD where the care of infected persons solely relied on supportive medical and nursing care.[21] A similar experience of increased workload was reported in a study conducted among frontline HCWs in Chinese isolation centers.[16] Considering the importance of psychological care to recovery, professional training of HCWs on psychological care is required, alongside reasonable scheduling of work shifts.

We found that COVID-19 introduced numerous challenges to the health system, particularly critical care medicine. This was evident in the need to deploy HCWs from different departments who had limited experiences in the management of infectious diseases. Therefore, the training of deployed HCWs became pertinent in order to handle and appropriately manage the COVID-19 outbreak. Trainings and improved communication skills have been recommended as important measures for effective handling of unforeseen pandemic events.[22] Regular scheduling of infection prevention and control trainings is needed to adequately prepare HCWs in the effective management of health emergencies.[23] This finding therefore indicates the need for trainings of all HCWs in infectious disease management irrespective of their specialties in order to assure comprehensive response to future pandemics across all levels of healthcare.[24] This would improve adaptability to the use of PPE among HCWs early during any outbreak.

We found that HCWs experienced a persistent shortage of PPE, material, and financial resources for COVID-19 risk reduction

while providing COVID-19-focused care. Shortage of PPE intensified panic emotions over the risk of contracting COVID-19 among HCWs involved in the COVID-19 response. During the SARS outbreak, high levels of confidence in available safety equipment and IPC measures reduced emotional exhaustion among nurses.[15] The similarity of our findings with the reference study indicates that workplace safety improves the mental health of HCWs, and enables them to provide adequate and appropriate care to COVID-19 patients when needed. The existence of support systems is likely to improve mental health conditions of HCWs during the COVID-19 response.

In the face of the COVID-19 pandemic, HCWs demonstrated resilience. Different stress-relieving measures, support mechanisms, and self-adjustment skills were adopted while focusing on COVID-19 ill patients. HCWs in this study reported emotions of distraught over the loss of patients, and derived great pleasure on patients' recovery. Studies conducted during the outbreaks of SARS and MERS similarly reported the existence of fear, anxiety, frustration and increased risk of mental disorders among HCWs.[7,9] Respondents in this study managed emotional stress using supports derived from family members and professional colleagues. This finding therefore points to the need for regular monitoring of mental health of HCWs involved in the COVID-19 response, alongside the provision of professional psychological counselling.

The findings in this study could have been limited by being carried out in only one State. However, since Lagos State is the epicenter of COVID-19 in Nigeria and the first State to have multiple isolation centers, it was needful that this study be conducted in Lagos State. Overall, this study provides quality knowledge on the lived experiences and challenges of HCWs who are involved in the COVID-19 response in Nigeria.

Conclusions

HCWs are active change agents whose expertise have been shown to contribute to the protection of any given population against viral epidemics. HCWs who are involved in the COVID-19 response are at risk of mental and emotional health challenges. HCWs displayed doggedness to the delivery of quality health service, while coping with the challenges associated with the provision of care at COVID-19 isolation centers. We therefore recommend improvements of IPC and personal protection skills for all categories of HCWs. Also, continuous training and supervision of IPC trainings need to be intensified and overseen by conscientious personnel. In addition, the adequate provision of PPE in isolation centers needs to be ensured in assuring a safe working environment for HCWs involved in COVID-19 care at isolation centers. In addition, working hours are required to be set within reasonable limits in order to prevent HCWs from overwork and burnouts. Commencement and intensification of regular counselling sessions and mental evaluation of HCWs needs to be conducted, while assuring them of a strengthened support system.

Authors' contributions statement: JOO and OSI conceived the study. JOO and AAF participated in data collection. JOO, OSI, IO and AAA drafted the initial copy of the manuscript. JOO, OSI, AAF, IO, AAA, OO, LO, AVK and MSB read, reviewed, and approved the final version of the manuscript.

Conflicts of interest: All authors – none to declare.

Funding: None to declare.

Acknowledgements: The authors are grateful to all the COVID-19 frontline healthcare workers who participated in this study.

References

1. Ilesanmi O, Afolabi A. Perception and practices during the COVID-19 pandemic in an urban community in Nigeria: a cross-sectional study. Peer J. 2020;8:e10038. https://doi.org/10.7717/peerj.10038
2. Ilesanmi OS, Afolabi AA. In search of the true prevalence of COVID-19 in Africa: time to involve more stakeholders. Int J Health Sci. 2020;In press:e108105. https://doi.org/10.5812/ijhls.108105
3. European Centre for Disease Control. COVID-19 situation update worldwide, as of 3 November 2020. Accessed on: 03 November 2020. Available at: https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases

4. Belfroid E, van Steenbergen J, Timen A, Ellerbroek P, Huis A, Hulscher M. Preparedness and the importance of meeting the needs of healthcare workers: a qualitative study on Ebola. J Hosp Infect. 2018;98:212-8. https://doi.org/10.1016/j.jhin.2017.07.001
5. Raven J, Wurie H, Witter S. Health workers' experiences of coping with the Ebola epidemic in Sierra Leone's health system: a qualitative study. BMC Health Serv Res. 2018;18:251. https://doi.org/10.1186/s12913-018-3072-3
6. Brooks SK, Dunn R, Amlôt R, Rubin GJ, Greenberg N. A systematic, thematic review of social and occupational factors associated with psychological outcomes in healthcare employees during an infectious disease outbreak. J Occup Environ Med. 2018;60:248-57. https://doi.org/10.1097/JOM.0000000000001235
7. Kim Y. Nurses' experiences of care for patients with Middle East respiratory syndrome-coronavirus in South Korea. Am J Infect Control. 2018;46:781-7. https://doi.org/10.1016/j.ajic.2018.01.012
8. McMahon SA, Ho LS, Brown H, Miller L, Ansumana R, Kennedy CE. Healthcare providers on the frontlines: a qualitative investigation of the social and emotional impact of delivering health services during Sierra Leone's Ebola epidemic. Health Policy Plan. 2016;31:1232-9. https://doi.org/10.1093/heapol/czw055
9. Lee SM, Kang WS, Cho AR, Kim T, Park JK. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. Compr Psychiatry. 2018;87:123-7. https://doi.org/10.1016/j.comppsych.2018.10.003
10. Kisely S, Warren N, McMahon L, Dalais C, Henry I, Siskind D. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis. BMJ. 2020;369:m1642. https://doi.org/10.1136/bmj.m1642
11. Temsah MH, Al-Sohime F, Alamro N, et al. The psychological impact of COVID-19 pandemic on health care workers in a MERS-CoV endemic country. J Infect Public Health. 2020;13:877-82. https://doi.org/10.1016/j.jiph.2020.05.021
12. Lai J, Ma S, Wang Y, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open. 2020;3:e203976. https://doi.org/10.1001/jamanetworkopen.2020.3976
13. Wong AH, Pacella-LaBarbara ML, Ray JM, Ranney ML, Chang BP. Healing the healer: protecting emergency health care workers' mental health during COVID-19. Ann Emerg Med. 2020;76:379-384. https://doi.org/10.1016/j.annemergmed.2020.04.041
14. Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A, Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. J Travel Med. 2020;27:taaa031. https://doi.org/10.1093/jtm/taaa031
15. Liu Q, Luo D, Haase JE, et al. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. Lancet Glob Health. 2020;8:e790-8. https://doi.org/10.1016/S2214-109X(20)30204-7
16. Sun N, Wei L, Shi S, et al. A qualitative study on the psychological experience of caregivers of COVID-19 patients. Am J Infect Control. 2020;48:592-8. https://doi.org/10.1016/j.ajic.2020.03.018
17. Nigeria COVID-19 for Disease Control. Progression of COVID-19 cases in Nigeria. Accessed on: 01 September 2020. Available at: https://covid19.ncdc.gov.ng/progression/
18. Colaizzi PF. Psychological research as the phenomenologist views it. In: Valle RS, King M, eds. Existential-phenomenological alternatives for psychology. New York, NY: Oxford University Press; 1978. pp: 48-71.
19. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3:77-101. https://doi.org/10.1191/1478088706qp063oa
20. Abujah R. Minister raises alarm over rising COVID-19 cases among health workers. The Herald. 14 August 2020. Accessed on: 01 September 2020. Available at: https://www.herald.ng/minister-raises-alarm-over-rising-covid-19-cases-among-health-workers/
21. McGillis Hall L, Kashin J. Public understanding of the role of nurses during Ebola. J Nurs Scholarsh. 2016;48:91-7. https://doi.org/10.1111/jnu.12182
22. Speroni KG, Seibert DJ, Mallinson RK. Nurses' perceptions on Ebola care in the United States, part 2: a qualitative analysis. J Nurs Adm. 2015;45:544-50. https://doi.org/10.1097/NNA.0000000000000261
23. Li L, Xv Q, Yan J. COVID-19: the need for continuous medical education and training. Lancet Respir Med. 2020;8:e23. https://doi.org/10.1016/S2213-2600(20)30125-9
24. Ilesanmi OS, Afolabi AA. Time to move from vertical to horizontal approach in our COVID-19 response in Nigeria. SciMed J. 2020;2:28-9. https://doi.org/10.28991/SciMedJ-2020-02-SI-3

Please cite this article as:
Okediran JO, Ilesanmi OS, Fetuga AA, Onoh I, Afolabi AA, Ogunbode O, Olajide L, Kwaghe AV, Balogun MS. The experiences of healthcare workers during the COVID-19 crisis in Lagos, Nigeria: A qualitative study. GERMS. 2020;10(4):356-366. doi: 10.18683/germs.2020.1228