

BMJ Open Lived experience of Jordanian front-line healthcare workers amid the COVID-19 pandemic: a qualitative study

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ABSTRACT

Objectives This study aimed to explore the lived experience of Jordanian front-line healthcare workers (FHCWs), including their experienced challenges and adaptations amid the COVID-19 pandemic.

Design A phenomenological qualitative design was used to highlight the experiences of a sample Jordanian FHCWs during the COVID-19 pandemic. Qualitative interviews were conducted using a semistructured guide with open-ended questions, audiotaped and then transcribed verbatim. Thematic analysis of the transcribed narratives was conducted using an open coding line by line to develop themes and related subthemes.

Setting Mobile COVID-19 testing and contact tracing units during an active surge of cases in Jordan between May and September 2020.

Participants Participants were recruited using purposive sampling method and consisted of 15 FHCWs (2 physicians, 10 nurses, 2 paramedics and 1 laboratory technician) who have worked in testing and contact tracing teams in the community and have dealt with suspected or confirmed cases of COVID-19 infection.

Results Participant narratives were classified into two main overarching themes; challenges and adaptation themes. The challenges theme was exhibited as follows: (1) an excruciating encounter with an invisible enemy, (2) distorted knowledge about COVID-19 and (3) organisational and administrative challenges. The adaptation theme was exhibited as follows: (1) seeking relevant knowledge about the disease and (2) seeking more connectedness.

Conclusions The COVID-19 pandemic exerted many challenges for FHCWs at multiple levels; intrapersonal and interpersonal, organisational and societal levels. Nevertheless, a number of adaptation strategies within these levels have been reported. This study helps to provide the base on which healthcare officials and public health personnel can formulate preparedness plans that tackle challenges faced by front-line workers, which ultimately enhance the resilience of healthcare systems to withstand future pandemics.

INTRODUCTION

The global pandemic of COVID-19 exerted a halt to everyone's way of living and has affected both our psychosocial well-being and quality of life. COVID-19 had also

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This is the first empirical study exploring the views and insights of front-line healthcare providers in Jordan, and probably the region, amid the COVID-19 pandemic.
- ⇒ This qualitative study allowed the representation of the voices of front-line healthcare workers in the 'testing and contact tracing' teams to express their lived experiences during the COVID-19 pandemic.
- ⇒ Inherent with qualitative methodologies, interpretations of the results cannot be generalised outside the context of the current study.
- ⇒ The use of a purposive sampling method, though brings in-depth insights from participants who have been immersed in the phenomenon being investigated, is inherently prone to researcher's bias.

overwhelmed healthcare systems in many countries around the world,¹⁻³ including Jordan.⁴ Combating a new unknown virus with no effective treatment or vaccine, at the time, had a tremendous toll on the lives of medical workers worldwide. COVID-19 was declared a global pandemic by the WHO due to its high contagion and mortality rate.

As Jordan was hit by the pandemic, the Jordanian government implemented early mitigation and crisis management measures to control the spread of the virus. Since mid-March 2020, Jordan has enforced complete lockdown for almost a month, henceforth established a partial lockdown and prohibited mass gatherings, encouraged social distancing and wearing protective masks at all times, as well as switching schools and universities to distance learning. As of September 2020, there were a total of 6042 cumulative confirmed cases of COVID-19 (including 2195 active cases) and 35 deaths in Jordan.⁵

A strict testing and contact tracing system was also implemented in Jordan. Mobile testing and contact tracing teams are epidemiological inspection teams that work in proximity with suspected and confirmed

COVID-19 cases. These teams were composed of front-line healthcare workers (FHCWs) such as physicians, nurses, paramedics and laboratory technicians who work in the field in the community. They were dressed in full protective gear when in contact with suspected or confirmed cases of COVID-19. It is expected that these work conditions had created mental and emotional stresses due to the work nature, workload and risk of contracting the infection and infecting family members.

A number of studies have explored the lived experiences of healthcare workers such as physicians and nurses who tackled the pandemic,^{6–10} none have explored the lived experience of front-line COVID-19 healthcare responders who mainly work in the testing and contact tracing teams. More importantly, none have explored the whole picture of both challenges endured and adaptations orchestrated by FHCWs during the pandemic. This study, therefore, aimed to investigate the lived experience of Jordanian FHCWs who worked in testing and contact tracing teams during the first wave of COVID-19, the challenges they and their families faced, and the adaptations they used that promoted their resilience to deal with the repercussions of this pandemic.

METHODS

Design, participants and study context

This study used a phenomenological qualitative design. The sample consisted of 15 FHCWs who worked in testing and contact tracing teams in Jordan and were recruited using a purposive sampling method. Purposive sampling allows the researcher to recruit participants that are more likely to provide an in-depth insight to the phenomenon being examined.¹¹ To be included in the study, prospective participants should have been working in the ‘testing and contact tracing’ teams in Jordan for at least a month. A number of testing and contact tracing teams, employed by the Ministry of Health, were identified and their members were approached and invited to participate after full explanation of the study purpose and procedures.

Patient and public involvement

No patients or participants were involved.

Data collection and outcome measures

A semistructured interview guide was used to provide an in-depth insight into the FHCWs’ lived experiences in battling COVID-19 mainly as members of the testing and contact tracing teams in Jordan. The guide focused on the lived experiences of the FHCWs during the early stages of the COVID-19 pandemic, highlighting their work challenges and adaptations, and was reviewed and revised by three authors (MSN, AOO and AFJ). A research assistant was trained on qualitative interviewing using the semistructured guide, which was then piloted with two participants to ensure its validity. Minor modifications on the questions and their order were made for smoother flow

Box 1 Semistructured interview guide

Semistructured interview guide questions

- ⇒ Can you tell me about yourself?
- ⇒ What is your job? How old? What do you do? Residence and living arrangement prior to pandemic?
- ⇒ Have you volunteered to become part of Jordan’s First responders’/ detection teams? What was the motive for joining?
- ⇒ Since the start of COVID-19, what are the challenges that you currently feel and encounter? What aspects of your day are the most challenging and stressful? Can you describe one full day?
- ⇒ How do you feel about people who are most likely and potentially are COVID-19 infected?
- ⇒ How do you prepare yourself to get into an area that is possibly infected with COVID-19?
- ⇒ Do you have fears about getting infected with COVID-19 in your line of work?
- ⇒ How do people/possible patients react to you when they see you?
- ⇒ How do people react if they knew that you are part of the team?
- ⇒ How confident are you that you can handle this burden?
- ⇒ Tell us about your feelings now! How do you feel?
 - ⇒ Props:
 - Sad? Happy? Anxious? Irritable? Bored? And why?
 - How do rate your stress now?
- ⇒ How do you connect socially with others family and friends? Do your family and friends contact you often?
- ⇒ How does your family feel (or you think they feel) about your job?
- ⇒ Do you feel that your interaction with your family has been affected (negatively or positively) lately amid the COVID-19 spread?
- ⇒ How does the community feel about your job? Do you feel appreciated?
- ⇒ What changes in your life? Your life routines? Your social interactions have changed since joining this team? Weight? Appetite? Exercise habits?
- ⇒ Do you have any outside help? (If needed)
- ⇒ What do you do to relieve your stress and tension (if any)?
- ⇒ Was there any advice given to you? What helped? What did not?
- ⇒ Were there any changes to your home atmosphere? How?
- ⇒ What do you think of available services or professional help for your relative in Jordan during the pandemic? What else do you need?
- ⇒ Is there anything you like to add/say?

of the interview. **Box 1** details the questions of the semistructured interview guide used in the study.

Interviews were conducted by phone during the active surge of COVID-19 cases from May to September of 2020. Phone interviews were considered by the researchers as the safest and more convenient method of data collection at that time. Interviews, lasting between 30 and 45 min, were audiotaped with the participant’s consent.

Data analysis

All recorded interviews, conducted in native Arabic, were transcribed verbatim. A qualitative data analysis was conducted using an open coding line by line to establish thematic analysis. Coded themes were aggregated when possible into main themes and subthemes. Data Saturation was reached at a sample size of 15 as participants’ insights to the interview questions became redundant. Multiple methods were used to ensure rigour of this

Table 1 Demographic characteristics of the sample

Variable (n=15)	Mean±SD or N (%)
Age (years), mean (SD)	32.27±4.89
Range	23–41 years
Gender	
Male	12 (80%)
Female	3 (20%)
Profession	
Physician	2 (13.3%)
Nurse	10 (66.7%)
Paramedic	2 (13.3%)
Laboratory technician	1 (6.7%)
Marital status	
Single	5 (33.3%)
Married	10 (66.7%)

qualitative study. Two researchers (MSN, AOO) coded the interviews separately and negotiated a final list. Furthermore, to ensure credibility of the analysis process, quotations relevant to the emerged themes were then translated from Arabic into English using forward and backward translations.

RESULTS

Demographic characteristics

Fifteen Jordanian FHCWs, 12 males and 3 females, with a mean age of 32.3 years (\pm SD 4.9) and ranging between 23 and 41 years old participated in the study. Sample represented a variety of healthcare disciplines, mainly nurses, who were on the front-line battling the pandemic in Jordan as part of the testing and contact tracing teams employed in the community. Other FHCWs included physicians, paramedics and a laboratory technician. Two thirds of the participants were married with children, while the others were singles who lived with their families. [Table 1](#) summarises the demographic characteristics of each of the participants.

Main thematic findings

The findings of this qualitative study described the main perspectives and lived experiences as perceived by Jordanian front-line workers during the first few months into the COVID-19 pandemic. Themes and subthemes were identified through exhaustive in-depth thematic analysis. The emerged themes were categorised into two main overarching themes; challenges and adaptation themes. The ‘challenges’ theme refers to the problems and difficulties experienced by FHCWs who were members of the testing and contact tracing teams during their work. The ‘adaptations’ theme refers to the measures and/or actions that helped FHCWs overcome the challenges.

Box 2 Summary of the main themes and subthemes

Summary of the main themes and subthemes

Challenges:

- ⇒ An excruciating encounter with an invisible enemy
- ⇒ Feeling threatened by the viral infection.
- ⇒ Physical and mental demands due to increased infection control measures.
- ⇒ Concerns about the health of family and loved ones.
- ⇒ Distorted knowledge about COVID-19
- ⇒ Front-line healthcare workers' uncertainty about COVID-19.
- ⇒ Lack of people's cooperation.
- ⇒ Organisational and administrative challenges
- ⇒ Insufficient tools and personal protective equipment.
- ⇒ Change of information and protocols.
- ⇒ Shortage of staff and heavy workloads.

Adaptations employed by front-line healthcare workers:

- ⇒ Seeking relevant knowledge about the disease.
- ⇒ Seeking more connectedness
- ⇒ Spirituality.
- ⇒ Positive reflection of personal courage and professional responsibility.
- ⇒ Family and community support.
- ⇒ Respite care of self.
- ⇒ Team members' group support.
- ⇒ Organisational support.

The challenges theme was subcategorised into: (1) an excruciating encounter with an invisible enemy, (2) distorted knowledge about COVID-19 and (3) organisational and administrative challenges. On the other hand, the adaptations theme was subcategorised into: (1) seeking relevant knowledge about the disease and (2) seeking more connectedness. [Box 2](#) details the major themes and related subthemes.

Challenges of FHCWs

Participants in this study have reported a number of challenges they have experienced during the COVID-19 pandemic during their work in the testing and contact tracing teams.

An excruciating encounter with an invisible enemy

Participants in this study have stated that due to the nature of the virus and the possibility of an airborne pandemic, it was scary and felt like living the scenes of an apocalyptic end of the world cinematic movie.

Feeling threatened by the viral infection

Being in the front line with an invisible virus brought nightmares to most of our participants. This fear has complicated their work and exerted an extra pressure of not knowing the possibility of getting infected mainly by just doing their job; and doubting each precaution they took.

I swear; I was afraid to touch anything. Yes, of course I was scared and my body was shivering when the pandemic first started... Even with the availability of

protective equipment, there is still fear of the place you are in; the chair, the computer mouse and the keyboard... You could get infected by a touch, a press on a button, or from the elevator. (Participant #1, Nurse).

The disease itself was a challenge, especially with us being in the front lines, and most of the positive cases were discovered by us during sample taking. The whole thing was new and the whole world was frightened by it. (Participant #2, Laboratory Technician).

The fear is when someone comes and we don't know what his problem is. I mean, for example some patients, our guys worked with them without knowing anything and they [patients] haven't told them anything either... The biggest challenge is when a patient comes and you aren't sure of whether he is infected or not and how to deal with him... That was the hardest thing. (Participant #8, Nurse).

Physical and mental demands due to increased infection control measures

Participants stated that being in the front line has forced them to implement extra precautions and preventive measures to protect themselves and others against contracting the COVID-19 infection. It has exerted a huge burden of extra physical and mental demands while being very superstitious with protection measures and maintaining full personal protective equipment (PPE) for long periods.

As medical staff, we weren't used to wearing full protective clothing for long hours. Starting from 9:00 am until 4:00pm you stay wearing your full clothing. (Participant #4, Paramedic).

There was no confirmed specific way on how the virus is transmitting, I mean every day we would hear something new. Once they said it was airborne, and the next they said it spreads through contact. Things were unclear, that's why the triage nurse was the only medical staff wearing full protective clothing including mask, eye goggles and gown; so he could receive the patient in the isolation room. (Participant #10, Nurse).

Concerns about the health of family and loved ones

Participants have expressed that part of the fear at their workplace rooted from fear about the safety of their families. Participants were concerned about accidentally contracting the disease and passing it to their family members or loved ones.

Because I have two daughters and living with my extended family, I was afraid that, God forbids, one of them would catch the disease. I mean, the least is that I was going to be in contact with my husband and children, and my husband would be in contact with his family which would make us a hotspot for

the disease. I was afraid I was going to infect them. (Participant #3, Nurse).

Honestly, everyone was afraid to spread the disease from themselves to their family, their children, and the elderly. That was what frightened us the most. (Participant #5, Nurse).

We were afraid from it, we were afraid for our life, and our children. I mean, before we got inside our homes, we used to take our clothes off at the door, keep them outside and then start to wash ourselves. I mean, it was like a phobia. (Participant #10, Nurse).

The challenge was not to get infected myself, but to infect the dearest people to my heart. I wouldn't mind if I was alone, but I didn't want to spread this disease to my father, mother and children because they had a weak immune system. (Participant #13, Nurse).

Distorted knowledge about COVID-19

Participants stated that due to the nature of this unprecedented pandemic, information about the disease process, how it spreads, and prevention and treatment measures were often distorted. This distortion was noted by the participants among both health-care workers and the public.

FHCWs' uncertainty about COVID-19

Participants have expressed a general lack of knowledge and uncertainty about the virus. There was a scarcity of information from evidence-based research studies exploring the virus origins, ways of transmissions and means of protection.

In the beginning of the pandemic, there was insufficient information about the disease, how it spreads and how to deal with the patients. Also, there weren't any scientifically proven studies, there wasn't enough awareness in the community or even the ability to know or learn. (Participant #9, Nurse).

Honestly, firstly no one knew what corona exactly was, and it was very frightening to me. (Participant #3, Nurse).

Lack of people's cooperation

Participants have stated that lack of knowledge in the general public combined with stigma about getting the disease have made it very hard for a good proportion of people in the community to cooperate with front-line workers.

At the beginning of the pandemic, some people took it like it was a stigma for someone to be infected, you know? Like, maybe people's awareness has become a challenge as well. (Participant #4, Paramedic).

The biggest challenge was when the patients themselves wouldn't cooperate with us while we were taking samples or they would give us misleading information that they weren't in contact with infected patients or they didn't attend that wedding that was a hotspot for

the disease, but in fact they were. (Participant #15, Physician).

Organisational and administrative challenges

Participants voiced their anger about the lack of management support from their healthcare administrators when it was mostly needed.

We used to be at the headquarters from 8:00 am, they would split every three individuals together into a team and send us to a specific area telling us to handle it all by ourselves and bring them samples. So, we used to go with our private cars on our own expenses. (Participant #15, Physician).

Transportation was with our private cars at first. One time, my car broke down and no one wanted to come help me. (Participant #14, Nurse).

Insufficient tools and PPE

Participants stated that there were, at times, insufficient amount of protective equipment (eg, masks, gloves and aprons) which led them to reuse and improvise at times.

There were not enough adequate personal protective equipment available at the beginning. So how could we deal with patients if our protective gear wasn't available? We only had gloves and masks. I mean, we didn't have the complete safety measures such as those available. (Participant #12, Nurse).

There was a shortage of masks and gloves. I used to go to work with only one mask and had 20 samples to take. What were we supposed to do? (Participant #14, Nurse).

Change of information and protocols

Participants stated that there were continuous changes of administrative decisions, work protocols and quarantine guidelines.

Everyday something new would come up. Once, they said it's airborne and then they said it spreads from contact, everything was unclear... We were living in fear. I mean, we didn't know what to do because every day there was a different decision. (Participant #10, Nurse).

Shortage of staff and heavy workloads

Participants have reported long working hours and staff shortage. Healthcare workers' shortage probably occurred because some healthcare workers were afraid of contracting the disease and consequently have not reported for duty, or because some workers got sick with the virus, or a combination of the two reasons. This shortage of staff has led other FHCWs to work more hours and cover more shifts to meet the extra demands of fighting the COVID-19 pandemic. Some participants, however, stated that due to their fear of bringing the disease to their families and to minimise the quarantine requirements between work

duties, they often preferred to work more days consecutively and take a longer time off instead.

We used to work very long shifts and the first couple of days we used to go back home after work, but then we stopped and decided to stay in one place all together. Whatever happens to one of us will happen to everyone else. (Participant #2, Laboratory Technician).

Adaptations employed by FHCWs

Participants in this study have revealed a number of adaptation strategies used to overcome the challenges they have experienced during the COVID-19 pandemic, which included: (1) increased knowledge about the disease and (2) seeking more connectedness.

Seeking relevant knowledge about the disease

Participants have revealed that the more knowledge and training they received about the disease, transmission methods, and ways of protection, the more they felt they were in control. Valuable sources of information that assisted FHCWs in gaining more knowledge included training workshops at work and online courses from national and international Massive Open Online Courses providers.

I tried to take many lectures and read about the subject... So we could be ready.... Like, we would know why we came to this place and we would know what was waiting for us up ahead. (Participant #2, Laboratory Technician).

When you read about the subject, you feel less stressed. Look, honestly, when someone is going for an operation and is scared of it, what does he do to stop being scared? He reads about it. So I used to read a lot about the subject. (Participant #7, Nurse).

Afterwards, once things started to become clearer and the amount of studies increased, we started to understand it better. (Participant #10, Nurse).

Seeking more connectedness

Participants in this study have revealed that connectedness, with self and others, served as an effective adaptation strategy that helped ease the burden of challenges imposed by COVID-19. Subthemes included spirituality, positive reflection of personal courage, family and community support, respite care of self, team members support and organisational support.

Spirituality

Participants have stated that they relied on their spiritual strength to guide them through this horrific time. They needed a larger entity that was bigger than what they were facing, and they have found it in God.

Honestly, during those times, I was seeking refuge in God and asking for his forgiveness... it made us feel relaxed. (Participant #3, Nurse).

We say ‘O Allah, in the name of Allah the most gracious and the most merciful’, and that’s it, then we would rely on Allah and put all our trust in him. (Participant #8, Nurse).

Mentally, I rely on our God... I pray to him and feel his presence with me. Like, praise be to our God. I have to be patient because our God willed me to be in this job and for the events to happen this way. (Participant #13, Nurse).

Positive reflection of personal courage and professional responsibility

Participants have revealed that they used positive self-talk and it reflected on their professional mission, which was viewed as sacred. With all eyes fixed on healthcare workers, they understood the risks and responsibilities of being a front-line worker and understood how important their job was viewed in the community as a whole.

In my point of view, because of my job, no matter what the patient’s nationality, sickness or religion is, I have to treat him. The patient didn’t do anything wrong and it’s not his fault, so he has a right to be treated. I mean, I used to hide my fear from my family and try to strengthen everyone around me (Participant #1, Nurse).

There was a very big responsibility. (Participant #4, Paramedic).

I love challenges and it helped me learn something new and gain new skills, so it really was a challenge. (Participant #9, Nurse).

We are strong and used to being patient. I always used to encourage myself saying that I can do it even if I am on my own. (Participant #13, Nurse).

Family and community support

The outpouring support of families for these front-line workers was a unifying and common theme in all of the interviews. This theme was of special importance, because of the source of this support. As these FHCWs felt worried about transmitting the virus to their families, at the same time, they felt empowered by the support they received from their families and the community. The families of front-line workers played a huge role in the lives, work commitment and ethics of these workers; to be supported by their families meant that they could move ahead with their fight against the virus.

My wife had a big role, she made things easier and helped me... My wife helped me and she was so understanding. (Participant #10, Nurse).

I live with my mother and brother. Honestly, they were very supportive psychologically, morally and in everything which helped me get through that difficult time. I swear, even people who would call and check up on me have really supported me psychologically, whether they be friends or family. (Participant #9, Nurse).

My family supported me psychologically because they knew the nature of my job and the stress it causes. (Participant #13, Nurse).

People thanked us and prayed to God to give us good health and wellness. They really used to support us and it was such a good feeling. (Participant #12, Nurse).

Respite care of self

During their free time, participants have used some leisure activities to occupy their time and take their minds off the worries of their work about the pandemic. For example, one participant resorted to gardening, while another practiced folklore dancing.

We had a big garden in my house and I used to plant when I was off from work. I planted it all with a large number of flowers, and considered it a way to relieve my stress. It gave me a lot of relief. (Participant #11, Physician).

We used to dance dabke [folk Jordanian dance], when we were alone to help improve our mood. We never danced in front of our patients, for sure. So we would go and folk dance while wearing our gowns. (Participant #8, Nurse).

Team members’ group support

Participants have stated that team members supported one another by venting their worries and job-related stressors. It allowed them to circulate ideas, suggestions and solutions among each other. Participants stated that it was important for them to hear the stories of struggle from other team members who were perceived to be in a similar situation. Sharing similar worries and challenges as a team, helped these participants put things into the right perspective.

Some of us would complain and others would vent, so we used to sit together and talk. We used to say that we need to have the right mindset and that we can’t retreat. Even if one of us did, there is always someone who will surely support him because we are a team... We will always be together in the medical staff, will always strengthen one another and deal with any situation together. (Participant #2, Laboratory Technician).

At work we always used to encourage and help each other. (Participant #14, Nurse).

Organisational support

Organisational support, when available, can boost workers’ morale and work ethics and motivation, as stated by participants.

But during Corona, we had psychological support from the head of our department and the administration. (Participant #9, Nurse).

The psychological support was having our manager come by us daily and say ‘may God give you wellness and health. (Participant #10, Nurse).

DISCUSSION

To our knowledge, this is the first qualitative study to explore the perspectives of FHCWs during COVID-19 pandemic in Jordan. In this study, a group of Jordanian FHCWs who worked in 'testing and contact tracing' teams described their own perceptions and insights on the lived experiences, challenges and adaptations regarding working during the first active COVID-19 wave in Jordan. There have been many important findings regarding the impact of COVID-19 on FHCWs' perspectives and experiences with regards to themselves, their families, work institutions and overall society. Participants voiced the challenges they endured, as well as adaptations they orchestrated in a highly stressful context and time.

The experiences of challenges that Jordanian FHCWs voiced were consistent with documented requests and desires of FHCWs worldwide. A number of qualitative studies have explored the lived experiences of healthcare workers who fought the COVID-19 pandemic in their countries: China,^{6 7 12} Pakistan,¹³ Turkey,^{8 14} Iran,⁹ Canada,¹⁵ USA,¹⁶⁻¹⁸ Australia,¹⁹ Spain,²⁰ South Korea,¹⁰ Qatar,²¹ Hong Kong²² and the UK.^{23 24} Shanafelt *et al* summarised the needs of FHCWs with their cry out to be heard, protected, prepared, supported and cared for.²⁵

One of the main challenges that FHCWs faced in Jordan was the psychological distress associated with fighting an invisible enemy. The COVID-19 pandemic has brought an unprecedented stressful working environment for the whole healthcare workers around the globe. A Jordanian study examined the psychological symptoms of Jordanian FHCWs during the COVID-19 surge, where authors reported that approximately one-third of the sample had severe symptoms of anxiety (29.5%), depression (34.5%) and insomnia (31.9%).²⁶ Other studies from China and Italy also reported that FHCWs suffered from clinically significant symptoms of anxiety, depression, insomnia and stress.²⁷⁻²⁹ The psychological burden of fighting the COVID-19 pandemic can be detrimental for the health and well-being of FHCWs, and thus, alleviating the impact of mental health symptom on FHCWs is imperative.³⁰

The stress of dealing with COVID-19 cases also includes fear for self and family to contract the disease. This overarching concern is a well-documented issue that FHCWs have worldwide.²⁵ Participants in our study voiced that family represented a source of both increased stress as well as a source of support. In Jordan, this dual effect of family can be explained by the fact that, people embrace collectivism rather than individualism; they are family-oriented, and value close interconnected relationships with family members.

The organisational and administrative systems, where these FHCWs work, were pivotal in their lived experience and their perceptions of the challenges and needed adaptation that could have contributed to their resilience to working in a very stressful working environment. The need for training and increasing the institutional mitigation and preparedness were common needs in the international literature.³¹⁻³³ During a pandemic, such as

COVID-19, healthcare administrations are encouraged to be open, transparent, dynamic and receptive to the needs of their constituents of healthcare workers in order to increase trust and work morals among the healthcare workers.³¹ Furthermore, organisational changes bureaucracies should be minimised to promote stability in the work process.²⁰ A Jordanian study explored physicians' knowledge and preparedness to combat COVID-19 in Jordan.³⁴ The study emphasised the notion that front-line preparedness hinges on two main concepts; individual and institutional preparedness. Another study asserted that providing adequate supplies of protective gear along with knowledge and training for disease outbreak control were the main factors that enhanced the providers' work expectations.³⁵

One important finding of this study is that the adaptations used are merely a reversed mirror image of the challenges incurred. For each challenge, participants have highlighted how they adapted to that challenge. The challenges voiced by the Jordanian FHCWs in this study originated from many different levels; personal, familial, organisational and societal. Adaptations, subsequently and logically, stemmed from the same levels to counterbalance the effect of these challenges. For example, on the personal level, FHCWs reported the challenge of having inadequate information about COVID-19 transmission and management, which in turn was met by the adaptation of seeking more knowledge about the virus through attending workshops and online courses. [Figure 1](#) illustrates the model of the challenges endured and adaptations orchestrated by the Jordanian FHCWs during the first active wave of COVID-19.

Interestingly, the majority of the research studies on the lived experience of FHCWs only focused on the challenges faced by them during the active surge of the pandemic, and at a time when there was limited evidence-based management strategies and with no effective vaccines. One study from Spain has delved into the adaptation strategies that FHCWs tried as self-help strategies.³⁶ The authors used a photovoice strategy, where they asked participants to provide photographs that embodied how they felt during the pandemic and then interviewed them about it. Participants highlighted the use of leisure and importance of community support.

Our study, however, highlighted adaptations used by the participants from their own perspective, and focused on what strategies have worked to their benefit, rather than suggesting to them what to do from an outsider's perspective. First, knowledge has proven to be a powerful tool against the spread of this pandemic. Evidence-based science was valued more than misleading and inaccurate information that was rapidly circulating in news and social media during the first surge of the COVID-19 pandemic. Second, FHCWs were greatly affected by fear and isolation due to the nature of the pandemic. One overarching theme of adaptation was to seek more connectedness; whether with God, self, family and community, team members and/or their organisation. These strategies

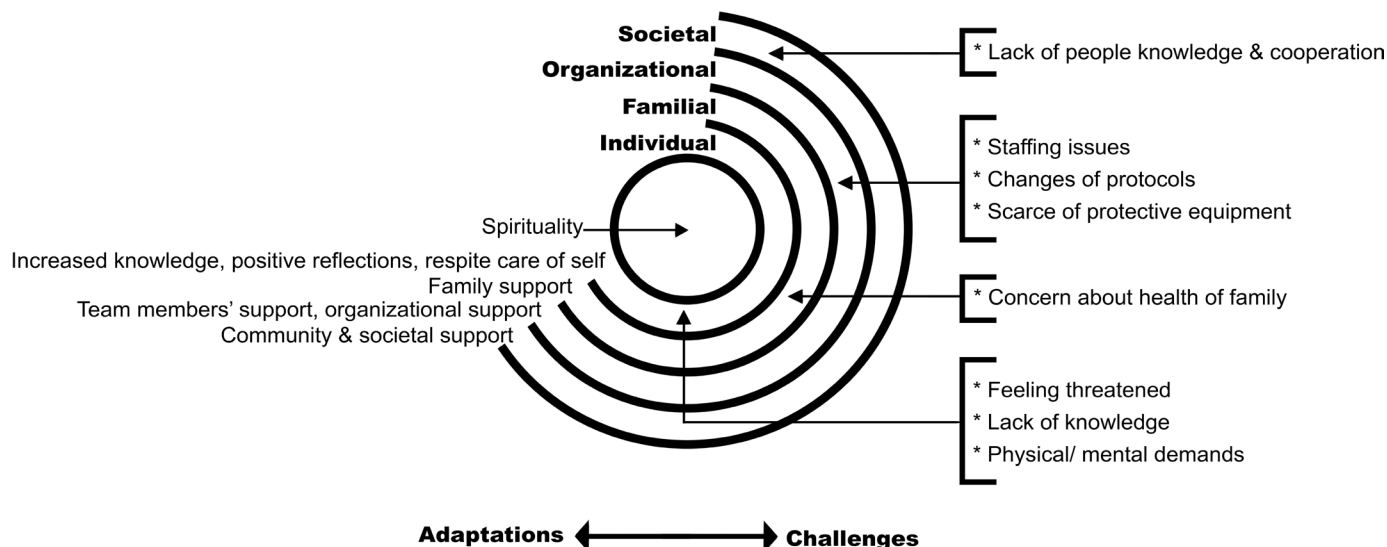


Figure 1 Model of challenges and adaptations of FHCWs and experience with COVID-19. FHCWs, front-line healthcare workers.

covered a wide scope of adaptations for the FHCWs that can be either generalised or taken into consideration to inform organisational policy changes and future disaster mitigation and preparedness.

Practice implications

Up to our knowledge, this was the first qualitative report on the lived experience of FHCWs during the COVID-19 pandemic in Jordan. Healthcare workers in general are our first line of defence against disasters such as the COVID-19 pandemic. In a timely qualitative study conducted in Delaware, USA on emergency medical service workers, respondents expressed concerns about working during a pandemic outbreak. However, they also felt obligated and willing to report to work despite the perceived high risk work conditions.³⁷

FHCWs in Jordan were confronted with an overwhelming work experience as they tackled the COVID-19 pandemic. The narratives of their experiences highlighted the need for a national emergency plan to focus on the psychological aid for these FHCWs and to prevent their eminent psychological burn-out. Multidisciplinary mental health teams are highly warranted to provide periodic psychological consultation and continuous support to FHCWs in Jordan. This request is echoed by many other researchers around the world.^{23 29 38 39}

National disaster management systems were completely overwhelmed and almost taken by surprise. An infection control system and protocol needs to be established to kick start immediately in case of future pandemics.^{40 41} Moreover, healthcare administration as well as national disaster management steering body should increase the trained and well-equipped staff of FHCWs both quantity and quality. Increasing quantity by hiring more HCWs to manage the surge of suspected cases. Hence, deployed workers on the field will work less working hours, have fewer working shifts and will ultimately decrease physical burden on FHCWs. Another way to increase quality is

by providing evidence-based protective equipment, and providing 'just-in-time' courses and continuing education about the pandemic and ways to protect self and family.⁴⁰ In fact, a study conducted in Jordan reported that 71.1% of 500 participating general HCWs were willing to report to duty during a pandemic provided they were equipped with adequate supplies of protective gear.³⁵ Moreover, establishing a plan for continuing education of FHCWs on evidence-based handling of the pandemic that is geared towards front-line personnel would increase preparedness and ease fears and anxiety. Jordan needs to focus on national emergency preparedness, not only for COVID-19 management, rather, using all-hazard approach of disaster preparedness enables the healthcare system to withstand all type of future hazards in Jordan. Tan *et al* clarifies that success in our efforts to tackle the pandemic hinges on the amount of investment we put into strengthening the HCWs' training and knowledge in proper disaster management.⁷

Limitations

This study is not without limitations. The use of a purposive sampling method, though brings in-depth insights from information-rich participants, is inherently prone to researcher's bias which limits the representation of the findings. Also, interviews were conducted through phone due to safety reasons, which was more convenient rather than optimal. Face-to-face interviews would have been more engaging to elicit more accurate interaction with the participants.

CONCLUSION

This study explored the lived experience of FHCWs with regard to working in testing and contact tracing teams during the first wave of COVID-19 cases in Jordan. Participants have described both challenges endured and adaptations orchestrated by FHCWs during the pandemic.

This study allowed for an in-depth understanding of the impact of COVID-19 on these professionals and could inform effective preventive strategies to promote a healthier work environment and better quality of life of this workforce. Consequently, better healthcare for the patients. This should also help optimise preparedness and mitigation measures in future pandemics. This study helps to provide the base on which healthcare official and public health personnel can formulate preparedness plans that tackle challenges faced the front-line workers, which ultimately enhance the resilience of healthcare system to withstand future pandemics.

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Patient consent for publication Not applicable.

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